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Differently...

New! Sustainability Technology Program



ABTech

2010 – 2011
Catalog

Asheville-Buncombe Technical Community College

www.abtech.edu

Catalog of Courses
Day and Evening College
Volume 48
2010-2011

Asheville Campus

340 Victoria Road
Asheville, NC 28801
Phone: 828/254-1921
Fax: 828/251-6355

Campus Police and Security:
828/279-3166
TDD: 254-1921, Ext. 444
or depress space bar several times for operator assistance

Enka Site

1459 Sand Hill Road
Candler, NC 28715
Phone: 828/254-1921
Ext. 5802
Fax: 828/281-9842

Madison Site

4646 U.S. Hwy. 25-70
Marshall, NC 28753
Phone: 828/649-2947
Fax: 828/281-9859

A-B Tech at the Mall

Asheville Mall
3 South Tunnel Road
Asheville, NC 28805
Phone: 828/254-1921
Ext. 7591

Campus Police and Security:
828/301-7150

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

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

Catalog changes:

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



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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
Automotive Systems Technology	A.A.S. Degree	Day/Evening
Automotive Systems Technology	Diploma	Day/Evening
AST - Basic Auto Repair	Certificate	Day/Evening
AST - Drive Trains	Certificate	Day/Evening
AST - Electrical/Electronics	Certificate	Day/Evening
AST - Under-Car	Certificate	Day/Evening
Baking and Pastry Arts	A.A.S. Degree	Day
Basic Law Enforcement Training	Certificate	Day/Evening
Biotechnology	A.A.S. Degree	Day
Business Administration	A.A.S. Degree	Day/Evening
Carpentry	Diploma	Day
Basic Carpentry	Certificate	Evening
Basic Cabinetry	Certificate	Evening
Civil Engineering Technology	A.A.S. Degree	Day/Evening
College Transfer:		
Associate in Arts	A.A. Degree	Day/Evening
Associate in Arts	A.A. Diploma	Day/Evening
Associate in Science	A.S. Degree	Day/Evening
Associate in Science	A.S. Diploma	Day/Evening
Associate in Fine Arts	A.F.A. Degree	Day
Computed Tomography & Magnetic	Diploma	Day
Resonance Imaging Technology		
Computed Tomography	Certificate	Day
Magnetic Resonance Imaging	Certificate	Day
Computer-Aided Drafting Technology	A.A.S. Degree	Day
Computer-Aided Drafting	Certificate	Evening
Architectural Drafting	Certificate	Evening
Landscape Architecture Drafting	Certificate	Evening
Computer Engineering Technology	A.A.S. Degree	Day/Evening
PC and Network Maintenance	Certificate	Day/Evening
Computer Information Technology	A.A.S. Degree	Day/Evening
Database Management	Certificate	Day/Evening
Geospatial Database Technology	Certificate	Day/Evening
Microcomputer Applications	Certificate	Day/Evening
PC Installation and Maintenance	Certificate	Day/Evening
Construction Management Technology	A.A.S. Degree	Evening
Construction Management Technology	Certificate	Evening
Cosmetology	A.A.S. Degree	Day/Evening
Cosmetology	Diploma	Day/Evening
Criminal Justice Technology	A.A.S. Degree	Day/Evening
Culinary Technology	A.A.S. Degree	Day
Dental Assisting	Diploma	Day
Dental Hygiene	A.A.S. Degree	Day
Diesel-See <i>Heavy-Equipment and Transport Technology</i>		
Digital Media Technology	A.A.S. Degree	Day/Evening
Digital Video	Certificate	Day/Evening
Interactive Multimedia	Certificate	Day/Evening
Geospatial Analysis and Visualization	Certificate	Day/Evening

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

Program	Credential	Schedule
Networking Technology	A.A.S. Degree	Day/Evening
Basic Network Administration	Certificate	Day/Evening
CCNA Preparation	Certificate	Day/Evening
Nursing		
Associate Degree Nursing	A.A.S. Degree	Day/Evening/Weekend
Associate Degree Nursing RIBN Option	A.A.S. Degree*	Day/Evening
Practical Nursing	Diploma	Day
* Dual Enrollment option with Western Carolina University		
Office Administration	A.A.S. Degree	Day
Office Administration	Diploma	Day
Word Processing/Desktop Publishing	Certificate	Day/Evening
Ophthalmic Medical Assistant	Diploma*	Day
*Diploma offered in collaboration with Caldwell Community College & Technical Institute		
Phlebotomy	Certificate	Day
Public Administration (Pending Approval)	A.A.S. Degree	Pending
Radiography	A.A.S. Degree	Day
Real Estate Appraisal	Certificate	Evening
Real Estate Licensing	Certificate	Evening
Resort and Spa Management	Certificate	Day
Surgical Technology	A.A.S. Degree	Day
Surgical Technology	Diploma	Day
Surveying Technology	A.A.S. Degree	Day/Evening
Civil/Surveying CAD	Certificate	Day/Evening
Surveying Fundamentals	Certificate	Day
Sustainability Technology	A.A.S. Degree	Day
Therapeutic Massage	A.A.S. Degree	Day/Evening
Therapeutic Massage	Diploma	Day/Evening
Veterinary Medical Technology	A.A.S. Degree	Day
Web Technologies	A.A.S. Degree	Day/Evening
Web Designer	Certificate	Day/Evening
Web Programming	Certificate	Day/Evening
Welding Technology	A.A.S. Degree	Day
Welding Technology	Diploma	Day
Welding Technology - Basic Welding I	Certificate	Evening
Welding Technology - Ornamental Ironwork	Certificate	Day

Address correspondence to the appropriate office in care of:

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

Tel: 828/254-1921

Fax: 828/251-6355

Internet: www.abtech.edu

Directory of College Services and Offices

Curriculum Programs	Vice President, Instructional Services
	Simpson Administration Building, Asheville Campus, Ext. 105
Allied Health and Public Service Education	Dean
	Rhododendron Building, Asheville Campus, Ext. 250
Emergency Services Academy	Associate Dean
	Hemlock Building, Asheville Campus, Ext. 353
Arts and Sciences	Dean
	Elm Building, Asheville Campus, Ext. 7650
Business and Hospitality Education	Dean
	Birch Building, Asheville Campus, Ext. 286
Hospitality Education Academy	Associate Dean
	Magnolia Building, Asheville Campus, Ext. 232
Career Pathways Partnership	Director
	Sunnicrest Building, Asheville Campus, Ext. 439
Engineering and Applied Technology	Dean
	Dogwood Building, Asheville Campus, Ext. 220
Instructional Support and Online Learning	Executive Director
	Holly Building, Asheville Campus, Ext. 439
Economic and Workforce Development/Continuing Education	Vice President
	Haynes Technology Center, Enka Site, Ext. 5837
Basic Skills	Executive Director
	Pines Building, Asheville Campus, Ext. 488
BioNetwork BioBusiness Center	Manager
	Technology Commercialization Center, Enka Site, Ext. 5844
BioNetwork Natural Products Laboratory	Coordinator
	Technology Commercialization Center, Enka Site, Ext. 5845
Community Service Programs	Director
	Pines Building, Asheville Campus, Ext. 134
Emergency Services Academy	Associate Dean
	Hemlock Building, Asheville Campus, Ext. 353
Entrepreneurial Ventures and Business Incubator	Executive Director
	Center for Business and Technology Incubation, Enka Site, Ext. 5851
GED Preparation	Basic Skills Office
	Pines Building, Asheville Campus, Ext. 132
GED Test Scheduling	Basic Skills Office
	Pines Building, Asheville Campus, Exts. 132, 433
GED Test Results/Transcripts	GED Examiner
	Pines Building, Asheville Campus, Ext. 312
Occupational and Public Service Training	Executive Director
	Haynes Technology Center, Enka Site, Ext. 5836
Workforce Development	Executive Director
	Haynes Technology Center, Enka Site, Ext. 5823
Office of Finance and Informations Systems Technology	Executive Vice President
	Simpson Administration Building, Asheville Campus, Ext. 111
Business Services	Executive Director, Business Services
	Bailey Student Services Center, Asheville Campus, Ext. 390
Information Systems Technology	Director, Information Systems Technology
	Simpson Administration Building, Asheville Campus, Ext. 124

Office of Risk Management and Operations	Vice President
	Simpson Administration Building, Asheville Campus, Ext. 120
Campus Police and Security	Chief of Police and Security
	Chestnut Building, Asheville Campus, Ext. 870
Plant Operations	Director, Plant Operations
	Chestnut Building, Asheville Campus, Ext. 482
Office of Student Services	Vice President, Student Services
	Bailey Student Services Center, Asheville Campus, Ext. 140
A-B Tech at the Mall	Site Coordinator
	Mall Site, Ext. 7590
Admissions	Admissions Office
	Bailey Student Services Center, Asheville Campus, Ext. 7520
Counseling	Counselors
	Bailey Student Services Center, Asheville Campus, Exts. 146, 164, 209, 441, 141
	Advisors
	Bailey Student Services Center, Asheville Campus, Exts. 7586, 142, 164, 7587
Disability Services	Coordinator of Disability Services
	Bailey Student Services Center, Asheville Campus, Exts. 141, 7581, or 7587
Financial Aid	Financial Aid Office
	Bailey Student Services Center, Asheville Campus, Ext. 7520
Graduation Application	Associate Registrar
	Bailey Student Services Center, Asheville Campus, Ext. 291
International Student Services	International Student Advisor
	Bailey Student Services Center, Asheville Campus, Ext. 441
Student Academic Records	Records and Registration
	Bailey Student Services Center, Asheville Campus, Ext. 7520
Student Activities	Director of Student Activities
	Coman Student Activity Center, Asheville Campus, Ext. 203
Student Services Center	Coordinator
	Bailey Student Services Center, Asheville Campus, Ext. 7520
Transcript Request	Records and Registration
	Bailey Student Services Center, Asheville Campus, Ext. 204
Transfer Credits	Director of Admissions
	Bailey Student Services Center, Asheville Campus, Ext. 202
Transfer-to-Senior-Institution Information	Transfer Advising Center
	Elm Building, Asheville Campus, Ext. 7580, 7632, or 183
Veterans	Veteran's Service Office
	Bailey Student Services Center, Asheville Campus, Ext. 206
Visiting the Campus	College Recruiter
	Coman Student Activity Center, Asheville Campus, Ext. 7585
Learning Resources	Dean
	Holly Building, Asheville Campus, Ext. 310
Academic Learning Center	Coordinator
	Ferguson Building, Asheville Campus, Ext. 228
Developmental Studies	Chair
	Ferguson Building, Asheville Campus, Ext. 7633
Academic Related Instruction	Coordinator
	Ferguson Building, Asheville Campus, Ext. 191
Educational Technology Services	Coordinator
	Holly Building, Asheville Campus, Ext. 304
Library	Director
	Holly Building, Asheville Campus, Ext. 307
Service Learning	Coordinator
	Holly Building, Asheville Campus, Ext. 7573

College Services and Information

ADA Coordinator	Director of Human Resources Sunnicrest Building, Asheville Campus, Ext. 113
Books	Bookstore Bailey Student Services Center, Asheville Campus, Exts. 274, 208
Emergencies	Ext. 125 or 9-911
Foundation	Executive Director Fernihurst Building, Asheville Campus, Ext. 176
Grants	Grants Writer/Coordinator Fernihurst Building, Asheville Campus, Ext. 7561
Human Resources	Director of Human Resources Sunnicrest Building, Asheville Campus, Ext. 113
Intramurals	Coman Student Activity Center, Ext. 843
Job Placement	JobLink Center Maple Building, Asheville Campus, 250-4761
Mountain Tech Lodge	Manager Magnolia Building, Asheville Campus, Ext. 248
News, Publications	Director of Communications Simpson Administration Building, Asheville Campus, Ext. 117
Organizational and Professional Development	Director Sunnicrest Building, Asheville Campus, Ext. 178
Parking Permits	Accounting Clerk/Cashier Bailey Student Services Center, Asheville Campus, Ext. 7520
Payments, Student Accounts	Business Office Bailey Student Services Center, Asheville Campus, Exts. 152, 156, 155
Resource Development	Resource Development Fernihurst Building, Asheville Campus, Ext. 179
Scholarships	Resource Development Coordinator Fernihurst Building, Asheville Campus, Ext. 7562

Curriculum Programs

Grade Changes	Class Instructor
Tutoring	Class Instructor

College Calendar 2010-2011

All dates in this calendar are subject to change.

Fall Semester – 2010

Registration: Current and Continuing Students	June 28 – July 9
Registration: New Classified Students	July 12 – 14
Open Registration	July 15 – August 6
Last Day to Pay Tuition and Fees	August 6*
*Please note: Unpaid registrations will be deleted from the computer registration system at 12:00 noon.	
Late Registration	August 9 – 17
Last Day to Pay Tuition and Fees for Late Registration	August 17
New Student Welcome	August 17, 9:00 a.m. and 6:00 p.m.
Classes Begin	August 18
Schedule Adjustments	August 18 – 20
Minimester I	August 18 – October 18
Last Day to Drop for a Partial Refund (Full term)	August 27
Late Start Semester First Class Day	August 27
Labor Day College Holiday	September 6
Professional Development Day	October 13
Student Fall Break	October 14 – 16
Minimester II	October 19 – December 17
Last Day to Withdraw from a full 16-Week Class	November 15
Thanksgiving Student Holiday	November 24 – 27
Thanksgiving College Holiday	November 25 – 26
Last Day of Class/Examinations	December 17
Grades Due	December 20
Winter College Holidays	December 23 - 31

Spring Semester – 2011

Registration: Current and Continuing Students	November 1 – 5
Open Registration	November 8 – December 17
Last Day to Pay Tuition and Fees	December 17*
*Please note: Unpaid registrations will be deleted from the computer registration system at 12:00 noon.	
Late Registration	December 20 – January 7
Last Day to Pay Tuition and Fees for Late Registraton	January 7
New Student Welcome	January 7, 9:00 a.m.
Classes Begin	January 10
Schedule Adjustments	January 10 – 12
Minimester I	January 10 – March 7
Martin Luther King Jr. Day College Holiday	January 17
Last Day to Drop for a Partial Refund (Full term)	January 20
Late Start Semester First Class Day	January 24
Minimester II	March 8 – May 10
Last Day to Withdraw from a full 16-Week Class	April 5
Student Spring Break	April 11 – April 16
Summer/Fall Registration: Current & Continuing Students	April 18 – 29
Spring College Holiday	April 22
Summer Open Registration	May 2 – May 20
Fall Open Registration	May 23 – August 17
Last Day of Class/Examinations	May 10
Grades Due	May 12
Spring Graduation	May 13

Summer Session – 2011

Registration: Current and Continuing Students	April 18 – 29
Open Registration	May 2 – May 6
Last Day to Pay Tuition and Fees	May 6*
Late Registration	May 9 – 20
Last Day to Pay Tuition and Fees for Late Registration	May 20*
*Please note: Unpaid registrations will be deleted from the computer registration system at 12:00 noon.	
New Student Welcome	May 20, 9:00 a.m
Classes Begin	May 23
Memorial Day College Holiday	May 30
Schedule Adjustments	May 23 – 24
Last Day to Drop for a Partial Refund	May 27
Independence Day College Holiday	July 4
Last Day to Withdraw	July 15
Last Day of Class/Examinations	August 2

2010

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
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3	4	5	6	7	8	9	7	8	9	10	11	12	13	7	8	9	10	11	12	13	4	5	6	7	8	9	10
10	11	12	13	14	15	16	14	15	16	17	18	19	20	14	15	16	17	18	19	20	11	12	13	14	15	16	17
17	18	19	20	21	22	23	21	22	23	24	25	26	27	21	22	23	24	25	26	27	18	19	20	21	22	23	24
24	25	26	27	28	29	30	28							28	29	30	31				25	26	27	28	29	30	
31																											
May							June							July							August						
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9	10	11	12	13	14	15	13	14	15	16	17	18	19	11	12	13	14	15	16	17	15	16	17	18	19	20	21
16	17	18	19	20	21	22	20	21	22	23	24	25	26	18	19	20	21	22	23	24	22	23	24	25	26	27	28
23	24	25	26	27	28	29	27	28	29	30				25	26	27	28	29	30	31	29	30	31				
30	31																										
September							October							November							December						
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5	6	7	8	9	10	11	3	4	5	6	7	8	9	7	8	9	10	11	12	13	5	6	7	8	9	10	11
12	13	14	15	16	17	18	10	11	12	13	14	15	16	14	15	16	17	18	19	20	12	13	14	15	16	17	18
19	20	21	22	23	24	25	17	18	19	20	21	22	23	21	22	23	24	25	26	27	19	20	21	22	23	24	25
26	27	28	29	30			24	25	26	27	28	29	30	28	29	30					26	27	28	29	30	31	
							31																				

2011

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
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30	31																										
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September							October							November							December						
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							30	31																			

Summary of Performance Measures 2010 Report

Performance Measure	Standard Met	A-B Tech Results
1. Progress of Basic Skills Students <i>Standard: 75% making progress</i>	YES	80% making progress
2. Passing Rates for Licensure and Certification Exams for First-Time Test Takers <i>Standard: 80% aggregate passing rate</i>	YES	93% aggregate passing rate
3. Performance of College Transfer Students*		
4. Passing Rates of Students in Developmental Courses <i>Standard: 75% passing rate with a grade of "C" or better.</i>	YES	91% passing rate
5. Success of Developmental Students in Subsequent College Courses <i>Standard: 80% of students who took developmental courses will pass the "gatekeeper" English and/or mathematics course for which the developmental course serves as a prerequisite</i>	YES	80% Pass Rate
6. Satisfaction of Completers and Non-Completers <i>Standard: 90% satisfied with the quality of college programs and services</i>	YES	96% satisfaction rate
7. Curriculum Student Retention and Graduation <i>Standard: 65% of fall degree seeking students will either re-enroll, transfer or graduate by the subsequent fall</i>	YES	72% retention, graduation or transfer rate
8. Business/Industry Satisfaction with Services Provided <i>Standard: 90% of respondents will rate services provided as "very good" or "excellent"</i>	YES	93% satisfaction rate

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

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

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

"Exceptional" College Status

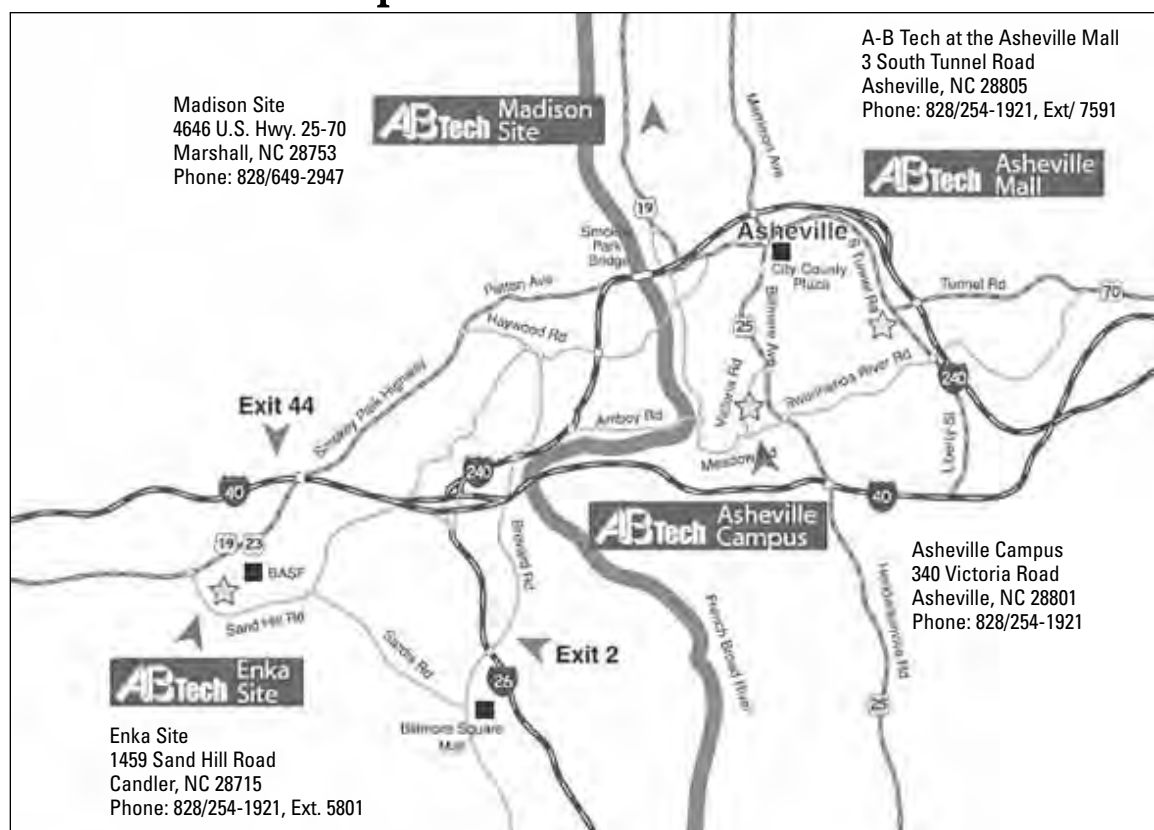
Must meet all of the above performance measures in addition to:

2a. Passing Rates for Licensure and Certification Exams <i>Standard: 70% minimum passing rate for all exams</i>	YES	All required exams achieved a 70% minimum passing rate
3a. Performance of College Transfer Students*		

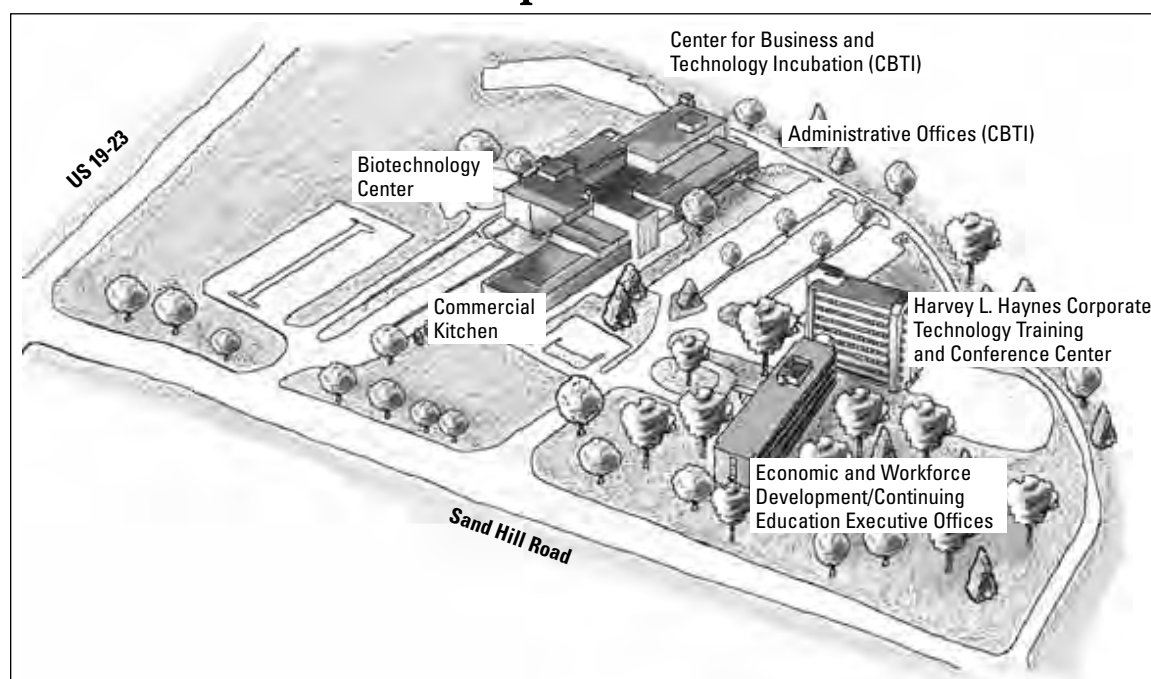
*Performance measure results have not yet been released.

Source: 2010 Critical Success Factors Report

Site Locator Map



Enka Site Facilities Map



Asheville Campus



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

Asheville Campus Facilities

Thomas W. Simpson

Administration Building

Office of Finance and IST
Office of Risk Management and Operations
Communications Office
Elevated Lecture Room
Information Systems Technology
Instructional Services
Office of the President
Research and Planning Office

Balsam Computer Technology Center

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

Birch Building

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

Chestnut Building

Plant Operations
Receiving
Police Department

Coman Student Activity Center

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

Dogwood Building

Air Conditioning, Heating, and Refrigeration Technology
Automotive Systems Technology
Carpentry

Construction Management Technology
Electrical/Electronics Technology
Heavy Equipment and Transport Technology
Industrial Systems Technology
Machining Technology
Mechanical Engineering Technology
Sustainability Technology
Welding Technology

Elm Building

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

Ferguson Building

Academic Learning Center
Academic Related Instruction
Developmental Studies
Ferguson Auditorium

Fernihurst

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

Fernihurst Annex A

Drama and Performing Arts

Fernihurst Annex B

Arts and Sciences Instructor Offices

Hemlock Building

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

Holly Building

Computer Lab
Faculty Resource Center

Instructional Support and Online Learning
Educational Technology Services
Library
Service-Learning Center

Ivy Building

Decorative Restoration

K. Ray Bailey Student Success and Advocacy Center

Admissions Office
Business Office
Bookstore
Career Center
Counseling Center
Disability Services
Financial Aid Office
International Student Services
Placement Testing
Records and Registration (Registrar)
Veterans Representative

Magnolia

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

Maple Building

JobLink Career Center
Mountain Area Workforce Development Board
Administrative Staff Office

Maple Annex

Lab - Carpentry, Electrical, HVAC, Plumbing, etc.

The Pines

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

Poplar Building

Child Care Center

Rhododendron Building

Associate Degree Nursing
Computed Tomography & Magnetic Resonance Imaging (CT/MRI) Technology
Dental Assisting
Dental Hygiene
Medical Assisting
Medical Laboratory Technology

Medical Sonography
Phlebotomy
Practical Nursing
Radiography
Surgical Technology
Veterinary Medical Technology

Smith-McDowell House Museum

(Leased to WNC Historical Association)
Museum of WNC History

Sunnicrest

ADA Coordinator
Career Pathways Partnership
Human Resources
Organizational and Professional Development/SACS Office

Sycamore Building

Biology
Chemistry/Physics/Astronomy/Geology
Video Conference Center

Enka Site Facilities

Harvey L. Haynes Corporate Technology Training and Conference Center

Office of Economic & Workforce Development/Continuing Education
Executive Offices
Division Business Office and Registration
Occupational and Public Service Training
ACT Test Site
Computer Labs
Training/Meeting Facilities
Workforce Development
Customized Training Programs
Quality Initiatives
Security Office

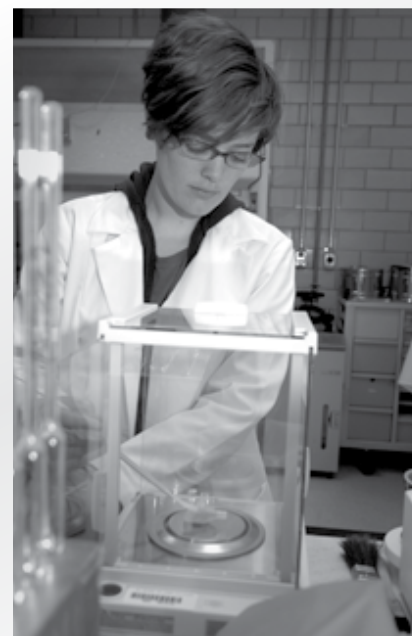
Center for Business and Technology Incubation

BioNetwork/BioBusiness Center
Biotechnology
BioWork Classroom/Lab
Business Incubator
Commercial Kitchen
Small Business Center
Student Business Incubator
Technology Commercialization Center

Madison Site Facilities

Liston B. Ramsey Building

Administrative Offices
Auditorium
Classrooms
Computer Lab
Conference Room
Shop



Organization

History

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

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

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

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

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

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

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

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

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

Administration

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

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

Curricula

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

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

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

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

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

Campus Facilities

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

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

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

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

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

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

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

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

Asheville-Buncombe Technical Community College Foundation

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

Current Status

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

Location

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

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

College Mission and Vision

College Mission Statement

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

College Vision Statement

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

Nondiscrimination Policy

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

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

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

Individuals with Disabilities

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

Communicable Disease Policy

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

Internet and Campus Network Acceptable Use Policy

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

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

1. The internet and associated resources contain a wide variety of material and information. Information available on the internet is not generated or selected by Asheville-Buncombe Technical Community College. The College is not responsible for the accuracy or quality of the information obtained through or stored on the campus network.

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

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

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

Guidelines for Digital Communications

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

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

Economic & Workforce Development/ Continuing Education

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

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

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

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

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

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

Costs

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

Course Repetition

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

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

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

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

Services

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

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

Basic Skills

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

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

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

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

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

To be eligible for testing, an applicant must:

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

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

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

Community Service Programs

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

Entrepreneurial Ventures and Business Incubation

The Incubator is a model which allows entrepreneurs a “jump start” for their business. This program is a dynamic process that provides: physical space for one’s business, consulting and technical assistance, access to business services and equipment, technology support and guidance in obtaining financing. In addition, there is a student business incubator, which is a 12-month extracurricular activity designed to provide a nurturing environment for A-B Tech students interested in entrepreneurship.

The Business Incubator houses the BioNetwork BioBusiness Center, a Natural Products laboratory, the Blue Ridge Food Venture, the Technology Commercialization Center, and the Global Institute for Sustainability Technologies. These centers provide workforce development and entrepreneurial training. The Incubator also has partners in six countries who provide research for local companies seeking to export their products.

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

Occupational and Public Service Training Programs

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

Students in the **Decorative Painting Techniques and Restoration Program** train in all aspects of surface treatments and decoration. The content of the program deals with traditional finishes in historic buildings as well as new work and the development of individual styles and techniques. Students learn the physical and chemical nature of building materials, methods of stenciling, gilding, ornamental plaster work, marbling, woodgraining, wall glazing, paperhanging and the preparation of old and new surfaces to re-

ceive decorative treatments. Related job opportunities include residential and commercial decorating, church restoration, picture frame and architectural gilding. This 44-week program starts in January and ends in December. The foundation level covers tools and equipment, materials, drawings and geometric shapes, calculations, and surface preparation. The advanced level covers specifications, decorative treatments, and color.

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

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

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

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

Technical and Industrial Training Programs provide education and training for individuals to prepare for new or different employment in industrial or technically challenging fields and to upgrade the skills of individuals in their current employment. These opportunities are available through single courses or a series of courses specifically designed for a business, industrial, or technical occupation. Many of these courses are offered as apprenticeships or to meet certification requirements for employment in careers such as electrical journeymen, building, electrical, mechanical or plumbing inspection and code updates. Additional course offerings include: blacksmithing, cabinetmaking, carpentry, substitute teacher training and welding. Classroom and hands-on training in the sustainability arena are also a significant focus.

Workforce Development

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

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

PURPOSE

The purpose of the Customized Training Program is to provide customized training assistance in support of full-time production and direct customer service positions created in the State of North Carolina, thereby enhancing the growth potential of companies located in the state while simultaneously preparing North Carolina's workforce with the skills essential to successful employment in emerging industries.

ELIGIBILITY

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

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

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

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

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

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

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

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

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

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

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

- Blueprint Reading
- Braising, Soldering, and Welding
- Forklift Operation and Safety

- CPR/ First Aid/Blood Borne Pathogen Certification and/or Recertification
- Customer Service
- Leadership Development
- Machine Operations
- OSHA 10 Hr and 30 Hr General Industry Standards
- OSHA 10 Hr and 30 Hr Construction Standards

General Admission Procedures

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

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

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

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

1. Submit an application form.
2. Obtain transcripts of credits from all secondary schools attended. Records should show that the student is a high school graduate or has a state approved equivalent education. Transcripts from previously attended colleges must also be obtained **if transfer credit is desired.**
3. Persons applying for admission into all degree and diploma programs are required to take the Accuplacer Test or submit acceptable SAT/ACT scores earned within the preceding three years. Requests for reasonable accommodations or test exemption by transfer credit will be reviewed individually.

Alternate testing formats will be made available to individuals with disabilities upon request to the Disability Services Counselor.

4. Admission to selected allied health programs is competitive. Please visit or contact the Bailey Student Services Center for the application process and criteria.

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

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

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

Competitive Allied Health Programs

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

Placement Testing

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

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

Test Preparation and Re-Testing Procedure

It is incumbent upon students to fully prepare before taking Accuplacer, the college's placement assessment tool. Accuplacer is a product of The College Board which also produces the SAT. Accuplacer tests have very high reliability and validity. To assist students in preparing, a study guide is available at http://www.abtech.edu/Student_Services/pdfs/Accuplacer.pdf. Students will find the sample questions helpful in understanding test formats. For content preparation, students are encouraged to use recommended sites found on page two of this document.

Students may only take the placement test once in a three year period with the following exceptions:

- Applicants for competitive allied health curricula may take the test once each year during the competition period.
- Students who tested at local high schools may test when applying for admission to the college.
- Student requests to re-take the test that are approved to do so by the Chair of Developmental Studies, Director of Counselor, or Vice-President for Student Services. This option should only be used under exceptional circumstances. If approved, a form will be completed and given to the student for presentation to the assessment specialist at the time of re-testing.

Placement testing is a valuable tool in ensuring that students are enrolled in courses that support student success. Lack of preparation for the assessment may result in additional cost and time for classes.

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

Adult Basic Education Within Basic Skills Department Student Status

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

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

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

Transfer Credit from Other Institutions.

Asheville-Buncombe Technical Community College will accept credit for parallel work completed in other post-secondary institutions accredited by a regional accrediting agency. Applicants who seek transfer credit should make regular application to the College. No transfer credit will be granted for work below a "C." Transfer credit for developmental courses will only be granted if the course is a semester course taken at another college in the North Carolina Community College System. Transfer credit will be awarded

*Accuplacer is a product of The College Board which also produces the SAT. Accuplacer tests have very high reliability and validity.

for course work without assigning grades or quality points. Computer information/technology and related courses must be five years or more recent upon point of transfer. Proficiency credits from other institutions will not be accepted. No more than one-half of the credit hours required in a program may be earned by transfer credit. If any course is taken for credit after transfer credit has been awarded, and a grade of A, B, C, D, or F is earned, it will replace the transfer credit. A student who must repeat a course may take it at another institution and transfer it to A-B Tech according to the guidelines above. Credit may be awarded for appropriate military courses. If a student submits a transcript from a foreign university, it will be the student's responsibility to provide accurate notarized translations of (a) the transcript, (b) course descriptions, and (c) the grading system. Credits will be evaluated in the context of the current catalog.

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

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

Credit by Examination (Proficiency Testing)

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

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

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

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

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

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

Articulated, Advanced Placement, and Continuing Education Credit

High School Articulation and RAVE. College credit may be awarded for high school courses if conditions of the North Carolina High School to Community College Articulation Agreement or Regional Articulation in Vocational Education (RAVE) are met. Students must see the Director of Admissions in the Bailey Student Services Building.

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

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

International Applicants

A-B Tech has been approved to issue I-20 forms for qualified international applicants seeking diplomas or associate degrees in F-1 or M-1 status. A-B Tech has not been approved to issue I-20 forms for continuing education programs, English as a Second Language classes, or curriculum certificate programs.

International applicants must show proficiency in the English language and graduate from a secondary school that is equivalent to secondary schools in the United States. Both academic records and documentation of financial support are important factors in the admissions decision for all applicants from outside the United States and those holding non-immigrant visas in the U.S.

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

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

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

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

Tuition and Expenses

North Carolina Residency

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

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

Tuition*

Fall, Spring, and Summer Semester:

N.C. residents per semester	\$928.00
Nonresident of N.C.	\$4,000.00
(16 or more credit hours)	
Part-time N.C. residents per credit hour per semester.....	\$58.00
Nonresident of N.C. per credit hour per semester	\$250.00 (proposed)
(fewer than 16 credit hours)	
Return Check Charge**	\$25.00

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

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

*** Return Check Charge 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 on-campus day credit hours will be charged a student activity fee of \$19.00 for the fall and spring semesters and \$10.00 for the summer semester. The student who enrolls for eight or fewer on-campus day credit hours will be charged a student activity fee of \$14.00 for the fall and spring semesters and \$6.00 for the summer semester.

Computer Use and Technology Fee

The State Board of Community Colleges has established a computer use and technology fee to support the procurement, operations and repair of computer and other instructional technology, including the supplies and materials that support the technology. This fee is set annually by the Board of Trustees and will be up to \$16 per semester for Curriculum students and \$5 per course for occupational continuing education classes.

Returned check charge: \$25.00

Student Insurance

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

A group policy, providing the desired insurance protection, will be maintained in effect by the College

and all curriculum students will be REQUIRED to subscribe to such coverage. The only exception would be students taking only off-campus courses. The cost of accident insurance to the student will be approximately \$2.00 per semester.

Additional Costs

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

Allied Health and Public Service Education

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

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

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

Business and Hospitality Education

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

Engineering and Applied Technology

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

The cost of books and supplies varies from year-to-year by curriculum due to price changes, curriculum changes, and instructor preferences. For purposes of definition, the following items may be classified as supplies: pen, pencils, paper, notebooks, instruments, student kits, uniforms and shoes, rental of uniforms, safety equipment, hand tools, calculators, lab coats, membership dues, and pins. Students will incur most

of the supply costs for their curriculum during the first semester of study. Students are encouraged to consult with their department chairperson for actual costs of supplies for their curriculum. Students should consult with their department chairperson or a member of the Math Department prior to the purchase of a calculator for use in class.

Tuition and Fees Refund Policy

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

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

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

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

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

Tuition Refund Procedure

To be eligible for a tuition refund the student must:

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

Student Rights, Responsibilities, and Due Process

Code of Student Conduct

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

Students who have been charged with a violation of these rules may be assigned consequences based upon the seriousness of the offense. A hearing will be conducted by the Vice President for Student Services. In some situations, a Threat Assessment Team may review and make recommendations to the Vice President for Student Services prior to a hearing. If a student engages in criminal activity or demonstrates threatening behavior that constitutes a clear and present danger to the physical and/or emotional well being of the student and/or other students, faculty and staff, the Vice President for Student Services shall immediately suspend the student and remove him/her from campus for no more than ten school days pending a hearing. In this situation, the Vice President for Student Services must convene a Team. See Threat Assessment Policy.

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

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

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

1. **Academic Dishonesty** - You may not deceive any official of the College by cheating on any assignment, examination, or paper. This includes plagiarism, which is the intentional theft or unacknowledged use of another's words or ideas. Plagiarism includes (but is not limited to) paraphrasing or summarizing

another's words or works without proper acknowledgement, using direct quotes of material without proper acknowledgement, or purchasing or using a paper or presentation written or produced by another. The faculty at A-B Tech may also consider presenting as original work a paper written for one class to satisfy a requirement in another class to be academic dishonesty.

2. **Alcoholic Beverages** - You may not possess or use alcoholic beverages on campus. You may not be under the influence of alcoholic beverages on campus.
3. **Animals** - You may not have an animal of any kind on campus. This includes animals left within a vehicle. Working dogs, such as police dogs and Seeing Eye dogs, are permitted.
4. **Assault and/or Battery** - You may not strike or threaten to strike another person for any reason whatsoever. Threatening to strike another person is defined as assault, and striking another person is defined as battery.
5. **Bullying** - You may not intimidate or threaten with harm any other individual. Bullying is defined as "any pattern of gestures or written, electronic or verbal communications, or any physical act or any threatening communication that takes place on College premises or at any College sponsored function that: (i) places a person in actual and reasonable fear of harm to his/her person or damage to his/her property; or (ii) creates or is certain to create a hostile environment by substantially interfering with or impairing a student's educational performance, opportunities or benefits, or a College employee's ability to perform the essential functions of his/her job."
6. **Code of Classroom Conduct** - You may not violate any of the rules pertaining to the Code of Classroom Conduct. It shall be the responsibility of the President or his/her designee to create and amend these rules and list them each year in the A-B Tech Catalog.
7. **Damage to Property** - You may not damage property of the College or of any other person working at or attending the College.
8. **Disobedience** - You may not disobey the reasonable directions of College employees, including administrators, faculty members, security officers, and other staff employees.
9. **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.
10. **Disrespect** - You are expected to treat all college employees with respect and courtesy, particularly when and if disagreements arise.

11. **Disruption** - You may not disrupt the normal activities of the College by physically or verbally interfering with instruction, meetings, traffic, or scheduled administrative functions.

12. **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.

13. **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.

14. **Gambling** - You may not gamble on campus.

15. **Possession of Weapons** - You may not have a weapon of any kind, including a knife, stun gun, or any firearm in your possession on campus. Law Enforcement officers are exempt from this prohibition. This includes facsimiles of weapons.

16. **Professional Conduct** - Various curricula have specific codes of professional conduct for which you may be held accountable, if you are enrolled in those curricula.

17. **Public Laws** - Violations of any federal, state or local laws occurring while on campus may lead to legal actions as well as campus discipline. Violations of federal, state or local laws occurring off campus may result in disciplinary action if the student's continued presence on campus constitutes a threat to the safety and order of the campus.

18. **Sexual and Other Unlawful Harassment** - You may not harass any member of the College community, including other students, employees, or other persons on the College campus. This prohibition includes sexual, verbal or physical harassment for any reason including race, color, religion, sex, national origin, disability, veteran's status, creed, sexual orientation, or political affiliation.

19. **Skate Boards and Roller Skates** - Skate boards and roller skates are not permitted to be used on campus.

20. **Stalking** - You may not follow another individual in a threatening manner. Stalking is defined as the severe intrusions on a victim's personal privacy and autonomy. It includes, but is not limited to, a pattern of: observing or monitoring the victim or committing violent or intimidating acts, regardless of the means, against the victim.

21. **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.

22. **Threats** - You may not engage in any behavior that constitutes a clear and present danger to the physical and/or emotional well being of yourself and/or other students, faculty and staff.
23. **Tobacco** - You may not use tobacco of any form on campus.
24. **Use of the Internet** - The College has an extensive policy for appropriate use of the Internet. Users of the College computers acknowledge the policy whenever they sign on. You may not use the College's access to the Internet for access to sexually explicit material or for downloading music. E-mail accounts are provided for student use; however, no right of privacy exists for use of e-mail.
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.

Code of Classroom Conduct

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

1. **Absences**. Inform the instructor in advance if you know you are going to miss class. Also, take responsibility for getting missed assignments from other students. Do not expect that you will be allowed to make up work, such as unannounced quizzes or tests, after an absence. Instructors are not responsible for re-teaching the material you missed because of absence.
2. **Attendance**. You are expected to be in class the entire class time. Do not enter late or leave early. Rare exceptions may be excused, particularly under emergency circumstances, but you should be prepared to explain your tardiness to the instructor after class. Likewise, the need to leave early should be explained to the instructor before class.
3. **Attitude**. You are expected to maintain a civil attitude in class. You may not use inappropriate or offensive commentary or body language to show your attitude regarding the course, the instructor, assignments, or fellow students.
4. **Cell phones and beepers**. You may not receive or send telephone calls, text messages, or pages during class. You are responsible for turning off cell phones, beepers, and other personal communications devices upon entering class.
5. **Conversation**. Do not carry on side conversations in class.
6. **Food, Drink, and Tobacco**. You may not have food or drink in class. You may not use tobacco of any form on campus.

11. **Profanity and Offensive Language**. You may not use profanity or offensive language in class.
12. **Sleep**. Do not sleep in class.
13. **Personal Protective Equipment**. You must properly wear personal protective equipment at all times in any area of the College in which it is required.
14. **Perfumes**. You should avoid wearing strong perfumes of any kind as other students may be allergic to them.

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

Student Rights of Due Process

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

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

9. You have the right to appeal any action taken by the Vice President for Student Services to the President. Any appeal must be in writing and be submitted within five days. The decision of the President is final.

Student and Grade Appeals Policy

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

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

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

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

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

If the matter remains unresolved through the level of the appropriate Vice President, then you should return to the Vice President for Student Services who will then turn the matter over to the Student Appeals Committee. This Committee, which is composed of two students, two faculty members, a Student Services employee, and a non-teaching professional who will serve as chairperson, is called together by the Vice President for Student Services. The chairperson will conduct the meeting and render a decision which reflects the popular opinion of the Committee. If further appeal is necessary, then the matter is referred to the

President whose decision is final. When this policy is used to appeal a disciplinary action taken by the Vice President of Student Services in his or her capacity as the College discipline officer, the appeal will go directly to the President whose decision is final.

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

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

Privacy of Student Records

1. Definitions:

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

Records created and maintained by a law enforcement unit exclusively for a non-law enforcement purpose, such as a student disciplinary action or proceeding conducted by the education agency or institution, are not law enforcement unit re-

cords, even if created and maintained by law enforcement unit personnel.

- g. "Legitimate educational interest" means the need for an individual to know the content of a student's education record for purposes of educational related matters (included but not limited to academic and disciplinary issues). For purposes of this section, the personnel of the A-B Tech Campus Police are designated as school officials with a legitimate educational interest in student's education records.
2. In compliance with the Family Educational Rights and Privacy Act of 1974 ("FERPA"), commonly known as the Buckley Amendment, Asheville-Buncombe Technical Community College ("A-B Tech") will not disclose education records concerning its students except for directory information and as otherwise stipulated herein.

Directory information will be released to anyone who requests it, unless the student specifies in writing to the Student Records and Registration office that his or her directory information be withheld. In such case, no directory information will be released.
3. A parent of an eligible student does not have access to the student's education records. In order for parents to have access to an eligible student's education records, beyond directory information and without written permission from the student, a parent must certify that the student is economically dependent as defined in Section 152 of the Internal Revenue Code of 1954. If a parent can prove dependency to the Student Records and Registration office by showing a copy of the parent's current tax report form or another acceptable report of current dependency, then the parent may have total access to the student's education records.
4. A-B Tech will release a student's educational records without his or her approval only under the following circumstances:
 - to Asheville-Buncombe Technical Community College officials who have legitimate educational interest in the records.
 - to officials of another college or university in which a student seeks to enroll.
 - to certain federal and state educational authorities for purposes of enforcing legal requirements in federally supported educational programs.
 - to persons involved in granting financial aid for which the student has applied.
 - to testing and research organizations conducting certain studies for or on behalf of the school.
 - to accrediting organizations.
 - in compliance with a court order or lawfully issued subpoena.
 - in very narrowly defined emergencies affecting the health and safety of the student or other persons.
 - to state and local authorities, within a juvenile justice system, pursuant to specific state law.
 - to parents of eligible students under the provision of paragraph 2 above.
5. Law enforcement unit records are not education records and may be disclosed by the AB Tech Campus Policy Force to College Officials, other law enforcement personnel and court officials without parental consent. Parents do not have an automatic right to inspect law enforcement unit records. Public inspection of law enforcement unit records is subject to the Chapter 132 of the North Carolina General Statutes (the North Carolina Public Records Act). All public records requests for law enforcement unit records must be reviewed by the College Attorney for legal compliance.
6. Questions regarding student records should be directed to the College's Student Records and Registration office.

Academic Procedures

Classification of Students

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

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

Declaring, Changing, or Adding Second Majors

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

Class Attendance

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

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

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

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

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

It is the joint responsibility of the student and instructor to discuss attendance patterns that will endanger the success of the student in the course. If it appears

that a student will not be able to complete a course successfully, the instructor may advise the student to withdraw no later than the official withdrawal date at the 75% point of the class.

It is mandatory that the student attend at least once during the first 10% of the course. Failure to attend during the first 10% of the course will cause the grade of "No Show" to be awarded. The student will not be allowed to continue with the course or to receive a refund.

Prerequisites and Corequisites

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

Course Substitutions

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

Success and Study Skills

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

Schedule Adjustments

Dropping 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 in person by the deadline.

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

- By submitting in person to any Registration Center (Bailey Student Services Center, Transfer Advising Center, Records & Registration, Madison Campus Office) a Drop/Add Registration Change Notice during business hours.
- By having your advisor or Academic Advisor process the drop. You are responsible for ensuring this has been done.

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

Withdrawing from a Class

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

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

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

Adding a Class

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

Balancing Class Size

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

College Withdrawal

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

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

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

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

Grading System

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

Students will be graded by the following system:

A	90-100	Excellent academic performance, consistent mastery of facts and concepts, and a thorough understanding of course content.
B	80-89	Good academic performance, high-level mastery of course content.
C	70-79	Average academic performance.
D	60-69	Marginal academic performance, poor mastery of course content.
F	Below 60	Very poor performance, no demonstration of even minimal mastery of course content.
I	Incomplete	Assigned when a student is unable to complete work or take a final examination because of illness or other reasons over which the student has no control. An incomplete grade must be completed within the first six weeks of the next semester. Otherwise, the grade becomes an "F."
U	Unofficial Withdrawal (penalty)	Assigned when the student does not follow the College's official withdrawal policy by the course withdrawal deadline or is dropped for excessive absences. This is the equivalent of an "F" grade and will influence the quality point ratio.
W	Official Withdrawal (no penalty)	Assigned when the student OFFICIALLY WITHDRAWS. This will not influence the quality point ratio. Developmental Studies faculty may officially withdraw a student from a course. Official withdrawals are not allowed after the 75% point of a semester or term, as identified in the official college calendar, except for exceptional and documented emergencies. In such circumstances, the student must withdraw from all courses. Approval for an emergency withdrawal must come from the Vice President for Student Services.
X	Continuing	Assigned when a student is unable to complete work during the current semester because of class scheduling over consecutive semesters or at the discretion of the instructor to allow additional time to complete work. A "contract" of conditions for completion and time limit, not to exceed 12 months, will be executed by the instructor and signed by both the instructor and student. If the terms to remove the grade of "X" are not fulfilled by the end of the contract period, the grade will revert to the average held at the beginning of the contract period including zeros for work not completed.

Transcript Codes

Other codes that may appear on the college transcript include:

AP Advanced Placement course credit.

AR North Carolina High School to Community College Articulation Agreement course credit.

CR CLEP (College Level Examination Program) course credit.

NS No Show. Student enrolled but never attended the class. This will not influence the quality point ratio.

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	D	1 quality points per credit hour
B	3 quality points per credit hour	F	no quality points
C	2 quality points per credit hour	U	no quality points

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

Final Examination Policy

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

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

Auditing Courses

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

Curriculum Course Repetition

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

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

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

Independent Study

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

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

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

Maximum Course Load

Because of the amount of effort that is expected to be put forth in college level courses, students are limited to a maximum of 20 hours of course work each semester. Exceptions to this rule can be granted by the academic dean in which the student's program is located or the Vice President for Student Services.

Cooperative Education

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

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

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

The College has established this policy to:

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

This policy applies to all students, classified and unclassified.

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

I. Academic Warning

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

III. Suspension

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

IV. Appeals

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

V. Reenrollment After Suspension

Students may reenroll after having been suspended for one semester.

Academic Fresh Start

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

Honors and Achievements

Dean's List

1. For the Dean's List, students must be enrolled in an academic program (degree, diploma or certificate), 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 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 and the Administrative Assistant of Instructional Services. The draft of candidates will be posted on major bulletin boards for students to review. The Vice President for Instructional Services will be responsible for final approval and publication.

President's List

1. For the President's List, students must be enrolled in an academic program (degree, diploma or certificate), carrying a minimum of twelve credit hours of curriculum courses numbered 100 or above.
2. Students must have a 4.0 quality point average to qualify for the President's List during the semester under consideration.
3. Students who earn grades F, I, U or X 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 and the Administrative Assistant for Instructional Services. The draft of candidates will be posted on major bulletin boards for students to review. The Vice President for Instructional Services will be responsible for final approval and publication.

Academic Programs, Core Competencies, and Graduation Requirements

Degree, Diploma, and Certificate Programs

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

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

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

Core Competencies

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

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

Requirements for Graduation

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

1. Declare an academic major and complete the requirements of a College-approved program of study according to the student's official catalog. The official catalog is determined by the academic advisor in consultation with the student and should be the

catalog that is in effect at the time that the student declares a major. The official catalog may not be a catalog prior to the student's first date of enrollment and must be a College catalog dated no more than five years prior to the date of graduation (i.e., a student graduating in 2011 cannot use a catalog earlier than 2006-2007). Students should be aware that prerequisites for courses change frequently and that they will be required to meet the prerequisites which are in place at the time a course is taken.

2. Each course in the program of study must be completed by one of the following methods:
 - a. Take the course at A-B Tech.
 - b. Receive transfer credit.

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

Transfer of Credit to Other Institutions

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

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

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

Students who attend most senior institutions do not declare a major until their junior year. Our applied science programs are such that those students who earn a baccalaureate degree pursue it in an inverted pattern. The majority of the student's academic major is earned at A-B Tech in the first two years of study.

As junior level students at the senior institution, they take general university requirements and may take more advanced courses relating to their major.

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

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

Student Support Services

Counseling Services and the Career Center

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

Career counseling and career exploration services are available to students who are undecided or confused about career plans. The Career Center, located in the Bailey Student Services Center, houses a variety of career resources, both print and computerized, to assist students in career-related areas. Career development materials are available electronically under Career Development Services under the Student tab on the college home page. Individual career testing and career counseling sessions are available by appointment. An appointment may be made online at <http://careerscheduling.abtech.edu/>.

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 may be advised by Academic Advisors in Student Services.

Unclassified students may elect to register without meeting with an Academic Advisor. They may register online via WebAdvisor or at the Express Lane in the Bailey Building. The following process outlines important steps for individuals choosing to self-advise:

1. Register at your appointed time, based on accumulated credit hours. Information will be sent to you via email and is listed on the online schedule.
2. Prerequisites and corequisites for courses must be met.
3. To declare a major or to have general questions answered, sign into the kiosk in the Bailey Building for assistance.
4. High School students must see an advisor to register.
5. New student registration is during general registration.

Academic Advisors initially determine the developmental courses for students based upon the results of

placement testing. Faculty advisors use this information when advising students. In all instances, a student's registration form must be signed by an appropriate advisor indicating that the schedule meets appropriate academic standards or have an online education plan developed, created by his/her academic advisor. Students who desire to register for more than 20 credit hours in a semester will need the approval of their department chair or the Vice President for Student Services.

Students in the college transfer program are assigned to the Transfer Advising Center (located in Elm 200) for academic advising. They will be seen by faculty members on duty from the Arts and Sciences 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. Extended hours are available during peak advising and registration periods. Any student in the college transfer program who wishes to have a specific advisor assigned to him or her may request this service at the Transfer Advising Center, and accommodations will be made for a permanent advisor assignment.

Services to Students with Disabilities

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

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

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

An appointment with the Disability Services staff 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 and Grade Appeals Policy.

Developmental Studies

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

Academic Learning Center

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

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

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

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

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

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

Student Services for Distance Learners

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

1. **Student Welcome (Orientation).** The Student Welcome is available on local cable television or by requesting a DVD, streaming video, or podcast from the Vice President for Student Services.
2. The **Student Handbook** is available on the College web page at www.abtech.edu.
3. **Application.** Application to the College may be made at the College web page.
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 **if transfer credit is desired** upon receipt.
5. **Application for Graduation.** Applications for graduation are available in the schedule of classes each semester and may be mailed to the Records and Registration Office for evaluation. They are also available on the College web page.
6. **Catalog.** The catalog is available on the College web page at: www.abtech.edu
7. **A-B Tech Transcripts.** Transcripts of A-B Tech work may be requested by fax or mail from the Student Success Center in the Bailey Building. Transcript request forms are also available on the College web page.
8. **Dropping Classes.** Distance classes may be dropped by calling or e-mailing the Distance Learning Advisor, or online via WebAdvisor, if permitted.
9. **Schedule of Classes.** Curriculum schedules are available each semester on the College web page. Economic and Workforce Development/Continuing Education class schedules are mailed to households in Buncombe and Madison County and available online.
10. **Financial Aid.** Applications for federal financial aid (FAFSA) are available online @ fafsa.gov. Financial Aid advice is available by e-mailing the director of financial aid: dturner@abtech.edu
11. **Academic Advising.** Academic advice is available as follows: students classified into programs may receive academic advice by e-mailing their assigned advisor at the College. Unclassified students who are not in any program may receive academic advice by contacting jgrunder@abtech.edu.
12. **Veteran's Services.** Veteran's services and advice are available by e-mailing the veteran's advisor: lszymanski@abtech.edu.

13. **Disabled Students.** Students with disabilities as defined by the Americans with Disabilities Act may seek services by e-mailing the advisor for students with disabilities: _____.

14. **Career Counseling Services.** Some career counseling services are available through e-mail or the postal service: pbulla@abtech.edu.

15. **Placement Testing.** Placement testing may be accomplished at any college in the North Carolina Community College System. Scores can then be faxed by the originating college. Also, SAT or ACT scores may be used instead of testing. For information, e-mail the testing coordinator: kedwards@abtech.edu.

16. **Payment of Tuition and Fees.** Tuition and fees may be paid online using Web Advisor.

17. **Purchase of Books.** Books may be purchased online from the College Bookstore.

Financial Aid

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

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

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

In order to be considered for financial aid, a student must complete a Free Application for Federal Student Aid (FAFSA) online at www.fafsa.gov. Alternative accessible application formats will be made available to individuals with disabilities upon request to the ADA Coordinator or the financial aid office.

Application Procedure

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

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

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

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

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

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

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

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

Year Round Pell Grant Policy. The Higher Education Opportunity Act (HEOA) enacted on August 14, 2008 authorizes schools to disburse up to two Pell Grants in a single award year, beginning with the 2009-2010 award year for Pell eligible students. The objective of this policy is to help needy students accelerate their academic progress. Beginning with summer term 2010, the financial aid office will pay Pell Grants to eligible students

for summer term classes. In the past, students may or may not have had Pell Grant eligibility during summer term. Now according to new regulations passed by the Federal government, students will be eligible to receive additional Pell Grant funds during summer semester. For further information, students should contact the financial aid office at 254-1921 x 7588.

Satisfactory Academic Progress Standards for Financial Aid

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

Satisfactory Progress Defined. A cumulative review of a student's academic transcript history will be performed to determine if the student is in compliance with the satisfactory academic progress policy for students applying for and receiving financial aid. A student is considered to be making satisfactory academic progress when three requirements are satisfied:

1. Maintain a minimum cumulative grade point average based on credit hours attempted. (The qualitative standard required by regulation of 2.0).
2. Complete a minimum number of credit hours of the total credit hours attempted with grades of A, B, or C. (The first quantitative standard required by regulation).
3. Successfully complete the program of study within its maximum time frame. Federal 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 the variable enrollment status of students (e.g. full-time, half-time, less than half-time).

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

*Credit hours attempted will be cumulative and will include all hours for which the student was enrolled as of the census date of each academic term or for which the student received a grade. The census date is de-

fined as the last day to Drop for a Partial Refund (Full Term) as outlined in the College Catalog.

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

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

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

Examples:

1. Practical Nursing curriculum requires 47 credit hours to complete the diploma. The time frame is calculated ($47 \times 150\% = 70.5$).
2. Associate Degree Nursing requires 71 credit hours to complete the degree. The time frame is calculated ($71 \times 150\% = 106.5$).
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 ($65 \times 150\% = 97.5$).
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 his or her academic advisor and/or the Student Services counseling staff. It is the responsibility of the student to register only for classes listed in his or her chosen major in the College Catalog and for scheduling only the number of hours he or she is capable of completing. **SOME STUDENTS WILL BE REQUIRED TO TAKE PROVISIONAL COURSES WHICH WILL ALSO BE COUNTED AS HOURS ATTEMPTED.** Students are responsible for knowing the policy concerning the limitation on hours attempted for financial aid purposes. Registering for more courses than a student is capable of completing, having to withdraw from classes, registering for courses for which the student has

already received credit, taking courses in error, etc., all impact the time frame and could result in losing financial aid eligibility before completing a program of study.

2. The time frame is cumulative; therefore, by switching programs without completing the initial program, the student runs the risk of losing financial aid eligibility.
3. The time frame begins when the student first attends the College and continues until that student successfully completes a program of study regardless of the number of years that may elapse between enrollment periods.
4. Only students who successfully complete a program of study will be given a new time frame should they decide to enter a subsequent program of study. The credit hours attempted to complete the first program will not be included as hours attempted in the time frame for the second program of study.
5. Students who take course work and are unclassified will have those hours attempted added to their time frame if and when they enter a specific program of study.
6. Students accepted into a program of study who are required to take guided studies or developmental course work, as determined by placement testing results and the professional judgment of a student services counselor, will have the credit hours attempted for such course work count toward their time frame.
7. The credit hours for course incompletes, withdrawals, and repetitions will be counted as hours attempted toward the time frame.
8. Students switching from a degree program to a vocational program who have or nearly have exceeded the initial time frame may appeal to the Director of Financial Aid for a time frame extension.
9. Credit hours transferred in will be counted toward the maximum time frame of eligibility. Prior degrees earned will be taken into consideration when determining transfer hours.

Satisfactory Progress Increments

The College will monitor satisfactory academic progress at three points during each academic year (i.e. at the end of the Fall, Spring, and Summer 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.

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. The student will complete the Satisfactory Academic Progress appeal Request Form.
2. The student will indicate in writing to the Director of Financial Aid the reasons why he/she did not make satisfactory academic progress and why financial

aid should not be terminated. Documentation to support the appeal is required.

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

Reinstatement of Financial Aid Eligibility

Should a student have his/her financial aid eligibility terminated due to not meeting the satisfactory academic 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 academic progress definition. Once the satisfactory academic progress definition is met, eligibility is reinstated for the subsequent satisfactory progress increment. In addition, financial aid eligibility will be reinstated for all appeals upheld, according to the appeal approval conditions.

Scholarships and Other Financial Aid Information

Scholarships

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

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

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

Asheville-Buncombe Technical Community College Foundation

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

- February 15 - Online applications are available at: www.abtech.edu/foundation/scholarships
- April 3 - Students applying for scholarships requiring the establishment of financial need should complete the Free Application for Federal Student Aid (FAFSA). www.fafsa.gov
- May 3 - Online application for scholarships closes.
- July 30 - Scholarship awards sent to students via email.

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

Other Financial Aid Information

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

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

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

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

www.studentloans.gov

Education Tax Credits

As a community college student, you are eligible to receive education tax credits that can reduce the expense of your education. There are three education tax credits available, the American Recovery and Reinvestment Act, Hope Credit and the Lifetime Learning Credit. The credits are based on education expenses paid for you, your spouse, or your dependents.

American Opportunity Credit

Under the American Recovery and Reinvestment Act (ARRA), more parents and students will qualify over the next two years for a tax credit, the American Opportunity Credit, to pay for college expenses.

The American Opportunity Credit was not available on the 2008 returns taxpayers filed during 2009. The new credit modifies the existing Hope credit for tax years 2009 and 2010, making it available to a broader range of taxpayers, including many with higher incomes and those who owe no tax. It also adds required course materials to the list of qualifying expenses and allows the credit to be claimed for four post-secondary education years instead of two. Many of those eligible will qualify for the maximum annual credit of \$2,500 per student.

The full credit is available to individuals whose modified adjusted gross income is \$80,000 or less, or \$160,000 or less for married couples filing a joint return. The credit is phased out for taxpayers with incomes above these levels. These income limits are

higher than under the existing Hope and Lifetime Learning Credits.

If you have questions about the American Opportunity Credit, see <http://www.irs.gov/newsroom/article/0,,id=205674,00.html>.

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 <http://www.irs.gov/newsroom/article/0,,id=213044,00.html>.

Veteran's Educational Benefits

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

Other Policies Affecting the Campus Environment

Tobacco Free Campus

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

Parking Regulations

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

Workplace Violence Prevention Policy and Procedures

Policy

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

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

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

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

Every employee and student is responsible for reporting any threats or acts of violence that he/she has witnessed, received, or has been told that another person has witnessed or received. Even without an actual threat, an employee or student should report any behavior he/she has witnessed which he/she regards as threatening or violent when that behavior is job

related or might be carried out on College property or is connected to College employment or activities. Reports should be made immediately to the campus police department. The College intends to investigate all acts of violence promptly and objectively.

No Weapons On Campus Policy

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

Gun, rifle, pistol, dynamite, cartridge, bomb, grenade, mine, powerful explosive (as defined in N.C.G.S. 14-284.1), bowie knife, dirk, dagger, sling-shot, 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 felony and upon conviction may be punished at the discretion of the court.

Other College Services and Information

College Services

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

The Culinary Technology, Baking and Pastry Arts, and Hotel and Restaurant Management students prepare

and serve lunch and dinner on scheduled Thursdays during fall and spring semesters. See the Student Handbook for times, dates, and reservation information.

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

Textbook costs vary considerably depending upon the curriculum and semester. Book costs also vary from

year to year because of changes in curriculum book prices, texts, and material requirements. Texts and materials will be made available in alternative accessible formats for individuals with disabilities upon request to the Disabilities Services Academic Advisor.

Campus Police and Security. Police and Security Personnel are on duty 24 hours a day, seven days a week. Each security officer is certified to respond to medical emergencies.

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

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

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

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

Distance Learning. In addition to a traditional classroom setting, many College courses are offered in an online learning environment. Online and hybrid classes allow for greater scheduling flexibility and may be a good choice for independent learners.

Online and hybrid classes are listed in the College Schedule. Online sections are designated 'O' and 100% of the instruction is delivered via the Internet, with the possible exception of exams, where a student may be required to come to campus or select a College approved proctor. Hybrid sections are designated 'Y' and combine online instruction with reduced classroom

attendance. To take an Online or Hybrid class you will need access to a computer, the Internet, and email.

All instructional formats require student workloads and outcomes comparable to a traditional class. For more information the Distance Learning Website can be found at: <http://www.abtech.edu/vcampus/>

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

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

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

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

Library Hours

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

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

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

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

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

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

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

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

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

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

Allied Health and Public Service Education

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

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

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

For students interested in starting or managing their own business, the Student Business Incubator is one of many programs and services offered by the A-B Tech Small Business Center/Business Incubator.

Graduation Requirements

"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."

All courses with the following prefixes DEN, EMS, MLT, NUR, RAD, SAB, SON, SUR, VET, MED, PBT, CAT, MRI are designated as 5 year "time out" courses and must have been completed within five years of graduation.

A.A.S. Degrees Conferred

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

Diplomas Awarded

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

Certificates Awarded

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

Collaborations

Associate Degree Nursing RIBN* Option /
Western Carolina University

Health Information Technology /
McDowell Tech Community College

Ophthalmic Medical Assistant Diploma /
Caldwell Community College and Technical Institute

*Regionally Increasing Baccalaureate Nursing

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 out-lined 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 provid-

ed by the sponsoring agency and are not available at the College.

7. Prior to admission each student must achieve a reading score of at least the tenth grade. This testing can be done AFTER submitting your application for enrollment Testing is done in the K. Ray Bailey Building Monday through Thursdays: 8:30 a.m., 10:30 a.m., 1:30 p.m., 3:30 p.m., and 5:30 p.m. and Fridays: 8:30 a.m., 10:30 a.m., and 1:30 p.m.. Please visit <http://placementtesting.abtech.edu> to schedule your placement test. Please arrive in the counseling department of the Bailey Building 20 minutes prior to your scheduled test time.

Basic Law Enforcement Training Certificate Program

Major Requirements

CJC 100 Basic Law Enforcement Training

Total Credit Hours Required

Credits

19

19

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

The Computed Tomography and Magnetic Resonance Imaging Technology curriculum prepares the individual to use specialized equipment to visualize cross-sectional anatomical structures and aid physicians in the demonstration of pathologies and disease processes. Individuals entering this curriculum must be registered or registry-eligible radiologic technologists, radiation therapists, or nuclear medicine technologist

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

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

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

Specific Requirements

1. General college admission requirements.
2. Applicants must be ARRT certified in Radiography, Radiation Therapy, or Nuclear Medicine (may also be NMTCB certified) or registry-eligible at the time of enrollment.

3. Keyboarding skills are highly recommended.
4. Satisfactory completion of medical examination and reports of immunization within 90 days before beginning major area classes. Completed medical and immunization records must be submitted to the department chair before classes begin.
5. Either first dose of Hepatitis B vaccine or completion of series.
6. Documentation of current CPR certification for the Professional Rescuer or Healthcare Provider which must be renewed annually.
7. Criminal background checks may be required prior to admission to clinical sites.

Notice

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

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

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

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

General Education Requirements		Credits
COM 231	Public Speaking	3
ENG 111	Expository Writing	3
Major Requirements		Credits
CAT 210	CT Physics and Equipment	3
CAT 211	CT Procedures	4
CAT 225	CT Clinical Practicum	5
MRI 210	MRI Physics and Equipment	3
MRI 211	MRI Procedures	4
MRI 225	MRI Clinical Practicum	5
CAT 226	CT Clinical Practicum	6
MRI 226	MRI Clinical Practicum	6
Total Credit Hours Required		42

Computed Tomography Technology Certificate Program (C45200L1)

Major Requirements		Credits
CAT 210	CT Physics and Equipment	3
CAT 211	CT Procedures	4
CAT 225	CT Clinical Practicum	5
CAT 226	CT Clinical Practicum	6
Total Credit Hours Required		18

Magnetic Resonance Imaging Technology Certificate Program (C45200L2)

Major Requirements		Credits
MRI 210	MRI Physics and Equipment	3
MRI 211	MRI Procedures	4
MRI 225	MRI Clinical Practicum	5
MRI 226	MRI Clinical Practicum	6
Total Credit Hours Required		18

Criminal Justice Technology

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

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

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

Criminal Justice Technology Associate in Applied Science Degree (A55180)

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

General Education Requirements		Credits
ACA 115	Success and Study Skills	1
ENG 111	Expository Writing	3
ENG 114	Professional Research & Reporting	3
HUM 115	Critical Thinking	3
MAT 115	Mathematical Models (or MAT 151, or MAT 161)	3
PSY 150	General Psychology	3

*The CT/MRI courses will be offered contingent upon sufficient enrollment.

Major Requirements			Credits
CIS 110	Introduction to Computers		3
CJC 111	Introduction to Criminal Justice		3
CJC 112	Criminology		3
CJC 113	Juvenile Justice		3
CJC 114	Investigative Photography (or CJC 120, or CJC 261)		2
CJC 131	Criminal Law		3
CJC 212	Ethics and Community Relations		3
CJC 221	Investigative Principles		4
CJC 231	Constitutional Law		3
SOC 225	Social Diversity (or PSY 281, or PSY 237, or PSY 231)		3
SPA 120	Spanish for the Workplace (or SPA 111, or COM 120, or COM 140)		3
	Electives*		27
Total Credit Hours Required			76

*Electives: CJC 121, CJC 122, CJC 132, CJC 160, CJC 170, CJC 213, CJC 214, CJC 215, CJC 222, CJC 223, CJC 225, CJC 232, CJC 255, CCT 110, CCT 121, or CCT 231.

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

Dental Assisting

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

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

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

Specific Requirements

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

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

3. Acceptable report of medical examination by first day of class.
4. Completion of required immunizations by first day of class, including first two doses of Hepatitis B vaccine.
5. Students applying to the Dental Assisting program are encouraged to have successfully completed BIO 161 or BIO 163 or BIO 168 and BIO 169, CIS 110 or CIS 111, COM 120 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)

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

General Education Requirements			Credits
BIO 161	Intro to Human Biology (or BIO 106)		3
COM 120	Intro to Interpersonal Communications		3
PSY 150	General Psychology		3

Major Requirements			Credits
CIS 111	Basic PC Literacy (or CIS 110)		2
DEN 101	Preclinical Procedures		7
DEN 102	Dental Materials		5
DEN 103	Dental Sciences		2
DEN 104	Dental Health Education		3
DEN 105	Practice Management		2
DEN 106	Clinical Practice I		5
DEN 107	Clinical Practice II		5
DEN 110	Orofacial Anatomy		3
DEN 111	Infection/Hazard Control		2
DEN 112	Dental Radiography		3
Total Credit Hours Required			48

Dental Hygiene

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

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

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

Specific Requirements

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

Dental Hygiene Associate in Applied Science Degree (A45260)

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

General Education Requirements			Credits
BIO 169	Anatomy and Physiology II		4
COM 231	Public Speaking		3
ENG 111	Expository Writing		3
HUM 115	Critical Thinking		3
SOC 240	Social Psychology		3

Major Requirements			Credits
BIO 168	Anatomy and Physiology I		4
BIO 175	General Microbiology		3
CIS 111	Basic PC Literacy (or CIS 110)		2
DEN 110	Orofacial Anatomy		3
DEN 111	Infection/Hazard Control		2
DEN 112	Dental Radiography		3
DEN 120	Dental Hygiene Preclinic Lecture		2
DEN 121	Dental Hygiene Preclinic Lab		2
DEN 123	Nutrition/Dental Health		2
DEN 124	Periodontology		2
DEN 125	Dental Office Emergencies		1
DEN 130	Dental Hygiene Theory I		2
DEN 131	Dental Hygiene Clinic I		3
DEN 140	Dental Hygiene Theory II		1
DEN 141	Dental Hygiene Clinic II		2
DEN 220	Dental Hygiene Theory III		2
DEN 221	Dental Hygiene Clinic III		4
DEN 222	General & Oral Pathology		2
DEN 223	Dental Pharmacology		2
DEN 224	Materials and Procedures		2
DEN 230	Dental Hygiene Theory IV		1
DEN 231	Dental Hygiene Clinic IV		4
DEN 232	Community Dental Health		3
DEN 233	Professional Development		2
DEN 235	Dental Hygiene Concepts		2
Total Credit Hours Required			74

Early Childhood Associate

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

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

Graduates are prepared to plan and implement developmentally appropriate pro-grams 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 be employed in a child care facility who has been convicted of a crime involving child neglect, child abuse, or moral turpitude, or who is an habitually excessive user of alcohol or who illegally uses narcotic or other impairing drugs, or who is mentally or emotionally impaired 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 in Applied Science Degree (A55220)

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

General Education Requirements		Credits
ACA 115	Success and Study Skills	1
COM 120	Interpersonal Communication	3
COM 140	Intercultural Communication	3
ENG 110	Freshman Composition (or ENG 111)	3
MAT 140	Survey of Mathematics	3
PSY 150	General Psychology	3
Major Requirements		Credits
CIS 110	Introduction to Computers	3
COE 115EC	Work Experience I Seminar	1
COE 111EC	Work Experience I	1
EDU 119	Intro to Early Childhood Education	4
EDU 131	Child, Family & Community	3
EDU 144	Child Development I	3
EDU 145	Child Development II	3
EDU 146	Child Guidance	3
EDU 151	Creative Activities	3
EDU 151A	Creative Activities Lab	1
EDU 153	Health, Safety & Nutrition	3
EDU 153A	Health, Safety & Nutrition Lab	1
EDU 154	Social/Emotional/Behavior Development (or EDU 262 Administration II)	3
EDU 184	Early Child Intro Pract	2
EDU 214	Early Childhood Interim Practicum	4
EDU 221	Children with Exceptionalities	3
EDU 248	Developmental Delays (or EDU 234, or EDU 114, EDU 261)	3
EDU 251	Exploration Activities	3
EDU 251A	Exploration Activities Lab	1
EDU 271	Educational Technology	3
EDU 280	Language and & Literacy Experiences	3
EDU 284	Early Childhood Capstone Prac	4
Total Credit Hours Required		74

Early Childhood Certificate (C55220L1)

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

Specific Requirements

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

Major Requirements

	Credits
EDU 119 Intro to Early Childhood Education	4
EDU 144 Child Development I	3
EDU 146 Child Guidance	3
EDU 151 Creative Activities	3
EDU 151A Creative Activities Lab	1
ENG 110 Freshman Composition (or ENG 111)	3
Total Credit Hours Required	17

Special Education Certificate (C55220L2)

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

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

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

Major Requirements

	Credits
EDU 144 Child Development I	3
EDU 145 Child Development II	3
EDU 146 Child Guidance	3

EDU 154	Social/Emotional Behavior Development	3
EDU 221	Children with Exceptionalities	3
EDU 248	Developmental Delays	3
Total Credit Hours Required		18

Infant/Toddler Care Certificate Program (C55290)

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

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

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

Specific Requirements:

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

Major Requirements

	Credits
EDU 119 Intro to Early Childhood Education	4
EDU 144 Child Development I	3
EDU 131 Child, Family & Community	3
EDU 153 Health, Safety & Nutrition	3
EDU 153A Health, Safety & Nutrition Lab	1
EDU 234 Infant, Toddlers, and Twos	3
Total Credit Hours Required	17

Early Childhood/School-Age Education

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

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

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

Specific Requirements

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

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

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

General Education Requirements		Credits
ACA 115	Success and Study Skills	1
COM 120	Interpersonal Communication	3
COM 140	Intercultural Communication	3
ENG 111	Expository Writing (or ENG 110)	3
MAT 140	Survey of Mathematics	3
PSY 150	General Psychology	3

Major Requirements		Credits
CIS 110	Introduction to Computers	3
COE 111EC	Work Experience I	1
EDU 118	Principles and Practice Inst Assistant	3
EDU 119	Intro to Early Childhood Education	4
EDU 131	Child, Family, & Community	3
EDU 144	Child Development I	3
EDU 145	Child Development II	3
EDU 146	Child Guidance	3
EDU 151	Creative Activities	3
EDU 151A	Creative Activities Lab	1
EDU 153	Health, Safety & Nutrition	3
EDU 153A	Health, Safety & Nutrition Lab	1
EDU 163	Classroom Management & Instruction	3
EDU 221	Children With Exceptionalities	3
EDU 248	Developmental Delays	3
EDU 251	Exploration Activities	3
EDU 251A	Exploration Activities Lab	1
EDU 271	Educational Technology	3
EDU 280	Language & Literacy Experiences	3
EDU 285	Internship Experience-School Age	4
EDU 281	Instructional Strategies/Read & Writ	3
EDU 289	Advanced Issues/School Age	2
Total Credit Hours Required		75

Emergency Medical Science

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

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

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

Specific Requirements

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

Emergency Medical Science Associate in Applied Science Degree (A45340)

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

General Education Requirements		Credits
ACA 115	Success and Study Skills	1
BIO 168	Anatomy and Physiology I	4
BIO 169	Anatomy and Physiology II	4
ENG 111	Expository Writing	3
ENG 114	Professional Research & Reporting	3
PHI 240	Introduction to Ethics	3
SOC 225	Social Diversity	3

Major Requirements		Credits
CIS 110	Introduction to Computers (or CIS 111 Basic PC Literacy)	3
EMS 110	EMT-Basic	7
EMS 111	Prehospital Environment (or EMS 115 Defense Tactics for EMS)	3
EMS 120	Intermediate Interventions	3
EMS 121	EMS Clinical Practicum I	2
EMS 130	Pharmacology I for EMS	2
EMS 131	Advanced Airway Management	2
EMS 140	Rescue Scene Management	2
EMS 140A	Rescue Skills Lab	1
EMS 150	Emergency Vehicles and EMS Communication	2
EMS 210	Advanced Patient Assessment	2
EMS 220	Cardiology	4
EMS 221	Clinical Practicum II	3
EMS 230	Pharmacology II For EMS	2
EMS 231	Clinical Practicum III	3
EMS 240	Special Needs Patients	2
EMS 241	Clinical Practicum IV	3
EMS 250	Advanced Medical Emergencies	3
EMS 260	Advanced Trauma Emergencies	2
EMS 270	Life Span Emergencies	3
EMS 285	EMS Capstone	2
Total Credit Hours Required		77

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

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

- General college admission requirements.
 - Complete application for admission.
 - Successfully complete College Placement Test.
 - High School transcript or GED scores on file with admissions office.
 - Official transcript of any prior college credit on file with admissions office.
- Possess current North Carolina driver's license.
- Complete interview with EMS Department faculty.
- 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.
- Current EMT-Paramedic certification.* (A copy of the paramedic education program transcript must be on file in the EMS Department.)
- Current Basic Cardiac Life Support certification.*
- Current Advanced Cardiac Life Support certification.*
- Current Basic Trauma Life Support certification.*
- Current Pediatric Advanced Life Support certification.*

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)

Major Requirements

BIO 168 Human Anatomy and Physiology I

Credits

4

BIO 169	Anatomy and Physiology II	4
CIS 110	Introduction to Computers (or CIS 111 Basic PC Literacy)	3
EMS 140	Rescue Scene Management	2
EMS 140A	Rescue Skills Lab	1
EMS 150	Emergency Vehicles and EMS Communications	2
EMS 230	Pharmacology II For EMS	2
EMS 280	EMS Bridge Course	3
EMS 285	EMS Capstone	2
ENG 111	Expository Writing	3
ENG 114	Professional Research & Reporting	3
PHI 240	Introduction to Ethics	3
SOC 225	Social Diversity	3
Total Credit Hours Required		35

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

Fire Protection Technology

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

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

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

Fire Protection Technology Associate in Applied Science Degree (A55240)

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

General Education Requirements		Credits
ACA 115	Success and Study Skills	1
COM 231	Public Speaking	3
ENG 111	Expository Writing	3
ENG 114	Professional Research & Reporting	3
MAT 115	Mathematical Models	3
PSY 150	General Psychology	3
	Humanities Elective	3

Major Requirements

		Credits
CIS 110	Introduction to Computers	3
FIP 120	Introduction to Fire Protection	3
FIP 124	Fire Prevention & Public Education	3
FIP 128	Detection & Investigation	3
FIP 132	Building Construction	3
FIP 136	Inspections & Codes	3
FIP 140	Industrial Fire Protection	3
FIP 152	Fire Protection Law	3
FIP 220	Fire Fighting Strategies	3
FIP 224	Instructional Methodology	4
FIP 228	Local Government Finance	3
FIP 230	Chemistry of Hazardous Materials I	5
FIP 232	Hydraulics and Water Distribution	3
FIP 236	Emergency Management	3
FIP 240	Fire Service Supervision	3
FIP 260	Fire Protection Planning	3
FIP 276	Managing Fire Services	3

Total Credit Hours Required 73

Fire Protection Technology Certificate (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.

Major Requirements

		Credits
ENG 111	Expository Writing	3
FIP 132	Building Construction	3
FIP 152	Fire Protection Law	3
FIP 220	Fire Fighting Strategies	3
FIP 240	Fire Service Supervision	3
FIP 276	Managing Fire Services	3

Total Credit Hours Required 18

Health Information Technology (Pending Approval)

The Health Information Technology curriculum provides individuals with the knowledge and skills to process, analyze, abstract, compile, maintain, manage, and report health information.

Students will supervise departmental functions; classify, code, and index diagnoses and procedures; coordinate information for cost control, quality management, statistics, marketing, and planning; monitor governmental and non-governmental standards; facilitate research; and design system controls to monitor patient information security.

Graduates of this program may be eligible to write the national certification examination to become a Registered Health Information Technician (RHIT). Employment opportunities include hospitals, rehabilitation facilities, nursing homes, health insurance organizations, outpatient clinics, physicians' offices, hospice, and mental health facilities.

Program offered in collaboration with McDowell Technical Community College. General education and related courses may be taken at A-B Tech. Major area (HIT) classes would be taken at McDowell Technical Community College. The degree is awarded by McDowell Technical Community College.

Health Information Technology (A45360)**Required Courses**

(May be taken at A-B Tech)

		Credits
ACA 115	Success and Study Skills	1
BIO 168	Anatomy & Physiology I	4
BIO 169	Anatomy & Physiology II	4
CIS 110	Introduction to Computers	3
COM 231	Public Speaking	3
ENG 111	Expository Writing	3
MAT 140	Survey of Mathematics	3
MAT 140A	Survey of Mathematics Lab	1
MED 121	Medical Terminology I	3
MED 122	Medical Terminology II	3
	Humanities and Fine Arts Elective	3
	Social and Behavioral Sciences Elective	3

Required Courses

(Taken at McDowell Technical Community College)

		Credits
HIT 110	Fund. of HIT Mgt.	2
HIT 112	Health Law and Ethics	3
HIT 114	Health, Data Systems/Standards	3
HIT 122	Professional Practice Exp. I	1
HIT 124	Professional Practice Exp. II	2

HIT 210	Healthcare Statistics	3
HIT 212	ICD-9-CM Coding	4
HIT 214	CPT/Other Coding Systems	2
HIT 215	Reimbursement Methodology	2
HIT 216	Quality Management	2
HIT 218	Management Principles in HIT	3
HIT 220	Computers in Healthcare	2
HIT 222	Professional Practice Exp. III	2
HIT 226	Principle of Disease	3
HIT 280	Professional Issues	2
OST 247	Procedure Coding	2
OST 248	Diagnostic Coding	2
Total Credit Hours Required		74

Human Services Technology

The Human Services Technology curriculum prepares students for entry-level positions in institutions and agencies which provide social, community, and educational services. Along with core courses, students take courses which prepare them for specialization in specific human service areas.

Students will take courses from a variety of disciplines. Emphasis in core courses is placed on development of relevant knowledge, skills, and attitudes in human services. Fieldwork experience will provide opportunities for application of knowledge and skills learned in the classroom.

Graduates should qualify for positions in mental health, child care, family services, social services, rehabilitation, correction, and educational agencies. Graduates choosing to continue their education may select from a variety of transfer programs at senior public and private institutions.

Specific Requirements

1. General college admission requirements.
2. Three character references by the end of the first semester of enrollment in this program.
3. Acceptable results on medical examinations, criminal background checks, drug & alcohol screens, and immunization records as these are required by a specific co-op site.
4. Compliance with relevant standards outlined in the College's "Guidelines for Students at Risk" brochure.

Human Services Technology Associate in Applied Science Degree (A45380)

General Education Requirements		Credits
BIO 163	Basic Anatomy and Physiology* (or BIO 161)	3-5
COM 231	Public Speaking	3
ENG 111	Expository Writing	3
HUM 115	Critical Thinking	3
SOC 225	Social Diversity	3
	Elective***	3

Major Requirements		Credits
ACA 115	Success and Study Skills	1
CIS 110	Introduction to Computers	3
COE 111SS	COOP Work Experience I	1
COE 115SS	Work Experience Seminar I	1
DDT 110	Developmental Disabilities	3
HSE 110	Introduction to Human Services	3
HSE 112	Group Process I	2
HSE 123	Interviewing Techniques	3
HSE 125	Counseling	3
HSE 210	Human Services Issues	2
HSE 220	Case Management	3
HSE 225	Crisis Intervention	3
HSE 240	Issues in Client Services	3
MHA 238	Psychopathology	3
PSY 150	General Psychology	3
PSY 241	Developmental Psychology	3
SAB 110	Substance Abuse Overview	3
PSY 281	Abnormal Psychology	3
SOC 213	Sociology of the Family	3
SWK 110	Introduction to Social Work	3
	Foreign Language Course Plus Lab as Required**	3-4
Total Credit Hours Required		73-76

*BIO 163 is recommended for students who desire to eventually pursue a bachelor's degree.

**Students may choose from one of the following courses & must take its accompanying lab as required: ASL 111, FRE 111, GER 111, or SPA 111.

***This elective course must be selected from the Associate of Arts core course list and cannot be a foreign language or English literature course.

Medical Assisting

The Medical Assisting curriculum prepares multi-skilled health care professionals qualified to perform administrative, clinical, and laboratory procedures.

Course work includes instruction in scheduling appointments, coding and processing insurance accounts, billing, collections, medical transcription, computer operations; assisting with examinations/treatments, performing routine laboratory procedures, electrocardiography, supervised medication administration; and ethical/legal issues associated with patient care.

Employment opportunities include physicians' offices, health maintenance organizations, health departments, and hospitals.

Asheville-Buncombe Technical Community College is currently undergoing the accreditation process through the Commission on Accreditation of Allied Health Education Programs (CAAHEP). Program criteria are governed by the American Association of Medical Assistants. Once accreditation has been achieved, students who enter the program in the Fall 2010 will be eligible to sit for the certification exam in 2012. A student must be a graduate of CAAHEP-accredited Medical Assisting program to be eligible to sit for the American Association of Medical Assistants' Certification examination to become Certified Medical Assistants.

This program is seeking accreditation by **Commission on Accreditation of Allied Health Education Programs (CAAHEP)**, 1361 Park Street, Clearwater, FL 33756, www.caahep.org, Phone: 727-210-2350, Fax: 727-210-2354 and **American Association of Medical Assistants (AAMA)**, 20 N. Wacker Dr., Ste. 1575 Chicago, IL 60606, www.aama-ntl.org, Phone: 312-899-1500, Fax: 312-899-1259.

Specific Requirements

1. General college admission requirements.
 - a. Complete application for admission.
 - b. Successfully complete College Placement Test.
 - c. High School transcript or GED scores on file with admissions office.
 - d. Official transcript of any prior college credit on file with admissions office.
2. High School units:
 - a. Algebra and Biology strongly recommended.
3. Acceptable reports of medical examinations by first day of Second Semester (Spring I).
4. Satisfactory completion of required immunizations by first day of Second Semester (Spring I).

5. Criminal background checks may be required prior to admissions to clinical sites.
6. Current CPR certification for the Professional Rescuer or Healthcare Provider by the first day of Fifth Semester (Spring II).

Medical Assisting Associate in Applied Science Degree (A45400)

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

General Education Requirements			Credits
COM 120	Intro to Interpersonal Communications (or COM 140)		3
ENG 111	Expository Writing (or ENG 110)		3
MAT 115	Mathematical Models		3
	Social/Behavioral Sciences Elective		3
	Humanities Elective		3
Major Requirements			Credits
BIO 161	Intro to Human Biology		3
CIS 110	Introduction to Computers		3
MED 110	Orientation to Medical Assisting		1
MED 118	Medical Law and Ethics		2
MED 121	Medical Terminology I		3
MED 122	Medical Terminology II		3
MED 130	Admin Office Procedures I		2
MED 131	Admin Office Procedures II		2
MED 138	Infection Hazard Control		2
MED 140	Exam Room Procedures I		5
MED 150	Laboratory Procedures I		5
MED 240	Exam Room Procedures II		5
MED 260	MED Clinical Externship		5
MED 262	MED Clinical Perspectives		1
MED 270	Symptomatology		3
MED 272	Drug Therapy		3
MED 274	Diet Therapy and Nutrition		3
MED 276	Patient Education		2
OST 131	Keyboarding		2
SPA 120	Spanish for the Workplace		3
Total Credit Hours Required			73

Medical Laboratory Technology

This curriculum prepares individuals to perform clinical laboratory procedures in chemistry, hematology, microbiology, and immunohematology that may be used in the maintenance of health and diagnosis/treatment of disease.

Course work emphasizes mathematical and scientific concepts related to specimen collection, laboratory testing and procedures, quality assurance, and reporting/recording and interpreting findings involving tissues, blood, and body fluids.

Graduates may be eligible to take examinations given by the Board of Registry of Medical Technologists of the American Society of Clinical Pathologists or the National Certifying Agency. Employment opportunities include laboratories in hospitals, medical offices, industry and research facilities.

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

Specific Requirements

1. General college admission requirements.
2. High School units:
 - a. Algebra, Chemistry or Chemistry 092 required.
 - b. Biology 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)

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

General Education Requirements		Credits
ENG 111	Expository Writing	3
ENG 114	Professional Research & Reporting	3
MAT 115	Mathematics Models (or MAT 140 Survey of Mathematics)	3
PHI 240	Introduction to Ethics	3
SOC 215	Group Processes (or PSY 150 General Psychology)	3

Major Requirements		Credits
BIO 163	Basic Anatomy and Physiology	5
CHM 130	General, Organic & Biochemistry	3
CHM 130A	General, Organic & Biochemistry Lab	1
CIS 110	Introduction to Computers	3
MLT 110	Introduction to MLT	3
MLT 111	Urinalysis & Body Fluids	2
MLT 120	Hematology/Hemostasis I	4
MLT 126	Immunology and Serology	2
MLT 127	Transfusion Medicine	3
MLT 130	Clinical Chemistry I	4
MLT 140	Introduction to Microbiology	3
MLT 215	Professional Issues	1
MLT 240	Special Clinical Microbiology	3
MLT 252	MLT Practicum I	2
MLT 254	MLT Practicum I	4
MLT 255	MLT Practicum I	5
MLT 261	MLT Practicum II	1
MLT 265	MLT Practicum II	5
MLT 275	MLT Practicum III	5
Total Credit Hours Required		74

Medical Sonography

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

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

Graduates of accredited programs may be eligible to take examinations in ultra-sound 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.

The Diagnostic Medical Sonography Program is accredited in general and vascular concentrations. The following are the accrediting agencies:

Commission on Accreditation of Allied Health Education Programs (CAAHEP)

1361 Park Street, Clearwater, FL 33756, www.caahep.org,
Phone: 727-210-2350, Fax: 727-210-2354

JRC-DMS

6201 University Boulevard, Suite 500, Ellicott City, MD 21043, Phone: 443-973-3251

Specific Requirements

1. General college admission requirements.
2. This program has a competitive selection process. See Selection Criteria and Procedures for Allied Health Programs on the college admissions office web page for full details.
www.abtech.edu/Student_Services/admissions/allied_health.asp
3. High school biology and one unit of high school algebra.
4. Keyboarding skills are highly recommended.
5. Satisfactory completion of medical examination and reports of immunization within 90 days before beginning major area classes. Completed medical and immunization records must be submitted to department chair before classes begin.
6. Either first dose of Hepatitis B vaccine or completion of series.
7. Documentation of current CPR certification for the Professional Rescuer or Healthcare Provider, which must be renewed annually.
8. Completion of an observation in an approved Sonography area. Details are available from the Medical Sonography faculty.
9. Criminal background checks may be required prior to admission to clinical sites.
10. Sonography students will be required to complete clinical rotations which may require them to travel as much as two hours from campus.

Medical Sonography Associate in Applied Science Degree (A45440)

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

General Education Requirements

		Credits
COM 231	Public Speaking	3
ENG 111	Expository Writing	3
MAT 115	Mathematical Models	3
	Humanities Elective	3
	Social/Behavioral Science Elective	3

Major Requirements

		Credits
BIO 163	Basic Anatomy and Physiology	5
CIS 110	Introduction to Computers	3
PHY 125	Health Sciences Physics	4
SON 110	Intro to Sonography	3
SON 111	Sonographic Physics	4
SON 120	SON Clinical Ed I	5
SON 121	SON Clinical Ed II	5

SON 130	Abdominal Sonography I	3
SON 131	Abdominal Sonography II	2
SON 140	Gynecological Sonography	2
SON 220	SON Clinical Ed III	8
SON 221	SON Clinical Ed IV	8
SON 225	Case Studies	1
SON 241	Obstetrical Sonography I	2
SON 242	Obstetrical Sonography II	2
SON 250	Vascular Sonography	2
SON 289	Sonographic Topics	2
Total Credit Hours Required		76

Nursing

Associate Degree Nursing Option

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

Upon completion of the Associate Degree Nursing Program, the graduate will upon licensure:

1. Practice professional nursing behaviors incorporating personal responsibility and accountability for continued competence.
2. Communicate effectively with individuals, significant support person(s), and members of the interdisciplinary healthcare team.
3. Integrate knowledge of the holistic needs of the individual to provide an individual centered assessment.
4. Incorporate informatics to formulate evidence-based clinical judgments and management decisions.
5. Implement caring interventions incorporating documented best practices for individuals in diverse settings.
6. Develop a teaching plan for individuals, and/or the nursing team, incorporating teaching and learning principles.
7. Collaborate with the interdisciplinary healthcare team, as an advocate for the individual, to achieve positive individual and organization outcomes.
8. Manage health care for the individual using cost effective nursing strategies, quality improvement processes, and current technologies.

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. High School units:
 - a. Chemistry and Biology required
 - b. Algebra highly recommended
3. This program has a competitive selection process. See Selection Criteria and Procedures for Allied Health Programs on the college admissions office web page for full details.

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

4. 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.
5. To be eligible for admission in Fall 2011, all nursing program applicants must, by November 15, 2010
 - a. Provide documentation of successful completion of a NC approved Certified Nurse Aide I Program which includes theory, lab, and clinical components*. (A copy of a college transcript or a notarized course completion certificate will be acceptable documentation).

and

- b. Hold a documented, current, unrestricted credential as a Nurse Aide I (NAI) from the North Carolina Nurse Aide Registry and the Division of Health Service Regulation. (A copy of current listing on the NC DHSR Nurse Aide Registry Website by November 15, 2010 will be acceptable documentation).
6. Satisfactory completion of required immunizations.
7. Current CPR for the Professional Rescuer certification is a prerequisite to admission and must be maintained throughout the program.
8. Students applying to the Associate Degree Nursing program are encouraged to have successfully completed: BIO 168, BIO 169, BIO 175, CIS 110, ENG 111, ENG 114, PSY 150, PSY 241, and a Humanities elective prior to program admission due to the rigorous nature of the A.D.N. curriculum.
9. Effective January 1, 2002, applicants for initial licensure in North Carolina must have a criminal background check. The clinical site may require a criminal background check and/or drug testing prior to participation in the clinical component. If any clinical facility refuses to allow the student to participate in clinical experiences in that clinical agency, the student may not be able to progress in the program.

10. Admission with advanced standing is subject to space available in the clinical component of the nursing program. Persons who begin their nursing education at Asheville-Buncombe Technical Community College have preference in admission over students requesting transfer into the program. Space will be allotted to transfer students only when no students who have previously enrolled in the A-B Tech ADN Program are requesting and have qualified for re-entry.

Associate in Applied Science Degree (A45110)

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

General Education Requirements			Credits
BIO 175	General Microbiology		3
ENG 111	Expository Writing		3
ENG 114	Professional Research & Reporting		3
PSY 150	General Psychology		3
PSY 241	Development Psychology		3
	Humanities Elective		3

Major Requirements			Credits
BIO 168	Anatomy and Physiology I		4
BIO 169	Anatomy and Physiology II		4
CIS 110	Introduction to Computers		3
NUR 111	Intro to Health Concepts		8
NUR 112	Health Illness Concepts		5
NUR 113	Family Health Concepts		5
NUR 114	Holistic Health Concepts		5
NUR 211	Health Care Concepts		5
NUR 212	Health Systems Concepts		5
NUR 213	Complex Health Systems		10
Total Credit Hours Required			72

Associate Degree Nursing Advanced Placement Option

The advanced placement option for LPNs will not be offered during academic year 2010 - 2011. This option is expected to be offered in future years.

Associate Degree Nursing RIBN Option**

The R.I.B.N. option is an A.A.S. Dual Enrollment Program offered in collaboration with Western Carolina University. Students would be accepted to and take courses at both A-B Tech and WCU during enrollment in the RIBN option.

Students are required to:

1. Provide documentation of successful completion of a NC approved Certified Nurse Aide I Program which includes theory, lab, and clinical components no later than the first day of fall semester year two*.

(A copy of a college transcript or a notarized course completion certificate will be acceptable documentation).

and

2. Hold a documented, current, unrestricted credential as a Nurse Aide I (NAI) from the North Carolina Nurse Aide Registry and the Division of Health Service Regulation.
3. Maintain dual admission and continued enrollment at both AB Tech and WCU by completing at least one WCU course each semester (Fall / Spring) during years 1 through 3.
4. Maintain a GPA of 2.5 or greater to progress in the RIBN option.
5. Maintain full-time enrollment each semester if a recipient of NC Nurse Scholars funding.
6. Home school will be AB Tech years 1, 2, and 3.
7. Year 1: enroll in general education courses at AB Tech and WCU as advised by the RIBN Nursing Student Advisor
8. Year 2 and 3: enroll in associate degree nursing course at AB Tech and continue enrollment in WCU courses as advised by RIBN Nursing Student Advisor.
9. Home school will be WCU year 4.
10. Successfully pass NCLEX - RN to progress to year 4.
11. See the RIBN nursing advisor for the recommended course sequence.

Practical Nursing Option

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.

Upon completion of the Practical Nursing Program, the graduate will upon licensure:

1. Practice professional nursing behaviors incorporating person responsibility and accountability for continued competence.
2. Communicate data professionally and effectively to the registered nurse.
3. Provide individualized nursing care utilizing knowledge of holistic needs.
4. Utilize informatics to know where to find data, including best practices.
5. Implement caring interventions which incorporate documented best practices for individuals in diverse settings as is developed by the registered nurse.

6. Reinforce the individualized teaching plan developed by the registered nurse.
7. Provide nursing care for the individual using cost effective nursing strategies and current technology.

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

Specific Requirements

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

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

3. Final admission to the Practical Nursing program shall be contingent upon documentation of physical and emotional health that would provide evidence that is indicative of the applicant's ability to provide safe nursing care to the public.
4. To be eligible for admission in Fall 2011, all nursing program applicants must, by November 15, 2010
 - a. Provide documentation of successful completion of a NC approved Certified Nurse Aide I Program which includes theory, lab, and clinical components*. (A copy of a college transcript or a notarized course completion certificate will be acceptable documentation).

and

- b. Hold a documented, current, unrestricted credential as a Nurse Aide I (NAI) from the North Carolina Nurse Aide Registry and the Division of Health Service Regulation. (A copy of current listing on the NC DHSR Nurse Aide Registry Website by November 15, 2010 will be acceptable documentation).
5. Satisfactory completion of required immunizations.
6. Current CPR for the Professional Rescuer certification is a prerequisite to admission and must be maintained throughout the program.
7. Students applying to the Practical Nursing Program are encouraged to have successfully completed: BIO 168, BIO 169, ENG 111, and PSY 150 prior to program admission due to the rigorous nature of the Practical Nursing curriculum. Students with limited technology skills are encouraged to complete CIS 110 as an aid to understanding computer documentation and use of informatics in clinical agencies.

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

**Regionally Increasing Baccalaureate Nursing

8. Effective January 1, 2002, applicants for initial licensure in North Carolina must have a criminal background check. The clinical site may require a criminal background check and/or drug testing prior to participation in the clinical component. If any clinical facility refuses to allow the student to participate in clinical experiences in that clinical agency, the student will not be able to progress in the program.

Practical Nursing Diploma (D45660)

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

General Education Requirements		Credits
ENG 111	Expository Writing	3
PSY 150	General Psychology	3
Major Requirements		Credits
BIO 168	Anatomy and Physiology I	4
BIO 169	Anatomy and Physiology II	4
NUR 101	Practical Nursing I	11
NUR 102	Practical Nursing II	12
NUR 103	Practical Nursing III	10
Program Totals		47

Ophthalmic Medical Assistant

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

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

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

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

Ophthalmic Medical Assistant Diploma (D45510)

See Allied Health and Public Service Division for additional information.

General Education Requirements (May be taken at A-B Tech)		Credits
ACA 115	Success and Study Skills	1
COM 120	Intro to Interpersonal Communications	3

ENG 111	Expository Writing	3
PSY 150	General Psychology	3

Major Requirements (Taken at Caldwell CC&TI)		Credits
OPH 103	Intro to Diseases of Eye	2
OPH 104	Basic Ophthalmic Pharma.	2
OPH 105	Ophthalmic Clin Proc I	2
OPH 106	Ophthalmic Med. Asst. Pract. I	9
OPH 107	Ophthalmic Clin Preoc II	2
OPH 108	Ophthalmic Patient Care	2
OPH 109	Opthal. & Basic Refract	2
OPH 110	Op Med Asst Practicum II	9
OPH 150	Intro to Ophth Med Assist	2
OPH 151	Ocular Anat. and Physiology	2
Total Credit Hours Required		44

Phlebotomy

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

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

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

Specific Requirements

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

Phlebotomy Certificate (C45600)

Major Requirements		Credits
PBT 100	Phlebotomy Technology	6
PBT 101	Phlebotomy Practicum	3
PSY 118	Interpersonal Psychology (or PSY 150 General Psychology)	3
Total Credit Hours Required		12

Radiography

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

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

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

Specific Requirements

1. General college admission requirements.
2. This program has a competitive selection process. See Selection Criteria and Procedures for Allied Health Programs on the college admissions office web page for full details.
www.abtech.edu/Student_Services/admissions/allied_health.asp
3. High school biology.
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 an 8-12 hour observation in the Radiology department at one of the clinical affiliates. Details will be provided to the top program applicants and alternates after the selection process has been completed.
9. Criminal background checks may be required prior to admission to clinical sites.

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

Radiography students will be required to complete clinical rotations which may require them to travel as much as one hour from campus. Clinical affiliates are currently located in Asheville, Hendersonville, Fletcher, Brevard, Weaverville and Marion.

Radiography Associate in Applied Science Degree (A45700)

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

General Education Requirements		Credits
BIO 163	Basic Anatomy and Physiology	5
COM 231	Public Speaking	3
ENG 111	Expository Writing	3
HUM 115	Critical Thinking	3
	Social/Behavioral Science Elective	3

Major Requirements		Credits
CIS 110	Introduction to Computers	3
RAD 110	Radiography Introduction & Patient Care	3
RAD 111	RAD Procedures I	4
RAD 112	RAD Procedures II	4
RAD 121	Radiographic Imaging I	3
RAD 122	Radiographic Imaging II	2
RAD 131	Radiographic Physics I	2
RAD 151	RAD Clinical Education I	2
RAD 161	RAD Clinical Education II	5
RAD 171	RAD Clinical Education III	4
RAD 182	RAD Clinical Elective	2
RAD 211	RAD Procedures III	3
RAD 231	Radiographic Physics II	2
RAD 241	Radiobiology/Protection	2
RAD 245	RAD Image Analysis	2
RAD 251	RAD Clinical Education IV	7
RAD 261	RAD Clinical Education V	7
RAD 271	Radiography Capstone	1
Total Credit Hours Required		75

Surgical Technology

This curriculum prepares individuals to assist in the care of the surgical patient in the operating room and to function as a member of the surgical team.

Students will apply theoretical knowledge to the care of patients undergoing surgery and develop skills necessary to prepare supplies, equipment, and instruments; maintain aseptic conditions; prepare patients for surgery; and assist surgeons during operations.

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

Specific Requirements

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

The Surgical Technology program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), 1361 Park Street, Clearwater, FL 33756, www.caahep.org, Phone: 727-210-2350, Fax: 727-210-2354, through the Accreditation Review Council on Education in Surgical Technology and Surgical Assisting (ARC-STSA), 6 W. Dry Creek Circle, Suite #110, Littleton, CO 80120, Phone: 303-694-9262, Fax: 303-741-3655 <http://www.arcstsa.org/>

Surgical Technology Associate in Applied Science Degree (A45740)

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

General Education Requirements		Credits
ACA 115	Success and Study Skills	1
BIO 163	Basic Anatomy & Physiology	5
ENG 111	Expository Writing	3
ENG 114	Professional Research & Reporting (or COM 120 Interpersonal Comm.)	3
HUM 115	Critical Thinking (or PHI 240 Introduction to Ethics)	3
PSY 150	General Psychology	3

Major Requirements		Credits
BIO 175	General Microbiology	3
BUS 135	Principles of Supervision	3
CIS 110	Introduction to Computers	3
SOC 215	Group Processes	3
SUR 110	Introduction to Surgical Technology	3
SUR 111	Periop Patient Care	7
SUR 122	Surgical Procedures I	6
SUR 123	Surgical Clinical I	7
SUR 134	Surgical Procedures II	5
SUR 135	Surgical Clinical II	4
SUR 137	Professional Success Preparation	1
SUR 210	Advanced Clinical Practice	2
SUR 211	Advanced Theoretical Concepts	2
Total Credit Hours Required		67

Surgical Technology Diploma (D45740)

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

General Education Requirements		Credits
ACA 115	Success and Study Skills	1
BIO 163	Basic Anatomy & Physiology	5
ENG 111	Expository Writing	3

Major Requirements		Credits
BIO 175	General Microbiology	3
CIS 110	Introduction to Computers	3
SUR 110	Introduction to Surgical Technology	3
SUR 111	Perioperative Patient Care	7
SUR 122	Surgical Procedures I	6
SUR 123	Surgical Clinical I	7
SUR 134	Surgical Procedures II	5
SUR 135	Surgical Clinical II	4
SUR 137	Professional Success Preparation	1
Total Credit Hours Required		48

Surgical Technology Bridge Program

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

Specific Requirements

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

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

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

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

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

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

General Education Requirements			Credits
BIO 163	Basic Anatomy & Physiology		5
ENG 111	Expository Writing		3
ENG 114	Professional Research & Reporting (or COM 120 Interpersonal Comm.)		3
PSY 150	General Psychology		3
HUM115	Critical Thinking (or PHI 240 Introduction to Ethics)		3

Major Requirements			Credits
BIO 175	General Microbiology		3
BUS 135	Principles of Supervision		3
CIS 110	Introduction to Computers		3
SOC 215	Group Processes		3
SUR 210	Advanced Clinical Practice		2
SUR 211	Advanced Theoretical Concepts		2
Total Credit Hours Required excluding SUR Diploma courses			33

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

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

Veterinary Medical Technology

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

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

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

Specific Requirements

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

Veterinary Medical Technology Associate in Applied Science Degree (A45780)

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

General Education Requirements		Credits
ACA 115	Success and Study Skills	1
ENG 111	Expository Writing (or ENG 110)	3
ENG 114	Professional Research & Reporting	3
MAT 110	Mathematical Measurement (or MAT 140)	3
	Humanities Elective	3
	Social/Behavioral Science Elective	3

Major Requirements		Credits
CHM 130	General Organic, and Biochemistry	3
CHM 130A	General Organic, and Biochemistry Lab	1
CIS 110	Introduction to Computers	3
COE 112	Co-op Work Experience	2
VET 110	Animal Breeds and Husbandry	3
VET 114	Intro to Veterinary Medical Tech	1
VET 120	Veterinary Anatomy and Physiology	4
VET 121	Vet Medical Terminology	3
VET 123	Veterinary Parasitology	3
VET 125	Veterinary Diseases I	2
VET 126	Veterinary Diseases II	2
VET 131	Veterinary Laboratory Techniques I	3
VET 133	Veterinary Clinical Practices I	3
VET 137	Veterinary Office Practices	2
VET 211	Veterinary Laboratory Techniques II	3
VET 212	Veterinary Laboratory Techniques III	3
VET 213	Veterinary Clinical Practices II	4
VET 214	Veterinary Clinical Practices III	4
VET 215	Veterinary Pharmacology	3
VET 217	Large Animal Clinical Practices	3
VET 237	Animal Nutrition	3
Total Credit Hours Required		74

Business and Hospitality Education

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

For students interested in starting or managing their own business, the Student Business Incubator is one of many programs and services offered by the A-B Tech Small Business Center/Business Incubator.

Objectives of Business and Hospitality Programs

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

A.A.S. Degrees Conferred

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

Certificates Awarded

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

Accounting

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

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

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

Accounting Associate in Applied Science Degree (A25100)

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

General Education Requirements		Credits
ACA 115	Success and Study Skills	1
COM 231	Public Speaking	3
ECO 252	Principles of Macroeconomics	3
ENG 111	Expository Writing (or ENG 110)	3
MAT 115	Mathematical Models (or MAT 151/151A)	3
	Humanities Elective	3
Major Requirements		Credits
ACC 120	Principles of Financial Accounting	4
ACC 121	Principles of Managerial Accounting	4
ACC 129	Individual Income Taxes	3
ACC 130	Business Income Taxes	3
ACC 140	Payroll Accounting	2
ACC 150	Accounting Software Applications	2
ACC 180	Practices in Bookkeeping	3
ACC 220	Intermediate Accounting I	4
ACC 240	Government and Not-for-Profit Accounting	3
ACC 269	Auditing	3
BUS 115	Business Law I	3
BUS 137	Principles of Management	3
BUS 147	Business Insurance	3
BUS 225	Business Finance	3

CIS 110	Introduction to Computers	3
CTS 130	Spreadsheet	3
ECO 251	Principles of Microeconomics	3
MKT 120	Principles of Marketing	3
	Elective*	3
Total Credit Hours Required		74

*Electives: ACC 131, BUS 116, BUS 151, BUS 240, BUS 260, BUS 270, BUS 280, ETR 210, ETR 220, ETR 240.

Accounting Level I Certificate (C25100L1)

Accounting Level I provides introductory training in the field of accounting. Applicants must have earned a high school diploma or GED to apply for this certificate.

Major Requirements		Credits
ACC 120	Principles of Financial Accounting	4
ACC 121	Principles of Managerial Accounting	4
ACC 140	Payroll Accounting	2
BUS 115	Business Law I	3
Total Credit Hours Required		13

Accounting Level II Certificate (C25100L2)

Accounting 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 this certificate.

Major Requirements		Credits
ACC 129	Individual Income Taxes	3
ACC 220	Intermediate Accounting I	4
ACC 180	Practices in Bookkeeping	3
ACC 240	Government & Not-for-Profit Accounting	3
Total Credit Hours Required		13

Baking and Pastry Arts

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

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

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

Specific Program Requirements

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

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

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

General Education Requirements		Credits
COM 231	Public Speaking	3
ENG 111	Expository Writing (or ENG 110)	3
MAT 115	Mathematical Models	3
PSY 150	General Psychology	3
	Humanities Elective	3

Major Requirements

		Credits
ACA 115	Success and Study Skills	1
BPA 120	Petit Fours and Pastries	3
BPA 130	European Cakes and Tortes	3
BPA 150	Artisan & Specialty Breads	4
BPA 210	Cake Design & Decorating	3
BPA 220	Confection Artistry	4
BPA 230	Chocolate Artistry	3
BPA 240	Plated Desserts	3
BPA 250	Dessert & Bread Production	5
BPA 260	Pastry & Baking Marketing	3
CIS 110	Introduction to Computers	3
COE 112	Co-op Work Experience I	2
CUL 110	Sanitation and Safety	2
CUL 110A	Sanitation and Safety Lab	1
CUL 112	Nutrition for Foodservice	3
CUL 142	Fundamentals of Food	5
CUL 150	Food Science	2
CUL 160	Baking I	3
HRM 220	Food & Beverage Controls	3
HRM 245	Hosp. Human Resource Mgt.	3
Total Credit Hours Required		74

Business Administration

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

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

Through these skills, students will have a sound business education base for life-long 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)

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

General Education Requirements		Credits
ACA 115	Success and Study Skills	1
COM 231	Public Speaking	3
ECO 252	Principles of Macroeconomics	3
ENG 111	Expository Writing (or ENG 110)	3
MAT 115	Mathematical Models	3
	Humanities Elective	3

Major Requirements		Credits
ACC 120	Principles of Financial Accounting	4
ACC 121	Principles of Managerial Accounting	4
BUS 110	Introduction to Business	3
BUS 115	Business Law I	3
BUS 116	Business Law II	3
BUS 135	Principles of Supervision	3
BUS 137	Principles of Management	3
BUS 147	Business Insurance	3
BUS 153	Human Resource Management	3
BUS 225	Business Finance	3
BUS 239	Bus Applications Seminar	2
BUS 255	Organizational Behavior in Business	3
BUS 280	REAL Small Business	4
CIS 110	Introduction to Computers	3
CTS 130	Spreadsheet	3

ECO 251	Principles of Microeconomics	3
MKT 120	Principles of Marketing	3
	Electives*	6
Total Credit Hours Required		75

**Electives: BUS 151, BUS 240, BUS 260, BUS 270, ETR 210, ETR 220, ETR 240, MKT 121, MKT 123, MKT 220*

Computer Information Technology

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

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

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

Computer Information Technology Associate in Applied Science Degree (A25260)

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

General Education Requirements		Credits
ACA 115	Success and Study Skills	1
ENG 111	Expository Writing	3
ENG 114	Prof. Research and Reporting	3
MAT 115	Mathematical Models	3
	(or MAT 171 Precalculus Algebra)	
	Humanities Elective	3
	Social/Behavioral Science Elective	3

Major Requirements		Credits
CIS 110	Introduction to Computers	3
CIS 115	Intro to Programming and Logic	3
CTS 115	Info Sys Business Concept	3
CTS 120	Hardware/Software Support	3
CTS 135	Integrated Software Intro	4
CTS 285	Systems Analysis and Design	3
CTS 287	Emerging Technologies	3

CTS 289	System Support Project	3
DBA 110	Database Concepts	3
GIS 111	Introduction to GIS	3
NET 110	Networking Concepts	3
NOS 110	Operating System Concepts	3
NOS 130	Windows Single User	3
NOS 230	Windows Admin I	3
SEC 110	Security Concepts	3
WEB 115	Web Markup and Scripting	3
WEB 210	Web Design	3
	Elective 1*	3
	Elective 2*	3
Total Credit Hours Required		74

Electives

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

Option I - Database:

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

Option II - Tech Support:

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

Option III - Design:

Elective 1	WEB 140	Web Development Tools
Elective 2	CIS 165	Desktop Publishing I (or Co-op Work Experience)

*Option IV - Business Support:

Elective 1	CTS 217	Computer Train/Support
Elective 2	CIS 165	Desktop Publishing I (or Co-op Work Experience)

*Option V - Geographic Information Systems:

Elective 1	GIS 232	Spatial Databases
Elective 2	GIS 215	GIS Data Models (or Co-op Work Experience)

Database Management Certificate (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. If a student does not have the prior proficiency, other coursework might be required to meet course prerequisites.

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.

Major Requirements

		Credits
DBA 110	Database Concepts	3
DBA 120	Database Programming I	3
DBA 210	Database Administration	3
WEB 182	PHP Programming	3
Total Credit Hours Required		12

Geospatial Database Technology Certificate (C25260L4)

The Geospatial Database Technology Certificate provides a curriculum based on a solid foundation in GIS concepts. Students enrolled in this certificate will learn the different forms of spatial data and their essential properties; ways spatial data can be used to investigate complex problems; principles and methods for collecting spatial data; designing, creating and manipulating GIS databases and operating GPS technology.

This certificate is designed for students who have experience with computers and want to improve geospatial database skills. If a student does not have prior proficiency, other coursework might be required to meet course pre-requisites.

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.

Major Requirements

		Credits
DBA 110	Database Concepts	3
GIS 111	Introduction to GIS	3
GIS 215	GIS Data Models	3
GIS 232	Special Databases	3
Total Credit Hours Required		12

Microcomputer Applications Certificate (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.

Major Requirements	Credits
CIS 110 Introduction to Computers	3
CTS 135 Integrated Software	4
DBA 110 Database Concepts	3
NOS 110 Operating Systems Concepts	3
Total Credit Hours Required	13

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.

Major Requirements	Credits
CIS 110 Introduction to Computers	3
CTS 120 Hardware/Software Support	3
CTS 220 Advanced Hardware/Software Support	3
NOS 110 Operating System Concepts	3
Total Credit Hours Required	12

Cosmetology

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

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

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

The Mountain Tech Spa, an on-campus spa facility located in the Birch Building, provides practical experience for Cosmetology students under the direction of College faculty.

Specific Program Requirements

1. General college admission requirements.
2. Completion of required immunizations by the first day of class, including annual TB test and first dose of Hepatitis B vaccine. Second Hepatitis B vaccine to be completed at least one month after the first dose. Third injection to be completed six months after the first dose.
3. To earn hours, Cosmetology students must be physically present in the laboratory. When leaving a laboratory, students must clock out.
4. Students enrolled in the program should not be subject to colorblindness, pregnancy or have a sensitivity to chemicals.
5. Students should be physically able to use cosmetology equipment such as clippers and shears and able to stand for long periods of time.

Cosmetology Associate in Applied Science (A55140)

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

General Education Requirements	Credits
ACA 115 Success and Study Skills	1
COM 120 Intro to Interpersonal Communication	3
ENG 111 Expository Writing (or ENG 110)	3
MAT 115 Mathematical Models	3
PSY 150 General Psychology	3
Humanities Elective	3

Major Requirements			Credits
BUS 151	People Skills		3
BUS 280	REAL Small Business (or BUS 137)		4
CIS 113	Computer Basics		1
COS 111	Cosmetology Concepts I		4
COS 112	Salon I		8
COS 113	Cosmetology Concepts II		4
COS 114	Salon II		8
COS 115	Cosmetology Concepts III		4
COS 116	Salon III		4
COS 117	Cosmetology Concepts IV		2
COS 118	Salon IV		7
COS 260	Design Applications (or COS 240)		2
Total Credit Hours Required			67

Cosmetology – Diploma (D55140)

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

General Education Requirements			Credits
COM 120	Intro to Interpersonal Communication		3
PSY 150	General Psychology		3

Major Requirements			Credits
CIS 113	Computer Basics		1
COS 111	Cosmetology Concepts I		4
COS 112	Salon I		8
COS 113	Cosmetology Concepts II		4
COS 114	Salon II		8
COS 115	Cosmetology Concepts III		4
COS 116	Salon III		4
COS 117	Cosmetology Concepts IV		2
COS 118	Salon IV		7
Total Credit Hours Required			48

Culinary Technology

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

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

Graduates should qualify for entry-level positions such as line cook, station chef, and assistant pastry

chef. American Culinary Federation certification may be available to graduates. With experience, graduates may advance to positions such as sous chef, executive chef, or food service manager.

Specific Program Requirements

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

Culinary Technology Associate in Applied Science Degree (A55200)

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

General Education Requirements			Credits
COM 231	Public Speaking		3
ENG 111	Expository Writing (or ENG 110)		3
PSY 150	General Psychology		3
MAT 115	Mathematical Models		3
	Humanities Elective		3

Major Requirements			Credits
CIS 110	Introduction to Computers		3
COE 112	Co-op Work Experience I		2
CUL 110	Sanitation and Safety		2
CUL 110A	Sanitation and Safety Lab		1
CUL 112	Nutrition for Food Service		3
CUL 120	Purchasing		2
CUL 130	Menu Design		2
CUL 135	Food and Beverage Service		2
CUL 135A	Food and Beverage Service Lab		1
CUL 140	Basic Culinary Skills		5
CUL 150	Food Science		2
CUL 160	Baking I		3
CUL 170	Garde Manger I		3
CUL 180	Internat & Amer Regl Cuisine (or CUL 275 Catering Cuisine)		5
CUL 214	Wine Appreciation		2
CUL 240	Advanced Culinary Skills		5
CUL 240A	Advanced Culinary Skills Lab		1
CUL 250	Classical Cuisine		5
CUL 260	Baking II (or CUL 285 Competition Fundamentals)		3
CUL 270	Garde Manger II		3
HRM 220	Food and Beverage Controls		3
HRM 245	Hosp. Human Resource Mgt		3
Total Credit Hours Required			76

Digital Media Technology

The Digital Media Technology program prepares students for entry-level jobs in the digital design and multimedia industry. Students learn to synthesize multimedia, hypertext, computer programming, information architecture, and client/server technologies using both Internet and non-network-based media.

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

Graduates should qualify for employment as web designers, graphic art-ists/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)

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

General Education Requirements	Credits
ACA 115 Success and Study Skills	1
ENG 111 Expository Writing	3
ENG 114 Prof. Research and Reporting	3
MAT 115 Mathematical Models (or MAT 171 Precalculus Algebra)	3
Humanities Elective	3
Social Sciences Elective	3

Major Requirements	Credits
ART 171 Computer Art I	3
ART 271 Computer Art II	3
CIS 110 Introduction to Computers	3
CIS 115 Introduction to Programming and Logic	3
DBA 110 Database Concepts	3
DME 110 Introduction to Digital Media	3
DME 120 Intro to Multimedia Applications	3
DME 130 Digital Animation I	3
DME 140 Introduction to Audio/Video Media	3
DME 210 User Interface Design	3
DME 230 Digital Animation II	3
DME 260 Emerging Technologies in Digital Media	3

DME 270 Professional Practices in Digital Media	3
DME 285 Systems Project	3
WEB 115 Web Markup and Scripting	3
WEB 210 Web Design	3
Elective Track	9

Total Credit Hours Required 73

Elective Tracks

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 182	PHP Programming
Elective 2	DME 220	Interactive Multimedia Programming
Elective 3	CSC 151	JAVA Programming (or Co-op Work Experience)

Artistic Track:

Elective 1	ART 264	Digital Photography I (or Art course approved by advisor)
Elective 2	DME 115	Graphic Design Tools
Elective 3	WEB 140	Web Development Tools (or Co-op Work Experience) (or ART course approved by advisor)

Video Track:

Elective 1	ART 266	Videography
Elective 2	DME 240	Media Compression
Elective 3	FVP 250	Production Specialties I (or Co-op Work Experience)

GIS Track:

Elective 1	GIS 111	Introduction to GIS
Elective 2	GIS 121	Georeferencing and Mapping
Elective 3	GIS 222	Internet Mapping

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. If a student does not have the prior proficiency other coursework might be required to meet course pre-requisites.

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.

Major Requirements		Credits
ART 171	Computer Art	3
ART 266	Videography I	3
DME 140	Introduction to Audio/Video Media	3
DME 240	Media Compression	3
FVP 250	Production Specialties I	3
Total Credit Hours Required		15

Digital Media Technology Interactive Multimedia Certificate (C25210L2)

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

This certificate is designed for students who have experience with computers and want to improve Flash design and programming skills. Previous experience with Adobe Photoshop, Adobe Illustrator, and web design suggested. If a student does not have the prior proficiency other coursework might be required to meet course pre-requisites.

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.

Major Requirements		Credits
DME 110	Introduction to Digital Media	3
DME 120	Intro to Multimedia Applications	3
DME 130	Digital Animation I	3
DME 220	Interactive Multimedia Programming	3
Total Credit Hours Required		12

Geospatial Analysis and Visualization Certificate (C25210L3)

The Geospatial Analysis and Visualization Certificate provides a curriculum based on a solid foundation in GIS concepts. Students enrolled in this certificate will learn different methods of delivery of geographic information; principles of map design and effective cartographic communication; and delivery of geographic information through the World Wide Web.

This certificate is designed for students who have experience with computers and want to improve geospatial database skills. If a student does not have the prior proficiency other coursework might be required to meet course pre-requisites.

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.

Major Requirements		Credits
CIS115	Intro to Programming and Logic	3
GIS111	Introduction to GIS	3
GIS121	Georeferencing and Mapping	3
GIS222	Internet Mapping	3
WEB115	Web Markup and Scripting	3
Total Credit Hours Required		15

Entrepreneurship

The Entrepreneurship curriculum is designed to provide students with the knowledge and the skills necessary for employment and growth as self-employed business owners.

Course work includes developing a student's ability to make informed decisions as future business owners. Courses include entrepreneurial concepts learned in innovation and creativity, business funding, and marketing. Additional course work includes computers and economics.

Through these skills, students will have a sound education base in entrepreneurship for lifelong learning. Graduates are prepared to be self-employed and open their own businesses.

Entrepreneurship Associate in Applied Science Degree (A25490)

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

General Education Requirements		Credits
ACA 115	Success and Study Skills	1
COM 231	Public Speaking	3
ENG 111	Expository Writing	3
ENG 114	Professional Research & Reporting	3
HUM 115	Critical Thinking	3
PSY 150	General Psychology	3
MAT 115	Mathematical Models (or MAT 151/MAT 151A)	3

Major Requirements		Credits
ACC 120	Principles of Financial Accounting	4
ACC 121	Principles of Managerial Accounting	4
ACC 150	Accounting Software Applications	2
BUS 110	Introduction to Business	3
BUS 137	Principles of Management	3
BUS 175	Contract Negotiations	3
BUS 240	Business Ethics	3
BUS 280	REAL Small Business	4
CIS 110	Introduction to Computers	3
CTS 130	Spreadsheet	3
ECO 251	Principles of Microeconomics	3
ECO 252	Principles of Macroeconomics	3
ETR 210	Introduction to Entrepreneurship	3
ETR 215	Law for Entrepreneurs	3
ETR 220	Innovation and Creativity	3
ETR 230	Entrepreneur Marketing	3
ETR 240	Funding for Entrepreneurs	3
ETR 270	Entrepreneurship Topics	3
Total Credit Hours Required		75

Entrepreneurship Certificate (C25490L1)

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

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

Major Requirements		Credits
ACC 120	Principles of Financial Accounting	4
BUS 110	Introduction to Business	3
BUS 280	REAL Small Business	4
ETR 210	Introduction to Entrepreneurship	3
Total Credit Hours Required		14

Esthetics Technology

The Esthetics Technology curriculum provides competency-based knowledge, scientific/artistic principles and hands-on fundamentals associated with the art of skin care. The curriculum provides a simulated salon environment which enables students to develop manipulative skills.

Course work includes instruction in all phases of professional Esthetics Technology, business/human relations, product knowledge, and other related topics.

Graduates should be prepared to take the North Carolina Cosmetology State Board Licensing Exam and upon passing may be licensed and qualify for employment in beauty and cosmetic/skin care salons, as a platform artist, and in related businesses.

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

The Mountain Tech Spa, an on-campus spa facility located in the Birch Building, provides practical experience for Esthetics students under the direction of College faculty.

Specific Program Requirements

1. General college admission requirements.
2. Completion of required immunizations by the first day of class, including annual TB test and first dose of Hepatitis B vaccine. Second Hepatitis B vaccine to be completed at least one month after the first dose. Third injection to be completed six months after the first dose.
3. Esthetics Technology students must clock out when leaving the laboratory. To earn hours, students must be physically present in the laboratory.

Esthetics Technology – Certificate (C55230)

Major Requirements		Credits
COS 119	Esthetics Concepts I	2
COS 120	Esthetics Salon I	6
COS 125	Esthetics Concepts II	2
COS 126	Esthetics Salon II	6
Total Credit Hours Required		16

Hotel and Restaurant Management

The Hotel and Restaurant Management curriculum prepares students to understand and apply the administrative and practical skills needed for supervisory and managerial positions in hotels, motels, resorts, inns, restaurants, institutions, and clubs.

Course work includes front office management, food preparation, guest services, sanitation, menu writing, quality management, purchasing, and other areas critical to the success of hospitality professionals.

Upon completion, graduates should qualify for supervisory or entry-level management positions in food and lodging, including front office, reservations, housekeeping, purchasing, dining room, and marketing. Opportunities are also available in the support areas of food and equipment sales.

Mountain Tech Lodge

An on-campus lodging facility, the Mountain Tech Lodge is operated and maintained by the Hotel and Restaurant Management students, and provides practical experience under the direction of College faculty.

Specific Program Requirements

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

Hotel and Restaurant Management Associate in Applied Science Degree (A25240)

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

General Education Requirements		Credits
ACA 115	Success and Study Skills	1
COM 231	Public Speaking	3
ENG 111	Expository Writing (or ENG 110)	3
MAT 115	Mathematical Models	3
PSY 150	General Psychology	3
	Humanities Elective	3

Major Requirements

		Credits
ACC 120	Principles of Financial Accounting	4
CIS 110	Introduction to Computers	3
COE 112	Co-op Work Experience I	2
CUL 110	Sanitation and Safety	2
CUL 110A	Sanitation and Safety Lab	1
CUL 130	Menu Design	2
CUL 135	Food and Beverage Service	2
CUL 135A	Food and Beverage Service Lab	1
CUL 142	Fundamentals of Food	5
HRM 110	Introduction to Hospitality	2
HRM 120	Front Office	3
HRM 120A	Front Office Lab	1
HRM 124	Introduction to Service Mgt.	3
HRM 130	Bed and Breakfast Management	2
HRM 135	Facilities Management	2
HRM 140	Hospitality Tourism Law	3
HRM 210	Meetings and Conventions	3
HRM 215	Restaurant Management	3
HRM 215A	Restaurant Management Lab	1
HRM 220	Food and Beverage Controls	3
HRM 225	Beverage Management	2
HRM 240	Hospitality Marketing	3
HRM 245	Hosp. Human Resources Mgt.	3
HRM 280	Hospitality Management Problems	3
Total Credit Hours Required		75

Bed and Breakfast/Inn Management Certificate* (C25240L1)

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

Specific Program Requirements

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

Major Requirements		Credits
ACC 120	Principles of Financial Accounting	4
CUL 110	Sanitation and Safety	2

CUL 160	Baking I	3
HRM 120	Front Office	3
HRM 120A	Front Office Lab	1
HRM 130	Bed and Breakfast Management	2
HRM 140	Hospitality Tourism Law (or HRM 210, or HRM 240)	3
Total Credit Hours Required		18

Hospitality Management Certificate (C25240L2)

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

Specific Program Requirements

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

Major Requirements		Credits
CUL 110	Sanitation and Safety	2
HRM 140	Hospitality Tourism Law	3
HRM 220	Food and Beverage Controls	3
HRM 240	Hospitality Marketing	3
HRM 245	Hosp. Human Resource Mgt.	3
Total Credit Hours Required		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 (A2512C)

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

General Education Requirements		Credits
ACA 115	Success and Study Skills	1
COM 231	Public Speaking	3
ECO 252	Principles of Macroeconomics	3
ENG 111	Expository Writing (or ENG 110)	3
MAT 115	Mathematical Models	3
	Humanities Elective	3

Major Requirements		Credits
ACC 120	Principles of Financial Accounting	4
ACC 140	Payroll Accounting	2
BUS 115	Business Law I	3
BUS 135	Principles of Supervision	3
BUS 137	Principles of Management	3
BUS 147	Business Insurance	3
BUS 151	People Skills	3
BUS 153	Human Resource Management	3
BUS 217	Employment Laws and Regulations	3
BUS 234	Training and Development	3
BUS 240	Business Ethics	3
BUS 256	Recruitment, Selection, and Personnel Planning	3
BUS 258	Compensation and Benefits	3
BUS 259	HRM Applications	3
CIS 110	Introduction to Computers	3
CTS 130	Spreadsheet	3
ECO 251	Principles of Microeconomics	3
MKT 120	Principles of Marketing	3
OST 136	Word Processing	3
	Elective*	3
Total Credit Hours Required		76

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

Human Resources Management Certificate (C2512CL1)

The Human Resources Management Certificate is designed to provide students with the basic knowledge and skills necessary to advance their skill set in the area of human resources management. Coursework includes topics related to compensation and benefits, training and development, and employment law. The Human Resources Management Certificate targets individuals already working in the HR field with the desire to expand their knowledge.

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

Major Requirements	Credits	NOS 130	Windows Single User	3
BUS 153 Human Resources Management	3	SEC 110	Security Concepts	3
BUS 217 Employment Law and Regulations	3	SEC 150	Secure Communication	3
BUS 234 Training and Development	3	SEC 160	Secure Administration I	3
BUS 256 Recruit Select and Per Plan	3	SEC 210	Intrusion Detection	3
BUS 258 Compensation and Benefits	3	SEC 220	Defense In-Depth	3
Total Credit Hours Required	15	SEC 289	Security Capstone Project	3
		Total Credit Hours Required		74

Information Systems Security

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

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

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

Information Systems Security Associate in Applied Science Degree (A25270)

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

General Education Requirements	Credits
ACA 115 Success and Study Skills	1
COM 120 Intro to Interpersonal Communication	3
ENG 111 Expository Writing	3
MAT 171 Precalculus Algebra	3
MAT 171A Precalculus Algebra Lab	1
Humanities/Fine Arts Elective	3
Social/Behavioral Science Elective	3

Major Requirements	Credits
BUS 110 Introduction to Business	3
CIS 110 Introduction to Computers	3
CIS 115 Intro to Programming and Logic	3
DBA 110 Database Concepts	3
NET 125 Networking Basics	3
NET 126 Routing Basics	3
NET 175 Wireless Technology	3
NET 225 Routing and Switching I	3
NET 226 Routing and Switching II	3
NOS 110 Operating System Concepts	3
NOS 120 Linux/UNIX Single User	3
NOS 220 Linux/UNIX Administration I	3

Manicuring/Nail Technology

The Manicuring/Nail Technology curriculum provides competency-based knowledge, scientific/artistic principles, and hands-on fundamentals associated with the nail technology industry. The curriculum provides a simulated salon environment which enables students to develop manipulative skills.

Course work includes instruction in all phases of professional nail technology, business/computer principles, product knowledge, and other related topics.

Graduates should be prepared to take the North Carolina Cosmetology State Board Licensing Exam and upon passing be licensed and qualify for employment in beauty and nail salons, as a platform artist, and in related businesses.

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

The Mountain Tech Spa, an on-campus spa facility located in the Birch Building, provides practical experience for Manicuring/Nail Technology students under the direction of College faculty.

Specific Program Requirements

1. General college admission requirements.
2. Completion of required immunizations by the first day of class, including annual TB test and first dose of Hepatitis B vaccine. Second Hepatitis B vaccine to be completed at least one month after the first dose. Third injection to be completed six months after the first dose.
3. Manicuring/Nail Technology students must clock out when leaving the laboratory. To earn hours, students must be physically present in the laboratory.

Manicuring/Nail Technology Certificate (C55400)

Major Requirements	Credit
COS 121 Manicure/Nail Technology I	6
COS 222 Manicure/Nail Technology II	6
Total Credit Hours Required	12

Marketing and Retailing

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

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

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

Marketing and Retailing Associate in Applied Science Degree (A2512F)

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

General Education Requirements		Credits
COM 231	Public Speaking	3
ECO 252	Principles of Macroeconomics	3
ENG 111	Expository Writing (or ENG 110)	3
MAT 115	Mathematical Models	3
	Humanities Elective	3

Major Requirements		Credits
ACC 120	Principles of Financial Accounting	4
ACC 121	Principles of Managerial Accounting	4
BUS 110	Introduction to Business	3
BUS 115	Business Law I	3
BUS 137	Principles of Management	3
CIS 110	Introduction to Computers	3
CTS 130	Spreadsheet	3
ECO 251	Principles of Microeconomics	3
MKT 120	Principles of Marketing	3
MKT 121	Retailing	3
MKT 122	Visual Merchandising	3
MKT 123	Fundamentals of Selling	3
MKT 220	Advertising and Sales Promotion	3
MKT 221	Consumer Behavior	3
MKT 224	International Marketing	3
MKT 225	Marketing Research	3
MKT 227	Marketing Applications	3
MKT 229	Special Events Production	2
	Electives*	6
Total Credit Hours Required		76

**Electives: BUS 147, BUS 153, BUS 225, BUS 240, BUS 260, BUS 270, CIS 165, ETR 210, ETR 220, ETR 240.*

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.

Major Requirements		Credits
MKT 120	Principles of Marketing	3
MKT 121	Retailing	3
MKT 122	Visual Merchandising	3
MKT 221	Consumer Behavior	3
Total Credit Hours Required		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)

Courses requiring a grade of “C” or better: CIS 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.

General Education Requirements		Credits
BIO 163	Basic Anatomy and Physiology	5
ENG 111	Expository Writing (or ENG 110)	3

Major Requirements		Credits
CIS 110	Introduction to Computers	3
OST 132	Keyboard Skill Building	2
OST 134	Text Entry and Formatting	3
OST 136	Word Processing	3
OST 141	Medical Terminology I - Medical Office	3
OST 142	Medical Terminology II -Medical Office	3
OST 148	Medical Coding, Billing, and Insurance	3
OST 149	Medical Legal Issues	3
OST 164	Text Editing Applications	3
OST 184	Records Management	3
OST 243	Med Office Simulation	3
OST 289	Administrative Office Mgt	3
	Major Elective*	3
Total Credit Hours Required		46

**Major Electives: CTS 130, DBA 110, OST 201, OST 233, SPA 120, or OST 247 and OST 248 (requiring departmental approval). The semester in which the major elective is taken may vary.*

Medical Office Administration Medical Coding Certificate (C25310L1) (Evening only)

The Medical Coding Certificate program will prepare individuals for entry-level employment opportunities in the allied health specialty of medical coding. Requirements for the certificate include successful completion of the listed courses and the following documented prerequisite office skills:

Pass a keyboarding and basic computer skills test requiring:

- Keyboarding skill level of 25 words per minute for five minutes (or OST 131)
- Theory and hands-on skill using Microsoft Office software (Word, Excel, PowerPoint) and Windows with 80 percent accuracy (or CIS 110 or CIS 111).

Major Requirements		Credits
BIO 163	Basic Anatomy and Physiology	5
OST 141	Medical Terminology I - Medical Office	3
OST 142	Medical Terminology II - Medical Office	3
OST 148	Medical Coding, Billing, and Insurance	3
OST 247	CPT Coding in the Medical Office	2
OST 248	Diagnostic Coding	2
Total Credit Hours Required		18

Medical Transcription

The Medical Transcription curriculum prepares individuals to become medical language specialists who interpret and transcribe dictation by physicians and other healthcare professionals in order to document patient care and facilitate delivery of healthcare services.

Students will gain extensive knowledge of medical terminology, pharmacology, human diseases, diagnostic studies, surgical procedures, and laboratory procedures. In addition to word processing skill and knowledge of voice processing equipment, students must master English grammar, spelling, and proofreading.

Graduates should qualify for employment in hospitals, medical clinics, doctors' offices, private transcription businesses, research facilities, insurance companies, and publishing companies. After acquiring work experience, individuals can apply to the American Association for Medical Transcription to become Certified Medical Transcriptionists.

Note: The American Association for Medical Transcription is now known as the Association for Healthcare Documentation Integrity.

Medical Transcription - Diploma (D25320)

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.

General Education Requirements		Credits
BIO 163	Basic Anatomy and Physiology	5
ENG 111	Expository Writing (or ENG 110)	3

Major Requirements		Credits
CIS 110	Introduction to Computers	3
COE 111	Co-op Work Experience I*	1
OST 132	Keyboard Skill Building	2
OST 134	Text Entry and Formatting	3
OST 136	Word Processing	3
OST 141	Medical Terminology I - Medical Office	3
OST 142	Medical Terminology II - Medical Office	3
OST 149	Medical Legal Issues	3
OST 164	Text Editing Applications	3
OST 184	Records Management	3
OST 201	Medical Transcription I	4
OST 202	Medical Transcription II	4
OST 286	Professional Development	3
Total Credit Hours Required		46

* A co-op work experience is an additional requirement of the MT curriculum. Students will be expected to complete the co-op during daytime hours Monday - Friday.

Networking Technology

The Networking Technology curriculum prepares individuals for employment supporting network infrastructure environments. Students will learn how to use technologies to provide reliable transmission and delivery of data, voice, image, and video communications in business, industry, and education.

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

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

Networking Technology Associate in Applied Science Degree (A25340)

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

General Education Requirements		Credits
ACA 115	Success and Study Skills	1
COM 120	Intro to Interpersonal Communication	3
ENG 111	Expository Writing	3
MAT 171	Precalculus Algebra	3
MAT 171A	Precalculus Algebra Lab	1
	Humanities/Fine Arts Elective	3
	Social/Behavioral Science Elective	3

Major Requirements		Credits
BUS 110	Introduction to Business	3
CIS 110	Introduction to Computers	3
CIS 115	Intro to Programming and Logic	3
CTS 120	Hardware/Software Support	3
DBA 110	Database Concepts	3
NET 125	Networking Basics	3
NET 126	Routing Basics	3
NET 225	Routing and Switching I	3
NET 226	Routing and Switching II	3
NET 289	Networking Project	3
NOS 110	Operating System Concepts	3
NOS 120	Linux/UNIX Single User	3
NOS 130	Windows Single User	3
NOS 220	Linux/UNIX Admin I	3

NOS 230	Windows Admin I	3
SEC 110	Security Concepts	3
	Major Elective*	9
Total Credit Hours Required		74

*Electives: NET 175, NET 270, NET 272, NOS 221, NOS 222, NOS 231, NOS 232, WEB 230

Networking Technology Basic Network Administration Certificate (C25340L3)

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

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

Major Requirements		Credits
NET 125	Networking Basics	3
NOS 110	Operating System Concepts	3
NOS 120	Linux/UNIX Single User	3
NOS 130	Windows Single User	3
NOS 220	Linux/UNIX Admin 1	3
NOS 230	Windows Admin 1	3
Total Credit Hours Required		18

Networking Technology CCNA Preparation Certificate (C25340L1)

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

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

Major Requirements		Credits
NET 125	Networking Basics	3
NET 126	Routing Basics	3
NET 225	Routing and Switching I	3
NET 226	Routing and Switching II	3
Total Credit Hours Required		12

Office Administration

The Office Administration curriculum prepares individuals for positions in administrative support careers. It equips office professionals to respond to the demands of a dynamic computerized workplace.

Students will complete courses designed to develop proficiency in the use of integrated software, oral and written communication, analysis and coordination of office duties and systems, and other support topics. Emphasis is placed on non-technical as well as technical skills.

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

Office Administration Associate in Applied Science Degree (A25370)

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

General Education Requirements		Credits
ACA 115	Success and Study Skills	1
COM 231	Public Speaking	3
ENG 111	Expository Writing (or ENG 110)	3
MAT 115	Mathematical Models	3
PSY 150	General Psychology	3
	Humanities Elective	3

Major Requirements		Credits
ACC 120	Principles of Financial Accounting	4
ACC 140	Payroll Accounting	2
BUS 260	Business Communications	3
CIS 110	Introduction to Computers	3
CTS 130	Spreadsheet	3
CTS 217	Computer Training/Support	3
DBA 110	Database Concepts	3
OST 131	Keyboarding	2
OST 132	Keyboard Skill Building	2
OST 134	Text Entry and Formatting	3
OST 136	Word Processing	3
OST 137	Office Systems Applications	3

OST 164	Text Editing Applications	3
OST 184	Records Management	3
OST 233	Office Publications Design	3
OST 286	Professional Development	3
OST 289	Administrative Office Mgt	3
WEB 115	Web Markup and Scripting	3
	Electives*	8
Total Credit Hours Required		76

**Electives:* ACC 150, BUS 110, BUS 115, BUS 137, BUS 153, BUS 230, BUS 240, CIS 165, NET 110, SPA 120

Office Administration Diploma (D25370)

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

General Education Requirements		Credits
COM 231	Public Speaking	3
ENG 111	Expository Writing	3

Major Requirements		Credits
ACC 120	Principles of Financial Accounting	4
ACC 140	Payroll Accounting	2
CIS 110	Introduction to Computers	3
CTS 130	Spreadsheet	3
OST 131	Keyboarding	2
OST 132	Keyboard Skill Building	2
OST 134	Text Entry and Formatting	3
OST 136	Word Processing	3
OST 164	Text Editing Applications	3
OST 184	Records Management	3
OST 286	Professional Development	3
OST 289	Administrative Office Mgt	3
	Electives*	3
Total Credit Hours Required		43

**Electives:* ACC 150, BUS 110, BUS 115, BUS 137, BUS 153, BUS 230, CTS 125, DBA 110, NET 110, SPA 120

Office Administration Word Processing/ Desktop Publishing Certificate (C25370L1)

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

Major Requirements		Credits
CIS 110	Introduction to Computers	3
CIS 165	Desktop Publishing I	3
OST 131	Keyboarding (or tested keyboarding proficiency)	2
OST 134	Text Entry and Formatting	3
OST 136	Word Processing	3
Total Credit Hours Required		14

Public Administration (Pending Approval)

Public Administration is a concentration under the curriculum title of Business Administration. This curriculum prepares students for entry into management positions in state/local governments and not-for-profit organizations, provides education for current employees, and informs citizens of governmental functions.

Course work includes study and practical application in personnel administration, decision making, ethics, organizational theories, and budgetary and other governmental issues. Emphasis is placed on building analytical skills, stimulating moral imagination, and recognizing the discretionary power of the administrator's role.

Through acquisition of knowledge and skills, individuals should be able to perform governmental activities. By developing personal competencies and qualities, graduates will be eligible for employment in the public administration profession.

Real Estate Appraisal

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

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

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

Notice

For Certified Residential: 200 hours of qualifying education are needed. College level courses required are as follows: Twenty-one semester credit hours covering the following subject matter courses: English Composition, Principles of Economics (Micro or Macro), Finance, Algebra, Geometry or higher mathematics, Statistics, Introduction to Computers - Word Processing/Spreadsheets, and Business or Real Estate Law. In lieu of the required courses, an Associate degree will qualify.

For Certified General: 300 hours of qualifying education are needed. College level courses required are as follows: thirty semester credit hours covering the following subject matter courses: English Composition, Micro Economics, Macro Economics, Finance, Algebra, Geometry or higher mathematics, Statistics, Introduction to Computers - Word Processing/Spreadsheets, Business or Real Estate Law, and two elective courses in accounting, geography, ag-economics, business management, or real estate. In lieu of the required courses, a Bachelors degree will qualify.

Real Estate Appraisal Certificate (C25420L1)

Major Requirements		Credits
REA 210	Site Value Cost Approach	1
REA 212	Sales Comparison & Income	2
REA 213	Appraisal Report Writing	1
REA 214	Basic Appraisal Principle	2
REA 215	Basic Appraisal Procedure	2
REA 217	National USPAP	1
REA 219	Residential Market Analysis	1
REA 220	Statistics and Finance	1
REA 240	Advanced Residential Apps	1
REA 280	Appraisal Emerging Issues	2
Total Credit Hours Required		14

Real Estate Licensing

The Real Estate Licensing curriculum provides licensing education required by the North Carolina Real Estate Commission for students preparing to take the real estate license examination and for provisional brokers that are seeking removal of the provisional status.

Course work includes the practices and principles of real estate, broker relationships as they apply to customers, sellers and buyers, contract procedures, fair housing and real estate methodology. Course work also includes professional development opportunities.

Graduates who have passed the real estate license examination and obtained a real estate provisional broker license should then qualify for removal of the provisional status and be able to provide basic, residential real estate services as a broker affiliated with a real estate brokerage firm.

A student must secure his/her provisional broker license before proceeding into the post-licensure courses and must complete the three mandatory post-licensing courses within three years of licensure in order to avoid cancellation of his/her license.

Real Estate Licensing Certificate (C25480)

Major Requirements		Credits
RLS 112	Broker Prelicensing	5
RLS 113	Real Estate Mathematics (or RLS 120 Real Estate Practice)	2
RLS 121	Broker Relationships	2
RLS 122	Contracts and Closing	2
RLS 123	Select Real Estate Issues	2
Total Credit Hours Required		13

Resort and Spa Management

The Resort and Spa Management Certificate is designed for individuals with experience in the hospitality industry and have the desire to advance to resort and spa management. This program combines administrative and practical skills needed for managerial positions in resorts and spa related settings.

The Mountain Tech Spa, an on-campus spa facility located in the Birch Building, provides practical experience for Resort and Spa Management students under the direction of College faculty.

Resort and Spa Management Certificate (C55410L1)

Major Requirements	Credits
HRM 245 Hosp. Human Resource Mgt.	3
RSM 110 Intro to Resort & Spa Ind	3
RSM 240 Resort and Spa Marketing	3
RSM 245 Resort and Spa Law	3
Total Credit Hours Required	12

Therapeutic Massage

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

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

Employment opportunities in North Carolina may be found in hospitals, rehabilitation centers, health departments, home health, medical offices, nursing homes, spas, health and sports clubs, and private practice.

The Mountain Tech Spa, an on-campus spa facility located in the Birch Building, provides practical experience for Therapeutic Massage students under the direction of College faculty.

Specific Program Requirements

1. General college admission requirements.
2. Current CPR certification is required by the end of the first semester of study and must be maintained throughout the program.
3. Completion of the Student Medical Form documenting immunization history, medical history, and assessment of the applicant's physical and emotional ability to participate in the activities in a clinical setting.

4. Completion of required immunizations by the first day of class, including annual TB test and first dose of Hepatitis B vaccine. Second Hepatitis B vaccine to be completed at least one month after the first dose. Third injection to be completed six months after the first dose.
5. Clinical facilities may require a criminal background check and/or drug testing prior to participation in the clinical/co-op component. In addition, national and/or state licensure boards **may prohibit** eligibility for licensure based on criminal records. Licensure is required to practice as a Massage Therapist in North Carolina. Please refer to the North Carolina Massage and Bodywork Therapy Practice Act, ARTICLE 36 of CHAPTER 90 of the NORTH CAROLINA GENERAL STATUTES (90-629.1) **www.bmbt.org**.
6. Interview with Department Chair of Spa Therapies and Operations.

Therapeutic Massage Associate in Applied Science (A45750)

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

General Education Requirements	Credits
ACA 115 Success and Study Skills	1
BIO 168 Anatomy and Physiology I	4
BIO 169 Anatomy and Physiology II	4
COM 120 Intro to Interpersonal Communication	3
ENG 111 Expository Writing (or ENG 110)	3
PSY 275 Health Psychology	3
Humanities Elective	3

Major Requirements	Credits
BIO 271 Pathophysiology	3
BUS 137 Principles of Management	3
CIS 110 Introduction to Computers	3
COE 111 Co-Op Work Experience I	1
MTH 110 Fundamentals of Massage	10
MTH 120 Therapeutic Massage Applications	10
MTH 121 Clinical Supplement I	1
MTH 125 Ethics of Massage	2
MTH 210 Advanced Skills of Massage Therapy	8
MTH 220 Outcome Based Massage	7
MTH 221 Clinical Supplement II	2
PSY 150 General Psychology	3
Total Credit Hours Required	74

Therapeutic Massage – Diploma (D45750)

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

General Education Requirements

		Credits
ACA 115	Success and Study Skills	1
BIO 168	Anatomy and Physiology I	4
BIO 169	Anatomy and Physiology II	4
ENG 111	Expository Writing (or ENG 110)	3
PSY 275	Health Psychology	3

Major Requirements

		Credits
CIS 110	Introduction to Computers	3
MTH 110	Fundamentals of Massage	10
MTH 120	Therapeutic Massage Applications	10
MTH 121	Clinical Supplement I	1
MTH 125	Ethics of Massage	2
PSY 150	General Psychology	3
Total Credit Hours Required		44

Web Technologies

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

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

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

Web Technologies Associate in Applied Science (A25290)

Courses requiring a grade of “C” or better: BUS, CIS, CSC, DBA, GIS, NET, NOS, SEC, WEB

General Education Requirements

		Credits
ACA 115	Success and Study Skills	1
ENG 111	Expository Writing	3
ENG 114	Prof. Research and Reporting	3
MAT 115	Mathematical Models (or MAT 171)	3
	Social/Behavioral Science Elective	3
	Humanities Elective	3

Major Requirements

		Credits
CIS 110	Introduction to Computers	3
CIS 115	Intro to Programming and Logic	3
CTS 115	Information System Business Concepts	3
DBA 110	Database Concepts	3
DBA 120	Database Programming I	3
NET 110	Networking Concepts	3
NOS 110	Operating Systems Concepts	3
NOS 120	Linux/UNIX Single User	3
SEC 110	Security Concepts	3
WEB 110	Internet/Web Fundamentals	3
WEB 115	Web Markup and Scripting	3
WEB 120	Introduction to Internet Multimedia	3
WEB 140	Web Development Tools	3
WEB 182	PHP Programming	3
WEB 210	Web Design	3
WEB 230	Implementing Web Serv	3
WEB 250	Database Driven Websites	3
WEB 289	Internet Technologies Project	3
	Electives*	6
Total Credit Hours Required		76

*Electives: CSC 134, CSC 139, CSC 151, DBA 210, GIS 111, GIS 121, NOS 220, NOS 221, WEB 186, WEB 215

Web Technologies Web Designer Certificate (C25290L1)

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

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

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

Major Requirements

		Credits
WEB 110	Internet/Web Fundamentals	3
WEB 115	Web Markup and Scripting	3
WEB 120	Introduction to Internet Multimedia	3
WEB 140	Web Development Tools	3
WEB 210	Web Design	3
Total Credit Hours Required		15

Web Technologies Web Programmer Certificate (C25290L2)

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

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

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

Major Requirements		Credits
DBA 120	Database Programming I	3
WEB 115	Web Markup and Scripting	3
WEB 182	PHP Programming	3
WEB 250	Database Driven Websites	3
	Electives*	3
Total Credit Hours Required		15

*Electives: CSC 151, WEB 186, WEB 215

Engineering and Applied Technology

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

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

For students interested in starting or managing their own business, the Student Business Incubator is one of many programs and services offered by the A-B Tech Small Business Center/Business Incubator.

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
Sustainability Technologies
Welding Technology

Diplomas Awarded

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

Certificates

Air Conditioning, Heating and Refrigeration Technology - Basic
Air Conditioning, Heating and Refrigeration Technology - Intermediate
Air Conditioning, Heating and Refrigeration Technology - Advanced
Automotive Systems Technology - Basic Automotive Repair
Automotive Systems Technology - Drive Trains
Automotive Systems Technology - Electrical/Electronics
Automotive Systems Technology - Under-Car
Carpentry - Basic Carpentry
Carpentry - Basic Cabinetry
Computer Engineering Technology - Personal Computer and Network Maintenance
Computer-Aided Drafting Technology - Computer-Aided Drafting
Computer-Aided Drafting Technology - Architectural Drafting
Computer-Aided Drafting Technology - Landscape Architecture Drafting
Construction Management Technology
Electrical/Electronics Technology - Electrical Wiring
Electrical/Electronics Technology - Instrumentation and Control
Electrical/Electronics Technology - Building Automation & Controls
Heavy Equipment and Transport Technology
Industrial Systems Technology - Basic Maintenance
Industrial Systems Technology - Metal Fabrication
Machining Technology - Basic
Machining Technology - CNC Programming
Machining Technology - Advanced CNC Programming
Machining Technology - Fundamentals of Metals
Mechanical Engineering Technology - Plastic Injection Molding
Mechanical Engineering Technology - Mechanical Drafting
Mechanical Engineering Technology - Quality & cGMP
Surveying Technology - Civil/Surveying CAD
Surveying Technology - Surveying Fundamentals
Welding Technology - Basic Welding I
Welding Technology - Ornamental Ironwork

Air Conditioning, Heating and Refrigeration Technology

The Air Conditioning, Heating, and Refrigeration Technology curriculum, provides the basic knowledge to develop skills necessary to work with residential and light commercial systems.

Topics include mechanical refrigeration, heating and cooling theory, electricity, controls, and safety. The diploma program covers air conditioning, furnaces, heat pumps, tools and instruments. In addition, the AAS degree covers residential building codes, residential system sizing, and advanced comfort systems.

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

Please note: The Intermediate and Advanced Certificates include mechanical & fuel gas codes, residential system sizing, and advanced comfort systems. The AAS Degree is not offered, however Students who complete the Air Conditioning, Heating, and Refrigeration Diploma may be interested in completing an Associates Degree in either Construction Management or Industrial Systems. Some of the courses taken in the diploma may apply to those degrees.

Air Conditioning, Heating and Refrigeration Technology Diploma (D35100)

Courses requiring a grade of "C" or better: AHR, and ELC 132

General Education Requirements		Credits
COM 120	Interpersonal Communication (or COM 231)	3
PHY 121	Applied Physics I	4
Major Requirements		Credits
AHR 110	Introduction to Refrigeration	5
AHR 111	Introduction to Electricity	3
AHR 112	Heating	4
AHR 113	Comfort Cooling	4
AHR 114	Heat Pump Technology	4
AHR 125	HVAC Electronics	2
AHR 130	HVAC Controls	3
AHR 160	Refrigerant Certification	1
AHR 170	Heating Lab (or AHR 120)	1
AHR 172	Heat Pump Lab (or AHR 115)	1
AHR 210	Residential Building Code (or AHR 211 or AHR 212 or ALT 120)	2

BPR 135	Schematics and Diagrams	2
CIS 113	Computer Basics	1
ELC 132	Electrical Drawings	2
WLD 113	Soldering and Brazing	2
Total Credit Hours Required		44

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.

Major Requirements		Credits
AHR 110	Introduction to Refrigeration	5
AHR 111	Introduction to Electricity	3
AHR 112	Heating	4
AHR 170	Heating Lab (or AHR 120)	1
ELC 132	Electrical Drawings	2
Total Credit Hours Required		15

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.

Major Requirements		Credits
AHR 113	Introduction to Cooling	4
AHR 125	HVAC Electronics	2
AHR 130	HVAC Controls	3
AHR 160	Refrigerant Certification	1
BPR 135	Schematics and Diagrams	2
WLD 113	Soldering and Brazing	2
Total Credit Hours Required		14

Air Conditioning, Heating and Refrigeration Technology Advanced Certificate (C35100L3)

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.

Major Requirements	Credits
AHR 114 Heat Pump Technology	4
AHR 172 Heat Pump Lab	1
AHR 210 Residential Building Code	2
AHR 211 Residential Systems Design	3
AHR 212A Advanced Comfort Systems	2
AHR 212B Advanced Comfort Systems	2
Total Credit Hours Required	14

Automotive Systems Technology

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

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

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

Automotive Systems Technology Associate in Applied Science Degree (A60160)

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

General Education Requirements	Credits
ACA 115 Success and Study Skills	1
COM 120 Intro to Interpersonal Communication (or COM 231 or ENG 114)	3
ENG 110 Freshman Composition (or ENG 111)	3
PHY 121 Applied Physics I (or PHY 110/110A, or CHM 121/121A)	4
Humanities/Fine Arts Elective	3
Social/Behavioral Science Elective	3

Major Requirements	Credits
AUT 110 Intro to Automotive Technology	3
AUT 116 Engine Repair	3
AUT 116A Engine Repair Lab	1
AUT 141 Suspension and Steering Systems	3
AUT 141A Suspension and Steering Sys. Lab	1
AUT 151 Brake Systems	3
AUT 151A Brake Systems Lab	1
AUT 161 Basic Automotive Electricity	5
AUT 163 Advanced Automotive Electricity	3
AUT 171 Auto Climate Control	4
AUT 181 Engine Performance I	3
AUT 221 Automotive Transmissions	3
AUT 221A Automotive Transmissions Lab	1
AUT 231 Manual Trans/Axles/D. Trains	3
AUT 231A Manual Trans/Axles/D. Trains Lab	1
AUT 281 Advanced Engine Performance	3
AUT 285 Intro to Alternative Fuels	3
CIS 110 Introduction to Computers	3
COE 112 Co-operative Work Experience	2
COE 122 Co-operative Work Experience	2
Total Credit Hours Required	68

Automotive Systems Technology Diploma (D60160)

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

General Education Requirements	Credits
ACA 115 Success and Study Skills	1
ENG 110 Freshman Composition (or ENG 111)	3
PHY 121 Applied Physics I (or PHY 110/110A, or CHM 121/121A)	4
Major Requirements	Credits
AUT 110 Intro to Automotive Technology	3
AUT 116 Engine Repair	3
AUT 116A Engine Repair Lab	1
AUT 141 Suspension and Steering Systems	3
AUT 141A Suspension and Steering Sys. Lab	1
AUT 151 Brake Systems	3
AUT 151A Brake Systems Lab	1
AUT 161 Basic Automotive Electricity	5
AUT 163 Advanced Automotive Electricity	3
AUT 171 Auto Climate Control	4
AUT 181 Engine Performance I	3
AUT 281 Advanced Engine Performance	3
AUT 285 Intro to Alternative Fuels	3
Total Credit Hours Required	44

Automotive Systems Technology Basic Automotive Repair Certificate (C60160L5)

Major Requirements		Credits
AUT 110	Intro to Automotive Technology	3
AUT 151	Brake Systems	3
AUT 151A	Brake Systems Lab	1
AUT 161	Basic Automotive Electricity	5
AUT 163	Advanced Automotive Electricity	3
Total Credit Hours Required		15

Automotive Systems Technology Drive-Trains Certificate (C60160L2)

Major Requirements		Credits
AUT 110	Intro to Automotive Technology	3
AUT 116	Engine Repair	3
AUT 116A	Engine Repair Lab	1
AUT 221	Automotive Transmissions	3
AUT 221A	Automotive Transmissions Lab	1
AUT 231	Manual Trans/Axles/D. Trains	3
AUT 231A	Manual Trans/Axles/D. Trains Lab	1
Total Credit Hours Required		15

Automotive Systems Technology Electrical/Electronics Certificate (C60160L3)

Major Requirements		Credits
AUT 110	Intro to Automotive Technology	3
AUT 161	Basic Automotive Electricity	5
AUT 163	Advanced Automotive Electricity	3
AUT 281	Advanced Engine Performance	3
AUT 285	Intro to Alternative Fuels	3
Total Credit Hours Required		17

Automotive Systems Technology Under-Car Certificate (C60160L4)

Major Requirements		Credits
AUT 110	Introduction to Automotive	3
AUT 141	Suspension and Steering Systems	3
AUT 141A	Suspension and Steering Sys. Lab	1
AUT 151	Brake Systems	3
AUT 152	Brake Systems Lab	1
AUT 231	Manual Trans/Axles/D. Trains	3
AUT 231A	Manual Trans/Axles/D. Trains Lab	1
Total Credit Hours Required		15

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)

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

General Education Requirements		Credits
ENG 110	Freshman Composition (or ENG 111, ENG 102, or COM 120)	3
MAT 101	Applied Mathematics I (or PHY 121, or MAT 121, or PHY 110/110A)	3

Major Requirements		Credits
ARC 111	Intro to Arch Technology (or CAR 114)	3
BPR 130	Blueprint Reading/Construction	2
CAB 111	Cabinetmaking I (or CAB 119)	7
CAR 110	Introduction to Carpentry	2
CAR 111	Carpentry I	8
CAR 112	Carpentry II	8
CAR 113	Carpentry III	6
CAR 115	Residential Planning/Estimating	3
SST 110	Intro to Sustainability	3
Total Credit Hours Required		48

Basic Carpentry Certificate (C35180L1)

Major Requirements		Credits
BPR 130	Blueprint Reading/Construction	2
CAR 110	Introduction to Carpentry	2
CAR 111	Carpentry I (or CAR 111AB & CAR 111BB)	8
CAR 114	Residential Building Codes	3
CAR 115	Residential Planning and Estimating	3
Total Credit Hours Required		18

Basic Cabinetry Certificate (Evenings) (C35180L2)

Major Requirements

	Credits
ARC 111 Intro to Arch Technology	3
CAB 111 Cabinetmaking I (or CAB 111AB & CAB 111BB)	7
CAB 119 Cabinetry/Millworking (or CAB 119AB & CAB 119BB)	7
Total Credit Hours Required	17

Major Requirements

	Credits
CIV 110 Statics/Strength of Materials (or MEC 250)	4
CIV 111 Soils and Foundations	3
CIV 125 Civil/Surveying CAD	3
CIV 210 Engineering Materials	2
CIV 211 Hydraulics and Hydrology	3
CIV 212 Environmental Planning	3
CIV 215 Highway Technology	2
CIV 220 Basic Structural Concepts	2
CIV 221 Steel and Timber Design	3
CIV 222 Reinforced Concrete	3
CIV 230 Construction Estimating	3
CIV 240 Project Management	3
CIV 250 Civil Eng Tech Project	2
EGR 115 Intro to Technology	3
EGR 125 Application Software for Tech (or DFT 151)	2
SRV 110 Surveying I	4
SRV 111 Surveying II	4
Total Credit Hours Required	65

Civil Engineering Technology

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

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

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

Civil Engineering Technology Associate in Applied Science Degree (A40140)

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

General Education Requirements

	Credits
ACA 115 Success and Study Skills (or EGR 110 or EGR 150)	1
ENG 111 Expository Writing	3
ENG 114 Prof. Research and Reporting (or COM 120, or COM 231)	3
MAT 121 Algebra/Trigonometry I (or MAT171/171A)	3
Humanities/Fine Arts Elective	3
Social/Behavioral Sciences Elective	3

Computer-Aided Drafting Technology

This curriculum prepares individuals for employment as computer-aided drafting technicians. Graduates should be prepared for a wide variety of jobs that involve managing the hardware and software of a CAD system. Emphasis is placed on developing the student's ability to interface with computer hardware and software in a CAD office.

Students will use CAD workstations to create and manage two and three-dimensional models for a wide variety of fields. Students will link CAD documents to other applications such as a database, GIS maps, spreadsheets, word processing, or CNC machining systems. Course work includes the study of drafting, computer hardware and operating systems, two- and three-dimensional computer models, solid modeling, rendering, and engineering systems.

Graduates should qualify for CAD jobs in a wide variety of fields that use computer-aided drafting technology. Job titles include CAD technician, CAD manager, CAD drafter and detail drafter.

Please note: The CAD program also includes course work in creating architectural and landscape designs, with an emphasis on sustainable practices in these areas.

Computer-Aided Drafting Technology Associate in Applied Science Degree (A50150)

Courses requiring a grade of "C" or better: ACA, ARC, ART, CET, CIS, CST, DFT, EGR, GIS, LAR, MEC and SRV

General Education Requirements		Credits
COM 231	Public Speaking (or ENG 114)	3
ENG 111	Expository Writing	3
MAT 121	Algebra/Trigonometry I (or MAT 171/171A)	3
	Humanities/Fine Arts Elective	3
	Social/Behavioral Science Elective	3
Major Requirements		Credits
ACA 115	Success and Study Skills (or EGR 110)	1
ARC 111	Intro to Architecture Technology	3
ARC 112	Construction Materials and Methods	4
ARC 113	Residential Architecture Technology	3
ARC 230	Environmental Systems	4
CET 111	Computer Upgrade/Repair I	3
CIV 125	Civil/Surveying CAD	3
CST 211	Construction Surveying (or SRV 110)	3
DFT 151	CAD I	3
DFT 152	CAD II	3
DFT 153	CAD III	3
DFT 154	Intro to Solid Modeling	3
DFT 251	Customizing CAD Software	3

DFT 253	CAD Data Management	3
DFT 259	CAD Project	3
EGR 125	Application Software for Technicians (or CIS 110, or CIS 111)	2
LAR 210	Prin of Landscape Arch	2
LAR 230	Prin of Exterior Planting	4
LAR 242	Planning and Environment	3
MEC 110	Introduction to CAD/CAM	2
	Elective*	1-3
Total Credit Hours Required		74-76

**Electives: ARC 131, ARC 210, ARC 240, ARC 261, ART 121, ART 171, CET 211, COE 111CA, DFT 170, DFT 189, GIS 111*

Computer-Aided Drafting Technology Certificate (C50150L1)

The purpose of this certificate program is to provide basic computer-aided drafting (CAD) skills. Students learn CAD techniques for producing 2D and 3D technical drawings using different CAD software programs. Accurate and efficient use of the computer and software are emphasized.

Major Requirements		Credits
DFT 151	CAD I	3
DFT 152	CAD II	3
DFT 153	CAD III (or DFT 154)	3
DFT 251	Customizing CAD Software (or CIV 125 or DFT 189)	3
Total Credit Hours Required		12

Architectural Drafting Certificate (C50150L2)

The purpose of this certificate program is to provide basic architectural drafting skills. Students will produce residential construction drawings including floor plans, foundation plans, typical wall sections, elevations, and details following standard practices. Topics include drafting practices, 2D CAD software, traditional and sustainable building methods, and building materials.

Major Requirements		Credits
ARC 111	Intro to Architecture Technology	3
DFT 151	CAD I	3
ARC 112	Construction Materials and Methods	4
ARC 113	Residential Architecture Technology	3
Total Credit Hours Required		13

Landscape Architecture Drafting Certificate (C50150L3)

The purpose of this certificate program is to provide basic drafting and planning skills for sustainable landscape design. Students will study regenerative strategies for landscape planning. They will also construct landscape architecture drawings using 2D and 3D CAD programs. Topics include drafting practices, 2D and 3D CAD software, sustainable practices for landscape design, and plant selection.

Major Requirements

	Credit
CIV 125 Civil/Surveying CAD	3
DFT 151 CAD I	3
LAR 210 Principles of Landscape Architecture	2
LAR 230 Principles of Exterior Planting	4
LAR 242 Planning and Environment	3
Total Credit Hours Required	15

Computer Engineering Technology

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

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

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

Computer Engineering Technology Associate in Applied Science Degree (A40160)

Courses requiring a grade of "C" or better: CET, CSC, EGR, ELC, ELN, MAT and PHY

General Education Requirements

	Credits
ENG 111 Expository Writing	3
ENG 114 Professional Research and Reporting	3
MAT 121 Algebra/Trigonometry I (or MAT 171/171A)**	3
MAT 122 Algebra/Trigonometry II (or MAT 172/172A)**	3
Humanities Elective	3
Social/Behavioral Science Elective	3

Major Requirements

	Credits
CET 111 Computer Upgrade/Repair I	3
CET 211 Computer Upgrade/Repair II	3
CET 212 Integrated Manufacturing Systems	2
CSC 143 Object-Oriented Programming (or CET 161)	3
EGR 110 Introduction to Engineering	2
EGR 125 Application Software for Technology	2
ELC 117 Motors and Controls	4
ELC 128 Introduction to PLC	3
ELC 138 DC Circuit Analysis	3
ELC 139 AC Circuit Analysis	3
ELN 133 Digital Electronics	4
ELN 137 Electrical Devices & Circuits	5
ELN 154 Introduction to Data Communications (or ELN 234)	3
ELN 232 Introduction to Microprocessors	4
ELN 237 Local Area Networks (1st minimester)	3
ELN 238 Advanced LANs (2nd minimester)	3
PHY 131 Physics-Mechanics (or PHY 151)**	4
Elective*	3
Total Credit Hours Required	75

**Electives: CET 125, CHM 135, ELC 133, ELC 213, ELC 228, ELC 233, ELN 133A, ELN 150, EGR 285, MAT 151/MAT 151A, MAT 271, COE 112/COE 115.*

***Recommended courses for students seeking transfer for bachelor's degree in engineering technology.*

Computer Engineering Technology Personal Computer and Network Maintenance Certificate (C40160L1)

This Training program provides the individual the theory and hands-on experience to become a PC specialist capable of performing maintenance and upgrades on all types of personal computer systems. This program combines the theory of computer and network operation with the practical skills necessary for efficient diagnosis and repair work in the field. The program provides the foundation for further study of networks and new computer-based products.

Major Requirements

	Credits
CET 111 Computer Upgrade/Repair I	3
CET 125 Voice and Data Cabling	3
CET 211 Computer Upgrade/Repair II	3
ELN 237 Local Area Networks	3
ELN 238 Advanced LAN	3
Total Credit Hours Required	15

Construction Management Technology

This curriculum is designed to prepare individuals for careers in the construction management field. Such positions may include project manager, superintendent, estimator, or foreman.

Course work includes safety, planning, scheduling, cost control, productivity, human relations, estimating, and building codes. Students will also gain proficiency in specific construction-related skills.

Graduates should qualify for entry-level positions in the field of construction management.

Construction Management Technology Associate in Applied Science – Evening Schedule (A35190)

Courses requiring a grade of "C" or better: ARC, BPR, CIS, CIV, CMT, COE, and SPA

General Education Requirements		Credit
ACA 115	Success and Study Skills (or EGR 110)	1
ENG 111	Expository Writing (or ENG 110)	3
ENG 114	Professional Research and Reporting (or COM 120, or COM 231)	3
MAT 115	Mathematical Models** (or MAT 121, or PHY 121)	3
	Humanities/Fine Arts Elective	3
	Social/Behavioral Sciences Elective	3

Major Requirements		Credits
ACC 120	Principles of Accounting I	4
ARC 112	Construction Materials and Methods	4
BPR 130	Blueprint Reading/Construction	2
CAR 115	Residential Planning/Estimating	3
CIS 111	Introduction to Computers (or CIS 110, or EGR 125)	2
CIV 230	Construction Estimating	3
CMT 210	Professional Construction Supervision	3
CMT 212	Total Safety Performance	3
CMT 214	Planning and Scheduling	3
CMT 216	Costs and Productivity	3
CMT 218	Human Relations Issues	3
COE 111	Co-op Work Experience	1
SPA 120	Spanish for the Workplace*	3
SST 140	Green Building Concepts	2
	Electives	14
	Estimation/Code Elective	2
Total Credit Hours Required		71

**Students who meet the requirements may substitute SPA 111 for SPA 120 with department chair approval.*

***Students who meet the requirements may substitute MAT 171/171A or MAT 151/151A for the math requirement.*

Electives:

At least 14 semester hours credit from one of the following areas of specialization (unless approved by the department chair, students can only select courses from one specialty area):

- AHR 112, AHR 211, ALT 250, ELC 132
- WLD 113, CAR 111, CAR 112, CAR 113
- ALT 220, ALT 240, ELC 111, ELC 113, ELC 233
- ARC 111, ARC 261, CIV 125, DFT 151, DFT 152

Estimation/Code Electives:

Select one from: AHR 210, CAR 114, ARC 131, ELC 118

Except for Electrical/Electronics, Technical and Estimation/Code Electives may be completed in either the day or evening. Currently, courses with the CMT prefix are scheduled as evening classes.

Additional electives may be accepted from Industrial Construction Technology, Industrial Systems Technology, Masonry, and Plumbing programs taken at other institutions in the North Carolina Community College System.

Construction Management Technology Certificate - Evening Schedule (C35190L1)

The Construction Management Technology certificate is designed for the skilled tradesman who is experienced in the construction industry and has the desire to advance to construction management. Recent high school graduates will also be accepted.

Major Requirements		Credits
BPR 130	Blueprint Reading/Construction	2
CMT 210	Professional Construction Supervision	3
CMT 212	Total Safety Performance	3
CMT 214	Planning and Scheduling	3
CMT 216	Costs and Productivity	3
CMT 218	Human Relations Issues	3
Total Credit Hours Required		17

Electrical/Electronics Technology

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

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

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

Electrical/Electronics Technology Associate in Applied Science Degree (A35220)

Courses requiring a grade of "C" or better: COE, EGR, ELC, and ELN

General Education Requirements		Credits
ENG 111	Expository Writing (or ENG 110)	3
ENG 114	Prof Research and Report Writing (or COM 120, or COM 231)	3
MAT 121	Algebra/Trigonometry	3
MAT 122	Algebra/Trigonometry II (or Natural Science/Math Elective)*	3
	Humanities Elective	3
	Social/Behavioral Science Elective	3

Major Requirements		Credits
EGR 110	Introduction to Engineering Tech.	2
EGR 125	Application Software for Tech	2
ELC 112AB	DC/AC Electricity (or ELC 138)	3
ELC 112BB	DC/AC Electricity (or ELC 139)	2
ELC 113	Basic Wiring I	4
ELC 115	Industrial Wiring	4
ELC 117	Motors and Controls	4
ELC 118	National Electrical Code	2
ELC 128	Introduction to PLC	3
ELC 213	Instrumentation	4
ELC 228	PLC Applications	4
ELN 133	Digital Electronics	4
ELN 137	Electronic Devices & Circuits	5
ELN 152	Fabrication Techniques	2

HYD 110	Hydraulics/Pneumatics	3
PHY 131	Physics-Mechanics	4
	Technical Elective*	2
Total Credit Hours Required		72
<i>*A minimum of two hours of Technical Elective hours to be selected from: ELC 229, ELC 233, COE 112, ALT 120, SST 120</i>		

Electrical/Electronics Technology Diploma (D35220)

Courses requiring a grade of "C" or better: EGR, ELC and ELN

General Education Requirements		Credits
COM 120	Intro to Interpersonal Communications (or ENG 110 or ENG 111)	3
MAT 101	Applied Mathematics I (or MAT 121*)	3

Major Requirements		Credits
EGR 125	Application Software for Tech	2
ELC 113	Basic Wiring I	4
ELC 115	Industrial Wiring	4
ELC 117	Motors and Controls	4
ELC 118	National Electrical Code	2
ELC 128	Introduction to PLC	3
ELC 213	Instrumentation	4
ELC 112AB	DC/AC Electricity (or ELC 138)	3
ELC 112BB	DC/AC Electricity (or ELC 139)	2
ELN 152	Fabrication Techniques	2
Total Credit Hours Required		36

Electrical/Electronics Technology Electrical Wiring Certificate (C35220L1)

The Electrical Wiring Certificate program teaches the student the concepts and skills needed to install and repair residential, commercial, and industrial wiring systems. Preparation for State and local licenses are achieved through laboratory and classroom studies that focus on the National Electrical Code.

Major Requirements		Credit
ELC 112	DC/AC Electricity	5
ELC 113	Basic Wiring I	4
ELC 115	Industrial Wiring	4
Total Credit Hours Required		13

Electrical/Electronics Technology Instrumentation and Control Certificate (C35220L2)

The Instrumentation and Control Certificate program teaches the student the concepts and skills needed to program, install, calibrate and service systems that acquire and record industrial and environmental data.

Major Requirements		Credit
ELC 112	DC/AC Electricity	5
ELC 128	Introduction to PLC	3
ELC 213	Instrumentation	4
Total Credit Hours Required		12

Electrical/Electronics Technology Building Automation & Controls (C35220L3)

This advanced certificate is intended to help prepare students to install and maintain automated energy and environmental control systems.

Major Requirements		Credits
ELC 117	Motors and Controls	4
ELC 128	Intro to PLCs	3
ELC 213	Instrumentation	4
ELC 233	Energy Management	3
Total Credit Hours		14

Electronics Engineering Technology

The Electronics Engineering Technology curriculum prepares individuals to become technicians who design, build, install, test, troubleshoot, repair, and modify developmental and production electronic components, equipment, and systems such as industrial/computer controls, manufacturing systems, communication systems, and power electronic systems.

A broad-based core of courses, including basic electricity, solid-state fundamentals, digital concepts, and microprocessors, ensures the student will develop the skills necessary to perform entry-level tasks. Emphasis is placed on developing the student's ability to analyze and troubleshoot electronic systems.

Graduates should qualify for employment as engineering assistants or electronic technicians with job titles such as electronics engineering technician, field service technician, maintenance technician, electronic tester, electronic systems integrator, bench technician, and production control technician.

Electronics Engineering Technology Associate in Applied Science Degree (A40200)

Courses requiring a grade of "C" or better: COE, ELC, and ELN

General Education Requirements		Credits
ENG 111	Expository Writing	3
ENG 114	Prof. Research and Report Writing	3
MAT 121	Algebra/Trigonometry I (or MAT171/171A**)	3
MAT 122	Algebra/Trigonometry II (or MAT172/172A**)	3
	Humanities Elective	3
	Social/Behavioral Science Elective	3

Major Requirements		Credits
CET 111	Computer Upgrade/Repair I	3
DFT 151	CAD I (or ELN 150)	3
EGR 110	Introduction to Engineering Tech.	2
EGR 125	Application Software for Technicians	2
ELC 117	Motors and Controls	4
ELC 128	Introduction to PLC	3
ELC 138	DC Circuit Analysis	3
ELC 139	AC Circuit Analysis	3
ELN 133	Digital Electronics	4
ELN 137	Electronic Devices & Circuits	5
ELN 152	Fabrication Techniques	2
ELN 232	Introduction to Microprocessors	4
ELN 234	Communications Systems	4
ELN 133A	Digital Electronics Lab	1
PHY 131	Physics-Mechanics (or PHY 151**)	4
	Electives*	6
Total Credit Hours Required		71

**Electives: CET 125, CET 211, CET 212, CHM 135, EGR 285, ELC 133, ELC 213, ELC 228, ELC 229, ELC 233, ELN 237, MAT 151/151A, MAT 271, PHY 152, COE 112/115.*

***Recommended courses for students seeking transfer for bachelor's degree in engineering technology.*

Heavy Equipment and Transport Technology (Diesel)

The Heavy Equipment and Transport Technology curriculum is designed to prepare individuals with the knowledge and skills needed to service, troubleshoot, and repair medium and heavy duty vehicles.

The course work includes the purpose, construction features, and principles of operation of medium and heavy duty vehicles.

Graduates of the curriculum should qualify for entry level employment opportunities in a dealership, fleet shop, or independent garage as a technician. Graduates that have met the work experience requirement should also be prepared to take the ASE certification exam.

Heavy Equipment and Transport Technology Diploma (D60240)

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

General Education Requirements		Credits
ACA 115	Success and Study Skills	1
ENG 102	Applied Communications II* (or ENG 110, or ENG 111)	3
PHY 121	Applied Physics I (or MAT 121)	4

Major Requirements		Credits
CIS 110	Introduction to Computers	3
HET 110	Engines	6
HET 112	Diesel Electrical System	5
HET 115	Electronic Engines	3
HET 116	A/C/Diesel Equipment	2
HET 118	Mechanical Orientation	2
HET 119	Mechanical Transmissions	3
HET 125	Preventative Maintenance	2
HET 231	Medium-Heavy Duty Brake Systems	2
HET 233	Suspension and Steering	4
HYD 112	Hydraulics Medium/Heavy Duty	2
MAC 118	Machine Shop Basics	2
WLD 112	Basic Welding Processes	2
Total Credit Hours Required		46

* Students intending to complete an associate's degree should take either ENG 110 or ENG 111.

Heavy Equipment and Transport Technology Associate in Applied Science - Evening Associate Degree Completion (A60240) (Evening Only Program)

To be taken after completion of Diploma (day) program

General Education Requirements		Credits
Communications Elective*		3
Humanities/Fine Arts Elective		3
Social/Behavioral Science Elective		3

Major Requirements		Credits
COE 112	Co-op Work Experience I	2
COE 122	Co-op Work Experience II	2
HET 114A	Powertrains	3
HET 114B	Powertrains	2
HET 128	Medium/Heavy Duty Tune-Up	2
Total Credit Hours Required		66

*Communications Elective: COM 120, COM 231, or ENG114

Heavy Equipment and Transport Technology Certificate (C60240L1)

Major Requirements		Credits
HET 110	Engines	6
HET 112	Diesel Electrical Systems	5
HET 118	Mechanical Orientation	2
HET 125	Preventative Maintenance	2
HET 231	Med/Heavy Brake Systems (or HET 119)	2
Total Credit Hours Required		17

Industrial Systems Technology

The Industrial Systems Technology curriculum is designed to prepare or upgrade individuals to safely service, maintain, repair, or install equipment. Instruction includes theory and skill training needed for inspecting, testing, troubleshooting, and diagnosing industrial systems.

Students will learn multi-craft technical skills in blueprint reading, mechanical systems maintenance, electricity, hydraulics/pneumatics, welding, machining or fabrication, and includes various diagnostic and repair procedures. Practical application in these industrial systems will be emphasized and additional advanced course work may be offered.

Upon completion of this curriculum, graduates should be able to individually, or with a team, safely install, inspect, diagnose, repair, and maintain industrial process and support equipment. Students will also be encouraged to develop their skills as life-long learners.

Industrial Systems Technology Associate in Applied Science Degree (A50240)

Courses requiring a grade of "C" or better: AHR, ATR, BPR, COE, DFT, EGR, ELC, HYD, ISC, MAC, MEC, MNT and WLD

General Education Requirements		Credits
COM 231	Public Speaking (or COM 120, or ENG 114)	3
ENG 110	Freshman Composition (or ENG 111)	3
PHY 121	Applied Physics I (or PHY 110/110A, or CHM 121/121A or MAT 121)	4
	Humanities/Fine Arts Elective	3
	Social/Behavioral Science Elective	3

Major Requirements		Credits
AHR 112	Heating Technology	4
AHR 170	Heating Lab	1
ATR 282	Robotics and CIM (or ATR 112)	4
BPR 111	Blueprint Reading	2
BPR 121	Blueprint Reading: Mechanical	2
EGR 110	Introduction to Engineering Tech.	2
EGR 125	App. Software for Technicians (or CIS 110)	2
ELC 111	Introduction to Electricity	3
ELC 117	Motors and Controls	4
ELC 128	Introduction to PLC	3
HYD 110	Hydraulics and Pneumatics	3
ISC 121	Environmental Health and Safety	3
MEC 111	Machining Processing I (or MAC 111)	3
MEC 161	Manufacturing Processes 1	3
MNT 110	Intro to Maintenance Procedures	2

MNT 111	Maintenance Practices	3
WLD 112	Basic Welding Processes	2
	Electives*	6
Total Credit Hours Required		68

**Electives: AHR 110, COE 113, ELC113, ELC 213, ELC 228, HET 118, HET 125, MAC 114, MEC 180, WLD 212*

Industrial Systems Technology Diploma (D50240)

Courses requiring a grade of "C" or better: ATR, BPR, EGR, ELC, HYD, ISC, MAC, MEC, MNT and WLD

General Education Requirements		Credits
ENG 110	Freshman Composition (or ENG 111 or COM 120)	3
PHY 121	Applied Physics I (or PHY 110/110A, or CHM 121/121A or MAT 121)	4

Major Requirements		Credits
ATR 282	Robotics and CIM (or ATR 112)	4
BPR 111	Blueprint Reading	2
BPR 121	Blueprint Reading: Mechanical	2
EGR 125	App. Software for Technicians (or CIS 110)	2
ELC 111	Introduction to Electricity	3
ELC 117	Motors and Controls	4
ELC 128	Introduction to PLC	3
HYD 110	Hydraulics and Pneumatics	3
ISC 121	Environmental Health & Safety	3
MEC 111	Machining Processing I (or MAC 111)	3
MEC 161	Manufacturing Processes 1	3
MNT 110	Intro to Maintenance Procedures	2
WLD 112	Basic Welding Processes	2
Total Credit Hours Required		43

Industrial Systems Technology Basic Maintenance Certificate (C50240L1)

The Industrial Systems Basic Maintenance program teaches the student the concepts and skills needed to service and repair various types of mechanical equipment.

Major Requirements		Credits
BPR 111	Blueprint Reading	2
HYD 110	Hydraulics and Pneumatics	3
ISC 121	Environmental Health & Safety	3
ELC 111	Intro to Electricity	3
MNT 110	Intro to Maintenance Procedures	2
WLD 112	Basic Welding Processes	2
Total Credit Hours Required		15

Industrial Systems Technology Metal Fabrication Certificate (C50240L2)

The Industrial Systems Metal Fabrication program teaches the student the concepts and skills needed to fabricate simple fixtures and equipment.

Major Requirements

	Credit
BPR 111 Blueprint Reading	2
ISC 121 Environmental Health & Safety	3
MEC 111 Machine Processes I (or MAC 111)	3
WLD 112 Basic Welding Processes	2
WLD 212 Inert Gas Welding	2
Total Credit Hours Required	12

Machining Technology

The Machining Technology curriculum is designed to develop skills in the theory and safe use of hand tools, power machinery, computerized equipment and sophisticated precision inspection instruments.

Students will learn to interpret blueprints, set up manual and CNC machines, perform basic and advanced machining operations and make decisions to ensure that work quality is maintained.

Employment opportunities for machining technicians exist in manufacturing industries, public institutions, governmental agencies and in a wide range of specialty machining job shops.

Machining Technology Associate in Applied Science Degree (A50300)

Courses requiring a grade of "C" or better: BPR, MAC, MEC, and WLD

General Education Requirements

	Credits
ACA 115 Success and Study Skills	1
COM 231 Public Speaking (or COM 120)	3
ENG 110 Freshman Composition (or ENG 111)	3
MAT 121 Algebra/Trigonometry (or PHY 121)	3
SOC 215 Group Processes	3
Humanities Elective	3

Major Requirements

	Credits
BPR 111 Blueprint Reading I	2
BPR 121 Blueprint Reading II	2
MAC 111 Machining Technology I	6
MAC 112 Machining Technology II	6
MAC 113 Machining Technology III	6
MAC 121 Introduction to CNC	2
MAC 122 CNC Turning	2

MAC 124 CNC Milling	2
MAC 151 Machining Calculations	2
MAC 152 Advanced Machining Calculations	2
MAC 222 Advanced CNC Turning	2
MAC 224 Advanced CNC Milling	2
MAC 226 CNC EDM Machining	2
MAC 241 Jigs and Fixtures I	4
MAC 245 Mold Construction I	4
MAC 247 Production Tooling	2
MEC 231 CAM I	3
MEC 232 CAM II	3
Electives*	2-6
Total Credit Hours Required	72-76

*Electives: WLD 112, MAC 234, MAC 228, MAC 231

Machining Technology - Diploma (D50300)

Courses requiring a grade of "C" or better: BPR and MAC

General Education Requirements

	Credits
ACA 115 Success and Study Skills	1
COM 231 Public Speaking	3
ENG 110 Freshman Composition (or ENG 111)	3
SOC 215 Group Processes	3

Major Requirements

	Credits
BPR 111 Blueprint Reading I	2
BPR 121 Blueprint Reading II	2
MAC 111 Machining Technology	6
MAC 112 Machining Technology II	6
MAC 113 Machining Technology III	6
MAC 121 Introduction to CNC	2
MAC 122 CNC Turning	2
MAC 124 CNC Milling	2
MAC 151 Machining Calculations	2
MAC 152 Advanced Machining Calculations	2
Total Credit Hours Required	42

Machining Technology Basic Certificate (C50300L1)

This certificate program is designed to develop fundamental skills in the operation of machine tools including drilling, turning, milling and grinding. Training in basic measuring, layout, and blueprint reading is also provided.

Completers will be prepared for employment as entry-level machine operators/machinist apprentices in area manufacturing firms. Courses in this program can be transferred directly into the Machining Technology Associate Degree curriculum.

Major Requirements	Credits
BPR 111 Blueprint Reading I	2
MAC 121 Introduction to CNC	2
MAC 124 CNC Milling	2
MAC 111 Machining Technology	6
Total Credit Hours Required	12

Machining Technology CNC Programming Certificate (C50300L2)

The purpose of this certificate program is to introduce basic CAD/CAM programming skills to individuals who want to learn computer numerical control (CNC) machining. Students will learn 2D and 3D programming as well as 2 axis and 3 axis machining. The student will make the parts they design.

Major Requirements	Credits
BPR 111 Blueprint Reading I	2
MAC 121 Introduction to CNC	2
MAC 151 Machining Calculations	2
MAC 122 CNC Turning	2
MAC 124 CNC Milling	2
MEC 231 CAM I	3
Total Credit Hours Required	13

Machining Technology Advanced CNC Programming Certificate (C50300L3)

The purpose of this certificate program is to introduce advanced CAD/CAM programming skills to individuals who have completed the courses in the CNC Programming Certificate or equivalent. Students will learn 4 axis and 5 axis programming and machining. The students will make the parts they design.

Major Requirements	Credits
MAC 228 Advanced CNC Processes	3
MAC 231 CNC Graphics Programming: Turning	3
MAC 234 Adv Four/Five-Axis Machining	6
Total Credit Hours Required	12

Machining Technology Fundamentals of Metals Certificate (C50300L4)

The purpose of this certificate program is to introduce dual enrolled High School students to metals manufacturing.

Major Requirements	Credits
BPR 111 Blueprint Reading I	2
BPR 121 Blueprint Reading II	2
MAC 111 Machining Technology I	6
MAC 112 Machining Technology II	6
Total Credit Hours Required	16

Mechanical Engineering Technology

The Mechanical Engineering Technology curriculum prepares graduates for employment as mechanical technicians. This program also maximizes transfer credit to certain four-year university engineering and/or industrial programs. Typical assignments would include assisting in the design, development, testing and repair of mechanical equipment. Emphasis is placed on the integration of theory and mechanical principles.

Coursework includes applied mechanics, manufacturing methods and processes, computer usage, computer-aided drafting, mathematics, physics, and oral and written communications. The courses will stress critical thinking, planning, and problem solving.

Graduates of the curriculum will find employment opportunities in the diversified branches of the mechanical field. Mechanical engineering technicians are employed in many types of manufacturing, fabrication, research and development, and service industries.

Mechanical Engineering Technology Associate in Applied Science Degree (A40320)

Courses requiring a grade of "C" or better: ATR, CIV, COE, DFT, EGR, ELC, HYD, ISC, MAT, MEC, PLA and WLD

General Education Requirements	Credits
COM 231 Public Speaking	3
ENG 110 Freshman Composition* (or ENG 111)	3
MAT 121 Algebra/Trigonometry I* (or MAT 161/161A, MAT 171/171A, MAT 175)	3
Humanities/Fine Arts Elective	3
Social/Behavioral Elective	3

Major Requirements		Credits
ATR 282	Robotics and CIM (or ATR 112)	4
CIV 110	Statics and Strength of Materials	4
DFT 151	CAD I (or DFT 170)	3
DFT 154	Introduction to Solid Modeling	3
EGR 110	Intro to Engineering Technology (or EGR 150)	2
EGR 125	Applied Software for Technicians	2
ELC 111	Introduction to Electricity	3
ELC 213	Instrumentation	4
HYD 110	Hydraulics/Pneumatics	3
ISC 121	Environmental Health & Safety	3
MEC 111	Machine Processes I (or MAC 111)	3
MEC 155	Env Benign Manufacturing	3
MEC 161	Manufacturing Process I	3
MEC 180	Engineering Materials	3
MEC 181	Introduction to CIM	2
MEC 260	Fundamentals of Machine Design	3
PLA 110	Introduction to Plastics	2
PLA 120	Injection Molding	3
WLD 112	Basic Welding Processes	2
	Elective Group 1*	2-3
	Elective Group 2**	2-3
Total Credit Hours Required		74-76

***MEC Elective Group 1 – Select one course from:**

ISC 132	Mfg Quality Control	3
ISC 278	cGMP Quality Systems	2
ISC 279	Auditing for cGMP	3
ISC 280	Validation Fundamentals	2

****Elective Group 2**

COE 112	Co-Op Work Experience I	2
EGR 130	Engineering Cost Control	3
EGR 285	Design Project	2
ELC 128	Introduction to PLC	3
BPR 111	Blueprint Reading	2
DFT 111	Technical Drafting I	2

Students transferring to a 4-year institution are strongly encouraged to take the following four courses in addition to those listed above: ENG 114, CHM 135 or CHM 151, PHY 131 or PHY 151, MAT 151/151A.

Mechanical Engineering Technology Plastic Injection Molding Certificate (C40320L2)

The Mechanical Engineering Technology Plastic Injection Molding Certificate program is designed to develop the fundamental knowledge of plastics and plastic injection molding. This certificate prepares students for employment opportunities in the plastics industry.

Major Requirements		Credits
ATR 282	Robotics and CIM (or ATR 112)	4
BPR 111	Blueprint Reading	2
ISC 121	Environmental Health and Safety	3
PLA 110	Introduction to Plastics	2
PLA 120	Injection Molding	3
Total Credit Hours Required		14

Mechanical Engineering Technology Mechanical Drafting Certificate (C40320L3)

The Mechanical Engineering Technology Mechanical Drafting Certificate program is designed to develop fundamental skills in CAD, engineering drafting, three-dimensional solid modeling and design software, engineering materials, and the different machining and manufacturing processes.

Major Requirements		Credits
DFT 111	Technical Drafting I	2
DFT 151	CAD I (or DFT 170)	3
DFT 154	Introduction to Solid Modeling	3
MEC 111	Machine Processes I (or MAC 111)	3
MEC 161	Manufacturing Processes I	3
MEC 180	Engineering Materials	3
Total Credit Hours Required		17

Mechanical Engineering Technology Quality and cGMP Certificate (C40320L4)

The Mechanical Engineering Technology Quality and cGMP Certificate program is designed to develop fundamental skills in Quality Systems, cGMP and FDA compliant Validation. This certificate prepares students for employment opportunities in regulated manufacturing industries.

Major Requirements		Credits
ISC 121	Environmental Health and Safety	3
ISC 132	Manufacturing Quality Control	3
ISC 278	cGMP Quality Systems	2
ISC 279	Auditing for cGMP	3
ISC 280	Validation Fundamentals	2
Total Credit Hours Required		13

Surveying Technology

The Surveying Technology curriculum provides training for technicians in the many areas of surveying. Surveyors are involved in land surveying, route surveying, construction surveying, photogrammetry, mapping, global positioning systems, geographical information systems, and other areas of property description and measurements.

Course work includes the communication and computational skills required for boundary, construction, route, and control surveying, photogrammetry, topography, drainage, surveying law, and subdivision design, with emphasis upon applications of electronic data collection and related software including CAD.

Graduates should qualify for jobs as survey party chief, instrument person, surveying technician, highway surveyor, mapper, GPS technician, and CAD operator. Graduates will be prepared to pursue the requirements necessary to become a Professional Land Surveyor in North Carolina.

Surveying Technology Associate in Applied Science Degree (A40380)

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

General Education Requirements		Credits
ACA 115	Success and Study Skills (or EGR 110 or ERG 150)	1
ENG 111	Expository Writing	3
ENG 114	Prof. Research and Reporting (or COM 120, or COM 231)	3
MAT 121	Algebra/Trigonometry I (or MAT 171/171A)	3
	Humanities/Fine Arts Elective	3
	Social/Behavioral Sciences Elective	3

Major Requirements		Credits
CIV 110	Statics/Strength of Materials	4
CIV 111	Soils and Foundations	3
CIV 125	Civil/Surveying CAD	3
CIV 211	Hydraulics and Hydrology	3
CIV 215	Highway Technology	2
CST 211	Construction Surveying	3
EGR 115	Intro to Technology	3
EGR 125	Appl Software for Tech (or DFT 151)	2
GIS 112	Introduction to GPS	3
SRV 110	Surveying I	4
SRV 111	Surveying II	4
SRV 210	Surveying III	4
SRV 220	Surveying Law	3

SRV 230	Subdivision Planning	3
SRV 240	Topo/Site Surveying	4
SRV 250	Advanced Surveying	4
SRV 260	Field & Office Practices	2
Total Credit Hours Required		70

Surveying Technology Surveying Fundamentals Certificate (C40380L1)

Major Requirements		Credits
CIV 125	Civil/Surveying CAD	3
EGR 115	Intro to Technology	3
EGR 125	Appl Software for Tech (or DFT 151)	2
MAT 121	Algebra/Trigonometry I	3
SRV 110	Surveying I	4
Total Credit Hours Required		15

Surveying Technology Civil/Surveying CAD Certificate (C40380L2)

Major Requirements		Credits
CIV 125	Civil/Surveying CAD	3
COM 120	Intro to Interpersonal Communication (or COM 231)	3
EGR 115	Intro to Technology	3
EGR 125	Appl Software for Tech (or DFT 151)	2
SRV 260	Field & Office Practices	2
Total Credit Hours Required		13

Sustainability Technologies

The Sustainability Technologies curriculum is designed to prepare individuals for employment in environmental, construction, alternative energy, manufacturing, or related industries, where key emphasis is placed on energy production and waste reduction along with sustainable technologies.

Course work may include alternative energy, environmental engineering technology, sustainable manufacturing, and green building technology. Additional topics may include sustainability, energy management, waste reduction, renewable energy, site assessment, and environmental responsibility.

Graduates should qualify for positions within the alternative energy, construction, environmental, and/or manufacturing industries. Employment opportunities exist in both the government and private industry sectors where graduates may function as manufacturing technicians, sustainability consultants, environmental technicians, or green building supervisors.

Sustainability Technologies Associates in Applied Science Technology (A40370)

Courses requiring a grade of "C" or better: ALT, ARC, ENV, SST

General Education Requirements		Credits
ENG 111	Expository Writing	3
ENG 114	Prof. Research and Reporting	3
MAT 121	Algebra/Trigonometry I	3
PHY 131	Physics - Mechanics(or PHY 151)	4
	Humanities/Fine Arts Elective	3
	Social/Behavioral Sciences Elective	3
Major Requirements		Credits
AHR 211	Residential System Design(or ARC 230)	3
ALT 120	Renewable Energy Tech 2	3
ALT 220	Photovoltaic Sys Tech	3
ARC 111	Intro to Arch Technology	3
ARC 112	Construction Materials & Methods	4
ARC 131	Building Codes	3
ARC 210	Intro. to Sustainable Design	2
ARC 261	Solar Technology	2
CIV 110	Statics/Strength of Materials	4
DFT 170	Engineering Graphics 2	3
EGR 110	Intro to Engineering Tech (or EGR 150)	2
EGR 125	App. Software for Tech.	2
ELC 111	Intro to Electricity	3
ENV 110A	Environmental Science Lab	1
ENV 110	Environmental Science	3

SST 110	Intro to Sustainability	3
SST 120	Energy Use Analysis	3
SST 130AB	Modeling Renewable Energy	2
SST 130BB	Modeling Renewable Energy	1
SST 140	Green Building Concepts	2
SST 210	Issues in Sustainability	3
Total Credit Hours Required		74

Welding Technology

The Welding Technology curriculum provides students with a sound understanding of the science, technology, and applications essential for successful employment in the welding and metal industry. Instruction includes consumable and nonconsumable electrode welding and cutting processes.

Courses in math, blueprint reading, metallurgy, welding inspection, and destructive and nondestructive testing provides the student with industry-standard skills developed through classroom training and practical application.

Successful graduates of the Welding Technology curriculum may be employed as entry level technicians in welding and metalworking industries. Career opportunities also exist in construction, manufacturing, fabrication, sales, quality control, supervision, and welding-related self-employment.

Welding Technology Associate in Applied Science Degree (A50420)

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

General Education Requirements		Credits
ACA 115	Success and Study Skills	1
ENG 110	Freshman Composition (or ENG 111)	3
MAT 121	Algebra/Trigonometry I (or PHY 121)	3
	Communications Elective*	3
	Humanities Elective	3
	Social/ Behavioral Science Elective	3
Major Requirements		Credits
DFT 161	Pattern Design and Layout (or PCS 110 or PCJ 262)	2
MAC 118	Machine Shop Basic	2
MEC 110	Introduction to CAD/CAM	2
SPA 120	Spanish for the Workplace (or PCS 112)	3
WLD 110	Cutting Processes	2
WLD 115	SMAW (Stick) Plate	5
WLD 116	SMAW (Stick) Plate/Pipe	4
WLD 121	GMAW (MIG) Plate	4
WLD 122	GMAW (MIG) Plate/Pipe	3

WLD 131	GTAW (TIG) Plate	4
WLD 132	GTAW (TIG) Plate/Pipe	3
WLD 141	Symbols & Specifications	3
WLD 143	Welding Metallurgy	2
WLD 151	Fabrication I	4
WLD 215	SMAW (Stick) Pipe	4
WLD 231	GTAW (TIG) Pipe	3
WLD 251	Fabrication II	3
WLD 261	Certification Practices	2
WLD 262	Inspection & Testing	3
Total Credit Hours Required		74

*Communications Elective: COM 120, COM 231, ENG 114

Welding Technology - Diploma (D50420)

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

General Education Requirements		Credits
ACA 115	Success and Study Skills	1
ENG 110	Freshman Composition (or ENG 102)	3
MAT 121	Algebra/Trigonometry I (or PHY 122)	3

Major Requirements		Credits
MAC 118	Machine Shop Basic	2
WLD 110	Cutting Processes	2
WLD 115	SMAW (Stick) Plate	5
WLD 116	SMAW (Stick) Plate/Pipe	4
WLD 121	GMAW (MIG) FCAW (Flux) Plate	4
WLD 131	GTAW (TIG) Pipe	4
WLD 141	Symbols and Specifications	3
WLD 122	GMAW (MIG) Plate/Pipe	3
WLD 143	Welding Metallurgy	2
WLD 262	Inspection and Testing	3
Total Credit Hours Required		39

Welding Technology Basic Welding Certificate I (C50420L2)

The following courses give students a basic understanding of the principles, and skills of modern day welding. Upon completion, students should be able to apply basic welding techniques in both SMAW and GMAW welding.

Major Requirements		Credits
WLD 110	Cutting Processes	2
WLD 115	SMAW (Stick) Plate	5
WLD 121	GMAW/FCAW/Plate	4
WLD 122	GMAW (MIG) Plate/Pipe (or WLD 131)	3
Total Credit Hours Required		14

Welding Technology Ornamental Ironwork Certificate (C50420L4) - Day Schedule

The following courses give students an understanding of the principles, methods, techniques, and skill for working in the ornamental Ironworking industry. This certificate is designed for metal workers and artists.

Major Requirements		Credits
WLD 110	Cutting Processes	2
PCS 110	Intro to Metal Sculpture	5
PCS 112	Beg. Welding for Artists	3
PCJ 262	Hand Wrought Metal	2
Total Credit Hours Required		12

Arts and Sciences

General Education

Consistent with Asheville-Buncombe Technical Community College's commitment to student success, the general education program provides students with a knowledge base of historical, societal, and environmental contexts for succeeding in the changing global community. The general education program represents a full spectrum of English composition, communication, and literature; humanities and fine arts; social and behavioral sciences; natural sciences; chemistry and physics; mathematics; and related elective components.

The purposes of the general education program are to facilitate student acquisition and sharing of knowledge, to encourage social interaction, and to promote an educated citizenry. General education courses develop broad, cross-curriculum knowledge and skill sets that prepare the student to successfully master the challenges of post-graduation endeavors.

For students interested in starting or managing their own business, the Student Business Incubator is one of many programs and services offered by the A-B Tech Small Business Center/Business Incubator.

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

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

Learning Communities: Interdisciplinary Studies

Emphasizing interdependency between varied disciplines encourages students to view their education as a comprehensive experience. The interdisciplinary unifying structure is an invitational approach connecting individual courses and demonstrating the necessity of such links for a more conscious experience. A-B Tech's Interdisciplinary Studies Program includes linked courses from the general education program. These learning communities allow students to understand the relationships connecting natural and social sciences, humanities, and history.

The IDS Program includes 27 of the 44 general education credit hours for the A.A. Degree or Diploma. It is an ideal avenue for those planning to pursue a Bachelor's Degree. The program is designed to be completed in 4 semesters: IDS1 and 3 during fall semester and IDS 2 and 4 during spring semester. IDS1=HIS 111 and ENG 111; IDS2=ENG 113 and SOC 225; IDS 3 = BIO 110 and HUM 115; and IDS 4= HUM 212 and CHM 135.

Degrees Conferred

Associate in Arts
Associate in Science
Associate in Fine Arts
A.A.S., Biotechnology
A.A.S., General Occupational Technology

Diplomas Awarded

Associate in Arts
Associate in Science
General Occupational Technology

Curriculum Requirements for the Associate in Arts (A.A.) Degree (A10100)

Program Summary	Hours
General Education	44
<i>English/Composition</i>	6
<i>Humanities/Communication/Fine Arts</i>	12
<i>Social/Behavioral Sciences</i>	12
<i>Natural Sciences</i>	8
<i>Mathematics</i>	6
Other Courses	21
Program Total	65

General Education Core Requirements 44 Semester Hours

English Composition (6 semester hours)

1. ENG 111 Expository Writing is required.

2. Select one additional course from:

ENG 112 Argument-Based Research

ENG 113 Literature-Based Research

ENG 114 Professional Research and Reporting

Humanities/Fine Arts (12 semester hours)

1. A communications course is required in lieu of one humanities/fine arts course. COM 231, Public Speaking, is preferred. COM 120 and COM 140 are also acceptable.
2. Select three additional courses from at least two of the following discipline areas: art, drama, foreign languages, humanities, literature, music, philosophy, and religion. **At least one course must be a literature (*) course.**

ART 111	DRA 212	FRE 111	HUM 115	HUM 220	REL 110
ART 114	ENG 131*	FRE 112	HUM 120	MUS 110	REL 111
ART 115	ENG 231*	FRE 211	HUM 121	MUS 112	REL 112
ART 117	ENG 232*	FRE 212	HUM 122	MUS 113	REL 211
DRA 111	ENG 241*	GER 111	HUM 130	MUS 114	REL 212
DRA 112	ENG 242*	GER 112	HUM 150	MUS 210	SPA 111
DRA 122	ENG 243*	GER 211	HUM 160	PHI 210	SPA 112
DRA 126	ENG 261*	GER 212	HUM 211	PHI 215	SPA 211
DRA 211	ENG 262*	HUM 110	HUM 212	PHI 230	SPA 212
				PHI 240	

Social/Behavioral Sciences (12 semester hours)

Select four courses from at least three of the following discipline areas: anthropology, economics, geography, history, political science, psychology, and sociology.

At least one course must be a history (*) course.

ANT 210	ECO 252	HIS 115*	POL 210	PSY 281
ANT 220	GEO 111	HIS 131*	POL 220	SOC 210
ANT 240	GEO 112	HIS 132*	PSY 150	SOC 213
ECO 151	HIS 111*	POL 110	PSY 237	SOC 220
ECO 251	HIS 112*	POL 120	PSY 239	SOC 225
			PSY 241	SOC 240

Natural Sciences (8 semester hours)

Select two courses, including accompanying laboratory* work, from the astronomy, biology, chemistry, geology, or physics disciplines. Either BIO 110 or BIO 111 count as the A.A. science requirement, not both.

AST 111	BIO 112	BIO 140A*	CHM 151	PHY 152
AST 111A*	BIO 120	CHM 132	CHM 152	PHY 251
BIO 110	BIO 130	CHM 135	GEL 111	PHY 252
BIO 111	BIO 140	CHM 136	GEL 113	

Mathematics (6 semester hours)

1. MAT 161 or higher is required. Select one course from:

MAT 161* College Algebra
 MAT 171* Precalculus Algebra
 MAT 172* Precalculus Trigonometry
 MAT 175 Precalculus
 MAT 271 Calculus I
 MAT 272 Calculus II
 MAT 273 Calculus III

2. Select a second course from the following:

MAT 140	MAT 171*	MAT 175	MAT 272	CIS 110	CIS
MAT 151*	MAT 172*	MAT 271	MAT 273	115	

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

Other Required Hours (21 Semester Hours)

1. ACA 115, Success and Study Skills is required

2. Additional Courses (20 Semester Hours):

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

A second foreign language course is recommended (elective)*. Math lab hours, when required as a corequisite, count as an elective. Students should refer to Pre-Major Articulation Agreements before making selections for required hours:
www.ga.unc.edu/student_info/caa/.

Recommended Additional Courses:

Although these courses are not required, they are recommended for all students who have sufficient available credit hours.

1. Computing (3 semester hours): CIS 110 Introduction to Computers

2. Health and Physical Education (3 semester hours):

HEA 110, HEA 112, or PED 110 plus any PED activity course

Total Semester Hours**65**

*Foreign language courses should be selected in a sequence that meets the requirements of the receiving college/university. Most colleges/universities require a two-semester sequence of foreign language.

All college transfer courses submitted for graduation require a minimum grade of "C". Courses selected may vary according to requirements of the pre-major, senior institution, etc. Health and Physical Education courses may be selected any semester.

Electives – Associate in Arts (20 semester hours)

Any approved transfer course (including core courses) may be taken as an elective. Listed below are electives taught at A-B Tech. No elective course may be substituted for an approved general education core course. All PED (physical education) courses count as electives.

ACC 120 (4)	BIO 168 (4)	DRA 130 (3)	ENG 275 (3)	MUS 122 (4)
ACC 121 (4)	BIO 169 (4)	DRA 131 (3)	FRE 181 (1)	MUS 131 (1)
ART 121 (3)	BIO 175 (3)	DRA 135 (3)	FRE 182 (1)	MUS 132 (1)
ART 122 (3)	BIO 223 (3)	DRA 140 (3)	GER 141 (3)	MUS 221 (4)
ART 131 (3)	BIO 224 (2)	DRA 141 (3)	GER 181 (1)	MUS 222 (4)
ART 132 (3)	BIO 225 (2)	DRA 145 (2)	GER 182 (1)	MUS 231 (1)
ART 135 (3)	BIO 226 (2)	DRA 170 (3)	GER 221 (3)	MUS 232 (1)
ART 171 (3)	BIO 271 (3)	DRA 171 (3)	HEA 110 (3)	PHS 140 (3)
ART 231 (3)	BIO 275 (4)	DRA 250 (2)	HEA 112 (2)	POL 130 (3)
ART 240 (3)	BUS 110 (3)	EDU 216 (4)	HEA 120 (3)	PSY 215 (3)
ART 241 (3)	BUS 115 (3)	EGR 150 (2)	HIS 162 (3)	PSY 231 (3)
ART 244 (3)	CHM 251 (4)	EGR 220 (3)	HIS 212 (3)	PSY 246 (3)
ART 261 (3)	CHM 252 (4)	EGR 230 (3)	HIS 221 (3)	PSY 259 (3)
ART 262 (3)	CHM 265 (4)	ENG 125 (3)	HIS 226 (3)	PSY 271 (3)
ART 271 (3)	CHM 271 (3)	ENG 126 (3)	HIS 227 (3)	PSY 275 (3)
ART 274 (3)	CJC 111 (3)	ENG 133 (3)	HIS 236 (3)	SOC 215 (3)
ART 275 (3)	CJC 121 (3)	ENG 134 (3)	HUM 123 (3)	SOC 232 (3)
ART 281 (3)	CJC 141 (3)	ENG 135 (3)	MAT 151A (1)	SOC 234 (3)
ART 282 (3)	COM 140 (3)	ENG 234 (3)	MAT 161A (1)	SOC 244 (3)
ART 283 (3)	COM 150 (3)	ENG 235 (3)	MAT 171A (1)	SOC 254 (3)
ART 284 (3)	COM 160 (3)	ENG 271 (3)	MAT 172A (1)	SPA 141 (3)
BIO 143 (2)	COM 250 (3)	ENG 272 (3)	MAT 280 (3)	SPA 181 (1)
BIO 155 (3)	DRA 120 (3)	ENG 273 (3)	MAT 285 (3)	SPA 182 (1)
BIO 163 (5)	DRA 124 (3)	ENG 274 (3)	MUS 121 (4)	SPA 221 (3)

Curriculum Requirements for the Transfer Core Diploma in Arts (D10100)

Program Summary	Hours
General Education	44
<i>English/Composition</i>	6
<i>Humanities/ Communication/Fine Arts</i>	12
<i>Social/Behavioral Sciences</i>	12
<i>Natural Sciences</i>	8
<i>Mathematics</i>	6
Other Courses	1
Program Total	45

General Education Core Requirements 44 Semester Hours

English Composition (6 semester hours)

1. ENG 111 Expository Writing is required.
2. Select one additional course from:
 - ENG 112 Argument-Based Research
 - ENG 113 Literature-Based Research
 - ENG 114 Professional Research and Reporting

Humanities/Fine Arts (12 semester hours)

1. A communications course is required in lieu of one humanities/fine arts course. COM 231, Public Speaking, is preferred. COM120 is also acceptable.
2. Select three additional courses from at least two of the following discipline areas: art, drama, foreign languages, humanities, literature, music, philosophy, and religion. **At least one course must be a literature (*) course.**

ART 111	DRA 126	ENG 261*	GER 212	HUM 212	PHI 240
ART 114	DRA 211	ENG 262*	HUM 110	HUM 220	REL 110
ART 115	DRA 212	FRE 111	HUM 115	MUS 110	REL 111
ART 117	ENG 131*	FRE 112	HUM 120	MUS 112	REL 112
ASL 111	ENG 231*	FRE 211	HUM 121	MUS 113	REL 211
ASL 112	ENG 232*	FRE 212	HUM 122	MUS 114	REL 212
DRA 111	ENG 241*	GER 111	HUM 130	MUS 210	SPA 111
DRA 112	ENG 242*	GER 112	HUM 150	PHI 210	SPA 112
DRA 122	ENG 243*	GER 211	HUM 160	PHI 215	SPA 211
			HUM 211	PHI 230	SPA 212

Social/Behavioral Sciences (12 semester hours)

Select four courses from at least three of the following discipline areas: anthropology, economics, geography, history, political science, psychology, and sociology.

At least one course must be a history (*) course.

ANT 210	ECO 251	HIS 111*	POL 110	PSY 239	SOC 213
ANT 220	ECO 252	HIS112*	POL 120	PSY 241	SOC 220
ANT 240	GEO 111	HIS 115*	POL 210	PSY 281	SOC 225
ECO 151	GEO 112	HIS 131*	POL 220	SOC 210	SOC 240
		HIS 132*	PSY 150		
			PSY 237		

Natural Sciences (8 semester hours)

Select two courses, including accompanying laboratory* work, from the astronomy, biology, chemistry, geology, or physics disciplines. Either BIO 110 or BIO 111 may count as the A.A. science requirement, not both.

AST 111	BIO 110	BIO 140A*	CHM 151	GEL 230	PHY 152
AST 111A*	BIO 112	CHM 132	CHM 152	PHY 110	PHY 251
BIO 110	BIO 120	CHM 135	GEL 111	PHY 110A*	PHY 252
BIO 111	BIO 130	CHM 136	GEL 113	PHY 151	
	BIO 140				

Mathematics (6 semester hours)

1. MAT 161 or higher is required. Select one course from:

MAT 161* College Algebra
 MAT 171* Precalculus Algebra
 MAT 172 Precalculus Trigonometry
 MAT 175 Precalculus
 MAT 271 Calculus I
 MAT 272 Calculus II
 MAT 273 Calculus III

2. Select a second course from the following:

MAT 140	MAT 171	MAT 175	MAT 272	CIS 110
MAT 151*	MAT 172*	MAT 271	MAT 273	CIS 115

*Math lab is required for this course. Labs count as elective hours.

Other Required Hours (1 Semester Hour)

1. ACA 115, Success and Study Skills is required

Total Semester Hours

45

Curriculum Requirements for the Associate in Science (A.S.) Degree (A10400)

Program Summary	Hours
General Education	44
<i>English/Composition</i>	6
<i>Humanities/Communication/Fine Arts</i>	9
<i>Social/Behavioral Sciences</i>	9
<i>Natural Sciences/Mathematics</i>	20
Other Courses	21
Program Total	65

General Education Core Requirements 44 Semester Hours

English Composition (6 semester hours)

- ENG 111 Expository Writing is required.
- Select one additional course from:
 - ENG 112 Argument-Based Research
 - ENG 113 Literature-Based Research
 - ENG 114 Professional Research and Reporting

Humanities/Fine Arts (9 semester hours)

- A communications course is required in lieu of one humanities/fine arts course. COM 231, Public Speaking, is preferred. COM 120 and COM 140 are also acceptable.
- Select two additional courses from two of the following discipline areas: art, drama, foreign languages, humanities, literature, music, philosophy and religion. One course must be a literature (*) course.

ART 111	ENG 131*	FRE 111	HUM 110	HUM 211	PHI 215
ART 114	ENG 231*	FRE 112	HUM 115	HUM 212	PHI 230
ART 115	ENG 232*	FRE 211	HUM 120	HUM 220	PHI 240
ART 117	ENG 241*	FRE 212	HUM 121	MUS 110	REL 110
DRA 111	ENG 242*	GER 111	HUM 122	MUS 112	REL 211
DRA 112	ENG 243*	GER 112	HUM 130	MUS 113	REL 212
DRA 122	ENG 261*	GER 211	HUM 150	MUS 114	SPA 111
DRA 126	ENG 262*	GER 212	HUM 160	MUS 210	SPA 112
DRA 211				PHI 210	SPA 211
					SPA 212

Social/Behavioral Sciences (9 semester hours)

Select three courses from three of the following discipline areas: anthropology, economics, geography, political science, psychology and sociology. One course must be a history (*) course.

ANT 210	ECO 252	HIS 115*	POL 220	SOC 210
ANT 220	GEO 111	HIS 131*	PSY 150	SOC 213
ANT 240	GEO 112	HIS 132*	PSY 237	SOC 220
ECO 151	HIS 111*	POL 110	PSY 239	SOC 225
ECO 251	HIS 112*	POL 120	PSY 241	SOC 240
		POL 210	PSY 281	

Natural Science/Mathematics (20 semester hours)

Natural Sciences (8 semester hours)

Select a minimum two-course sequence from the following general biology, general chemistry, or general physics courses.

BIO 111 and BIO 112
CHM 151 and CHM 152
PHY 151 and PHY 152
PHY 251 and PHY 252

Mathematics (6 semester hours)

- MAT 171 or higher is required. Select one course from:

MAT 171* Precalculus Algebra
MAT 175* Precalculus
MAT 172 Precalculus Trigonometry
MAT 271 Calculus I
MAT 272 Calculus II
MAT 273 Calculus III

- Select a second course from the following:

MAT 151* MAT 175* MAT 272 CIS 110
MAT 172* MAT 271 MAT 273 CIS 115

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

Either BIO 110 or BIO 111 count as the A.A. science requirement, not both. Six additional semester hours may be selected from either natural sciences (listed below) or mathematics (listed above):

BIO 110	BIO 130	CHM 132	CHM 136	GEL 113
BIO 120	BIO 140/ BIO 140A	CHM 135	GEL 111	GEL 230

Other Required Hours (21 Semester Hours)

- ACA 115, Success and Study Skills is required
- Additional Courses (14 Semester Hours):

A minimum of 14 SHC of college transfer courses in mathematics, natural sciences, or computer science is required.

- Additional Elective Courses (6 Semester Hours):

Math lab hours, when required as a corequisite, count as electives. A second foreign language course is recommended (elective)*. Students should refer to Pre-Major Articulation Agreements before making selections for required hours:

www.ga.unc.edu/student_info/caa/

Recommended Additional Courses:

Although these courses are not required, they are recommended for all students who have sufficient available credit hours.

1. Computing (3 semester hours): CIS 110 Introduction to Computers
2. Health and Physical Education (3 semester hours): HEA 110, HEA 112, or PED 110 plus any PED activity course

Total Semester Hours**65**

*Foreign language courses should be selected in a sequence that meets the requirements of the receiving college/university. Most colleges/universities require a two-semester sequence of foreign language.

All college transfer courses submitted for graduation require a minimum grade of "C". Courses selected may vary according to requirements of the pre-major, senior institution, etc. Health and Physical Education courses may be selected any semester.

**Electives – Associate in Science
(20 semester hours)**

Fourteen semester hours in mathematics, natural sciences, or computer science is required. Any approved transfer course (including core courses) may be taken as an elective. Listed below are electives taught at A-B Tech. No elective course may be substituted for an approved general education core course.

All PED (physical education) courses count as electives.

ACC 120 (4)	BIO 168 (4)	DRA 130 (3)	ENG 274 (3)	MUS 122 (4)
ACC 121 (4)	BIO 169 (4)	DRA 131 (3)	ENG 275 (3)	MUS 131 (1)
ART 121 (3)	BIO 175 (3)	DRA 135 (3)	FRE 181 (1)	MUS 132 (1)
ART 122 (3)	BIO 223 (3)	DRA 140 (3)	FRE 182 (1)	MUS 221 (4)
ART 131 (3)	BIO 224 (2)	DRA 141 (3)	GER 141 (3)	MUS 222 (4)
ART 132 (3)	BIO 225 (2)	DRA 145 (3)	GER 181 (1)	MUS 231 (1)
ART 135 (3)	BIO 226 (2)	DRA 170 (3)	GER 182 (1)	MUS 232 (1)
ART 171 (3)	BIO 271 (3)	DRA 171 (3)	GER 221 (3)	PHS 140 (3)
ART 231 (3)	BIO 275 (4)	DRA 240 (3)	HEA 110 (3)	PHY 110 (3)
ART 240 (3)	BUS 110 (3)	DRA 250 (2)	HEA 112 (2)	PHY 110A (1)
ART 241 (3)	BUS 115 (3)	EDU 216 (4)	HEA 120 (3)	PSY 215 (3)
ART 244 (3)	CHM 251 (4)	EGR 150 (2)	HIS 212 (3)	PSY 243 (3)
ART 261 (3)	CHM 252 (4)	EGR 220 (3)	HIS 162 (3)	PSY 259 (3)
ART 262 (3)	CHM 265 (4)	EGR 230 (3)	HIS 226 (3)	PSY 271 (3)
ART 271 (3)	CHM 271 (3)	ENG 125 (3)	HIS 227 (3)	PSY 275 (3)
ART 281 (3)	CJC 111 (3)	ENG 126 (3)	HIS 236 (3)	SOC 215 (3)
ART 282 (3)	CJC 121 (3)	ENG 133 (3)	HUM 123 (3)	SOC 232 (3)
ART 283 (3)	CJC 141 (3)	ENG 134 (3)	MAT 151A (1)	SOC 234 (3)
ART 284 (3)	COM 140 (3)	ENG 135 (3)	MAT 161 (3)	SOC 244 (3)
AST 111 (3)	COM 150 (3)	ENG 234 (3)	MAT 161A (1)	SOC 254 (3)
AST 111A (1)	COM 160 (3)	ENG 235 (3)	MAT 171A (1)	SPA 141 (3)
BIO 143 (2)	COM 250 (3)	ENG 271 (3)	MAT 172A (1)	SPA 181 (1)
BIO 155 (3)	DRA 120 (3)	ENG 272 (3)	MAT 280 (3)	SPA 182 (1)
BIO 163 (5)	DRA 124 (3)	ENG 273 (3)	MAT 285 (3)	SPA 221 (3)
			MUS 121 (4)	

Curriculum Requirements for the Transfer Core Diploma in Science (D10400)

Program Summary	Hours
General Education	44
<i>English/Composition</i>	6
<i>Humanities/Communication/Fine Arts</i>	9
<i>Social/Behavioral Sciences</i>	9
<i>Natural Sciences/Mathematics</i>	20
Other Courses	1
Program Total	45

General Education Core Requirements 44 Semester Hours

English Composition (6 semester hours)

- ENG 111 Expository Writing is required.
- Select an additional course from:
 - ENG 112 Argument-Based Research
 - ENG 113 Literature-Based Research
 - ENG 114 Professional Research and Reporting

Humanities/Fine Arts (9 semester hours)

- A communications course is required in lieu of one humanities course. COM 231, Public Speaking, is preferred. COM 120 is also acceptable.
- Select two additional courses from two of the following discipline areas: art, drama, foreign languages, humanities, literature, music, philosophy and religion. **One course must be a literature (*) course.**

ART 111	ENG 131*	FRE 111	HUM 110	HUM 220	REL 110
ART 114	ENG 231*	FRE 112	HUM 115	MUS 110	REL 111
ART 115	ENG 232*	FRE 211	HUM 120	MUS 112	REL 112
ART 117	ENG 241*	FRE 212	HUM 121	MUS 113	REL 211
DRA 111	ENG 242*	GER 111	HUM 122	MUS 114	REL 212
DRA 112	ENG 243*	GER 112	HUM 130	MUS 210	SPA 111
DRA 122	ENG 261*	GER 211	HUM 150	PHI 210	SPA 112
DRA 126	ENG 262*	GER 212	HUM 160	PHI 215	SPA 211
DRA 211			HUM 211	PHI 230	SPA 212
			HUM 212	PHI 240	

Social/Behavioral Sciences (9 semester hours)

Select three courses from three of the following discipline areas: anthropology, economics, geography, political science, psychology and sociology. **One course must be a history (*) course.**

ANT 210	ECO 252	HIS 115*	PSY 150	SOC 210
ANT 220	GEO 111	HIS 131*	PSY 237	SOC 213
ANT 240	GEO 112	HIS 132*	PSY 239	SOC 220
ECO 151	HIS 111*	POL 110	PSY 241	SOC 225
ECO 251	HIS 112*	POL 120	PSY 281	SOC 240
		POL 210		

Natural Science/Mathematics (20 semester hours)

Natural Sciences (8 semester hours)

Select a minimum two-course sequence from the following general biology, general chemistry, or general physics courses.

BIO 111	CHM 151	PHY 151	PHY 251
and	and	and	and
BIO 112	CHM 152	PHY 152	PHY 252

Mathematics (6 semester hours)

- MAT 171 or higher is required. Select one course from:

MAT 171* Precalculus Algebra
 MAT 175* Precalculus
 MAT 172 Precalculus Trigonometry
 MAT 271 Calculus I
 MAT 272 Calculus II
 MAT 273 Calculus III

- Select a second course from the following:

MAT 151*	MAT 175*	MAT 272	CIS 110
MAT 172*	MAT 271	MAT 273	CIS 115

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

Either BIO 110 or BIO 111 count as the A.A. science requirement, not both. Six additional semester hours may be selected from either natural sciences (listed below) or mathematics (listed above):

BIO 110	BIO 130	CHM 132	CHM 136	GEL 113
BIO 111	BIO 140/	CHM 135	GEL 111	GEL 230
BIO 120	BIO 140A			

Other Required Hours (1 Semester Hour)

- ACA 115, Success and Study Skills is required

Total Semester Hours

45

Pre-major Articulation Agreements

Pre-major Articulation Agreements are agreements between the 16-member University of North Carolina system, some private colleges and universities, and the 58 North Carolina Community Colleges. The agreements state that if you follow one of the pre-major tracks offered by the college (see list below), have no grade below "C," and are accepted by the senior institution, you will be eligible to apply for admission as a junior in that major. Pre-major articulation agreements are available from Student Services and academic advisors, or on the web at: www.ga.unc.edu/student_info/caa/.

CAUTION: You MUST see your advisor before registering for one of these programs!

Associate in Arts and Associate in Science Degree – Pre-major Tracks

Associate in Arts

Anthropology
 Art Education
 Business Administration,
 Accounting, Economics,
 Finance and Marketing
 Business Education and Marketing Education
 Communication and Communication Studies
 Computer Science
 Criminal Justice
 Elementary Education
 English
 English Education
 Geography
 Health Education
 History
 Information Systems
 Liberal Studies
 Mass Communication/Journalism
 Middle Grade Education
 Nursing
 Physical Education
 Political Science
 Psychology
 Social Science (Secondary Education)
 Social Work
 Sociology
 Special Education

Associate in Science

Biology and Biology Education
 Chemistry and Chemistry Education
 Engineering
 Mathematics
 Mathematics Education

Elementary and Special Education 2+2 Agreements

The 2+2 Agreement allows students who successfully complete two years at A-B Tech to transfer seamlessly into their next two years in a highly acclaimed teacher education program. The 2+2 Agreement outlines which credits transfer and which additional courses an A-B Tech transfer student must complete at the senior institution to earn a bachelor's degree in education. Please see an advisor in the Transfer Advising Center for information about the program and the colleges which offer the 2+2 Agreement.

Lateral Entry Program

The lateral entry program is an alternative route to teaching for qualified individuals outside of the public education system. The individual is hired by a school system, which recommends the individual for a lateral-entry license. The individual is issued a two-year lateral-entry license. The license may be extended annually for one additional year beyond the two years. Lateral entry teachers must meet testing requirements within the first 2 years of employment and complete all course requirements within a three year period. Please contact Lori Seiderman for information about the program and the college which offers the lateral entry program or contact the instructor for Teacher Education for Secondary Schools in the Arts & Sciences Division.

Biotechnology

The Biotechnology curriculum is designed to meet the increasing demands for skilled Bioprocessing technicians in various fields of bioprocess manufacturing, pharmaceutical manufacturing, and chemical manufacturing.

Course work emphasizes Bioprocessing, biology, chemistry, mathematics, and technical communications. The curriculum objectives are designed to prepare graduates to serve in three distinct capacities: Bioprocessing technician, research assistant to biologist or chemist; and quality control/quality assurance technician.

Graduates may find employment in various areas of industry and government, including biopharmaceutical processing, Bioprocessing, chemical processing, research and development, sales, and customer service.

Biotechnology Associate in Applied Science Degree (A20100)

Courses requiring a grade of "C" or better: BIO, BTC, CHM, COE

General Education Requirements		Credits
ACA 115	Success and Study Skills	1
COM 231	Public Speaking	3
ENG 111	Expository Writing	3
ENG 114	Professional Research & Reporting	3
MAT 161	College Algebra	3
MAT 161A	College Algebra Lab	1
	Humanities/Fine Arts Elective	3
	Social/Behavioral Science Elective	3

Major Requirements		Credits
BIO 111	General Biology I	4
BIO 112	General Biology II	4
BIO 275	Microbiology	4
BTC 181	Basic Lab Techniques	4
BTC 250	Molecular Genetics	3
BTC 270	Recombinant DNA Tech	4
BTC 282	Biotechnology Fermentation I	4
BTC 283	Biotech Fermentation II	4
BTC 285	Cell Culture	3
BTC 286	Immunological Techniques	4
BTC 288	Biotech Lab Experience (or COE 211 Co-op Work Experience)	2
CHM 132	Organic & Biochemistry	4
CHM 151	General Chemistry I (or CHM 131 and CHM 131A)	4
CIS 110	Computers Concepts	3
MAT 151	Statistics	3
MAT 151A	Statistics Lab	1
Total Credit Hours Required		75

General Occupational Technology (A55280)

The General Occupational Technology curriculum provides individuals with an opportunity to upgrade their skills and to earn an associate degree or diploma by taking courses suited for their occupational interests and/or needs.

The curriculum content will be individualized for students according to their occupational interests and needs. A program of study for each student will be selected from non-developmental level courses offered by the College.

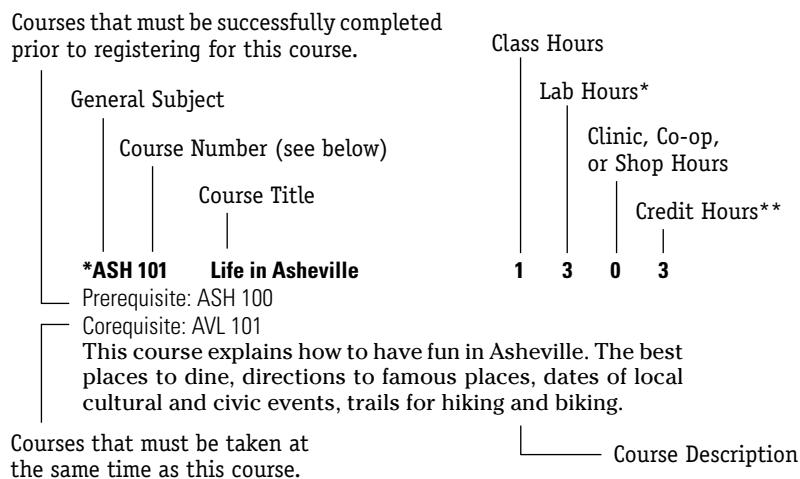
Graduates will become more effective workers, better qualified for advancements within their field of employment, and become qualified for a wide range of entry-level employment opportunities. Please see a counselor for additional information.

A.A.S. Degree Program Summary	Credit Hours
General Education	15
Major Hours	49
Other Required Hours	0-7
Program Total	64-71

Diploma Program Summary	Credit Hours
General Education	6
Major Hours	30
Other Required Hours	0-4
Program Total	36-40

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.



* 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.**

Course Abbreviation Contents

ACA	Academic Related.....	130	HEA	Health.....	184
ACC	Accounting.....	130	HET	Heavy Equipment and Transport Technology.....	185
AHR	Air Conditioning, Heating, and Refrigeration.....	131	HIS	History.....	185
ALT	Alternative Energy Technology.....	132	HRM	Hotel and Restaurant Management.....	187
ANT	Anthropology.....	132	HSE	Human Services.....	188
ARC	Architecture.....	133		A.A.S. Humanities/Fine Arts General Education Electives.....	189
ART	Art.....	133	HUM	Humanities.....	190
AST	Astronomy.....	136	HYD	Hydraulics.....	191
ATR	Automation Training.....	136	ISC	Industrial Science.....	191
AUT	Automotive.....	136	LAR	Landscape Architecture.....	191
BIO	Biology.....	138	MAC	Machining.....	192
BPA	Baking and Pastry Arts.....	140	MAT	Mathematics.....	194
BPR	Blueprint Reading.....	141	MEC	Mechanical.....	196
BTC	Biotechnology.....	141	MED	Medical Assisting.....	197
BUS	Business Administration.....	142	MHA	Mental Health.....	199
CAB	Cabinetmaking.....	144	MKT	Marketing and Retailing.....	199
CAR	Carpentry.....	144	MLT	Medical Laboratory Technology.....	200
CAT	Computed Tomography.....	145	MNT	Maintenance.....	201
CCT	Cyber Crime.....	145	MRI	Magnetic Resonance Imaging.....	201
CET	Computer Engineering Technology.....	146	MTH	Therapeutic Massage.....	202
CHM	Chemistry.....	146	MUS	Music.....	202
CIS	Information Systems.....	148	NET	Networking Technology.....	204
CIV	Civil Engineering.....	148	NOS	Networking Operating Systems.....	205
CJC	Criminal Justice.....	150	NUR	Nursing.....	205
CMT	Construction Management.....	152	OST	Office Administration.....	206
COE	Cooperative Education.....	153	PBT	Phlebotomy.....	208
COM	Communications.....	154	PCS	Professional Crafts: Sculpture.....	208
COS	Cosmetology.....	154	PCJ	Professional Crafts: Jewelry.....	209
CSC	Computer Programming.....	156	PED	Physical Education.....	209
CST	Construction.....	156	PHI	Philosophy.....	211
CTS	Computer Information Technology.....	156	PHS	Physical Science.....	212
CUL	Culinary.....	157	PHY	Physics.....	212
DBA	Database Management Technology.....	159	PLA	Plastics.....	213
DDT	Developmental Disabilities.....	160	POL	Political Science.....	213
DEN	Dental.....	160	PSY	Psychology.....	214
DFT	Drafting.....	162	RAD	Radiography.....	215
DME	Digital Media Technology.....	163	REA	Real Estate Appraisal.....	217
DRA	Drama.....	164	RED	Reading.....	218
ECO	Economics.....	166	REL	Religion.....	218
EDU	Education.....	166	RLS	Real Estate.....	218
ENG	Engineering.....	170	RSM	Resort and Spa Management.....	219
ELC	Electrical.....	171	SAB	Substance Abuse.....	219
ELN	Electronics.....	173	SEC	Information Systems Security.....	219
EMS	Emergency Medical Science.....	174		A.A.S. Social / Behavioral Sciences General Education Electives.....	220
ENG	English.....	176	SOC	Sociology.....	221
ENV	Environmental Science.....	179	SON	Medical Sonography.....	222
ETR	Entrepreneurship.....	179	SPA	Spanish.....	223
FIP	Fire Protection Technology.....	180	SRV	Surveying.....	224
FRE	French.....	181	SUR	Surgical Technology.....	225
FVP	Film and Video Production.....	182	SST	Sustainability Technologies.....	225
GEL	Geology.....	182	SWK	Social Work.....	226
GEO	Geography.....	183	VET	Veterinary Medical Technology.....	226
GER	German.....	183	WEB	Web Technologies.....	228
GIS	Geographic Information Systems.....	184	WLD	Welding.....	229

Academic Related

ACA 115 Success and Study Skills 0 2 1

Prerequisites: None

Corequisites: None

Available: Fall, Spring, Summer

This course provides an orientation to the campus resources and academic skills necessary to achieve educational objectives. Emphasis is placed on an exploration of facilities and services, study skills, library skills, self-assessment, wellness, goal-setting, and critical thinking. Upon completion, students should be able to manage their learning experiences to successfully meet educational goals.

Accounting

ACC 120 Principles of Financial Accounting 3 2 4

Prerequisites: None

Corequisites: None

Available: Fall

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

ACC 121 Principles of Managerial Accounting 3 2 4

Prerequisites: ACC 120

Corequisites: None

Available: Spring

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

ACC 129 Individual Income Taxes 2 2 3

Prerequisites: None

Corequisites: None

Available: Fall

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

ACC 130 Business Income Taxes 2 2 3

Prerequisites: ACC 129

Corequisites: None

Available: Spring

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

ACC 131 Federal Income Taxes 2 2 3

Prerequisites: None

Corequisites: None

Available: As Needed

This course provides an overview of federal income taxes for individuals, partnerships, and corporations. Topics include tax law, electronic research and methodologies, and the use of technology for the preparation of individual and business tax returns. Upon completion, students should be able to analyze basic tax scenarios, research applicable tax law, and complete federal tax returns for individuals, partnerships, and corporations.

ACC 140 Payroll Accounting 1 2 2

Prerequisites: ACC 115 or ACC 120

Corequisites: None

Available: Spring

This course covers federal and state laws pertaining to wages, payroll taxes, payroll tax forms, and journal and general ledger transactions. Emphasis is placed on computing wages; calculating social security, income, and unemployment taxes; preparing appropriate payroll tax forms; and journalizing/posting transactions. Upon completion, students should be able to analyze data, make appropriate computations, complete forms, and prepare accounting entries using appropriate technology.

ACC 150 Accounting Software Applications 1 2 2

Prerequisites: ACC 115 or ACC 120

Corequisites: None

Available: Summer

This course introduces microcomputer applications related to accounting systems. Topics include general ledger, accounts receivable, accounts payable, inventory, payroll, and correcting, adjusting, and closing entries. Upon completion, students should be able to use a computer accounting software package to solve accounting problems.

ACC 180 Practices in Bookkeeping 3 0 3

Prerequisites: ACC 120

Corequisites: None

Available: Spring

This course provides advanced instruction in bookkeeping and record-keeping functions. Emphasis is placed on mastering adjusting entries, correction of errors, depreciation, payroll, and inventory. Upon completion, students should be able to conduct all key bookkeeping functions for small businesses.

*ACC 220 Intermediate Accounting I 3 2 4

Prerequisites: ACC 120

Corequisites: None

Available: Fall

This course is a continuation of the study of accounting principles with in-depth coverage of theoretical concepts and financial statements. Topics include generally accepted accounting principles and extensive analyses of financial statements. Upon completion, students should be able to demonstrate competence in the conceptual framework underlying financial accounting, including the application of financial standards.

ACC 240 Government & Not-for-Profit Accounting 3 0 3

Prerequisites: ACC 121

Corequisites: None

Available: Spring

This course introduces principles and procedures applicable to governmental and not-for-profit organizations. Emphasis is placed on various budgetary accounting procedures and fund accounting. Upon completion, students should be able to demonstrate an understanding of the principles involved and display an analytical problem-solving ability for the topics covered.

ACC 269 Auditing and Assurance Services*3 0 3**

Prerequisites: ACC 220

Corequisites: None

Available: Spring

This course introduces selected topics pertaining to the objectives, theory and practices in engagements providing auditing and other assurance services. Topics will include planning, conducting and reporting, with emphasis on the related professional ethics and standards. Upon completion, students should be able to demonstrate an understanding of the types of professional services, the related professional standards, and engagement methodology.

Air Conditioning, Heating, and Refrigeration

AHR 110 Introduction to Refrigeration*2 6 5**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course introduces the basic refrigeration process used in mechanical refrigeration and air conditioning systems. Topics include terminology, safety, and identification and function of components; refrigeration cycle; and tools and instrumentation used in mechanical refrigeration systems. Emphasis will be placed on how refrigeration theory, principles and practice are used in the refrigeration (cooling trades). Upon completion, students should be able to identify refrigeration systems and components, explain the refrigeration process, and use the tools and instrumentation of the trade.

AHR 111 HVAC Electricity**2 2 3**

Prerequisites: None

Corequisites: None

Available: Fall

This course introduces electricity as it applies to HVACR equipment. Emphasis is placed on power sources, interaction of electrical components, wiring of simple circuits, and the use of electrical test equipment. Upon completion, students should be able to demonstrate good wiring practices and the ability to read simple wiring diagrams.

AHR 112 Heating Technology*2 4 4**

Prerequisites: None

Corequisites: None

Available: Fall

This course covers the fundamentals of heating including oil, gas, and electric heating systems. Topics include safety, tools and instrumentation, system operating characteristics, installation techniques, efficiency testing, electrical power, and control systems. Upon completion, students should be able to explain the basic oil, gas, and electrical heating systems and describe the major components of a heating system.

AHR 113 Comfort Cooling*2 4 4**

Prerequisites: None

Corequisites: None

Available: Spring

This course covers the installation procedures, system operations, and maintenance of residential and light commercial comfort cooling systems. Topics include terminology, component operation, and testing and repair of equipment used to control and produce assured comfort levels. Upon completion, students should be able to use psychometrics, manufacturer specifications, and test instruments to determine proper system operation.

AHR 114 Heat Pump Technology*2 4 4**

Prerequisites: AHR 110 or AHR 113

Corequisites: None

Available: Fall, Summer

This course covers the principles of air source and water source heat pumps. Emphasis is placed on safety, modes of operation, defrost systems, refrigerant charging, and system performance. Upon completion, students should be able to understand and analyze system performance and perform routine service procedures.

AHR 115 Refrigeration Systems*1 3 2**

Prerequisites: AHR 110

Corequisites: None

Available: As Needed

This course introduces refrigeration systems and applications. Topics include defrost methods, safety and operational control, refrigerant piping, refrigerant recovery and charging, and leak testing. Emphasis will be placed on how refrigeration theory, principles and practice are used in the air conditioning trade. Upon completion, students should be able to assist in installing and testing refrigeration systems and perform simple repairs.

AHR 125 HVAC Electronics*1 3 2**

Prerequisites: None

Corequisites: AHR 111 or ELC 111

Available: Spring

This course introduces the common electronic control components in HVAC systems. Emphasis is placed on identifying electronic components and their functions in HVAC systems and motor-driven control circuits. Upon completion, students should be able to identify components, describe control circuitry and functions, and use test instruments to measure electronic circuit values and identify malfunctions.

AHR 130 HVAC Controls*2 2 3**

Prerequisites: AHR 111 or ELC 111

Corequisites: None

Available: Spring

This course covers the types of controls found in residential and commercial comfort systems. Topics include electrical and electronic controls, control schematics and diagrams, test instruments, and analysis and troubleshooting of electrical systems. Upon completion, students should be able to diagnose and repair common residential and commercial comfort systems controls.

AHR 160 Refrigerant Certification**1 0 1**

Prerequisites: None

Corequisites: None

Available: Summer

This course covers the requirements for the EPA certification examinations. Topics include small appliances, high pressure systems, and low pressure systems. Upon completion, students should be able to demonstrate knowledge of refrigerants and be prepared for the EPA certification examinations.

AHR 170 Heating Lab**0 3 1**

Prerequisites: None

Corequisites: AHR 112

Available: Fall, Spring

This course provides a laboratory experience in heating technology. Emphasis is placed on providing practical experience in the fundamentals of heating. Upon completion, students should be able to demonstrate an understanding of electric, oil, and gas fueled heating systems.

AHR 172 Heat Pump Lab**0 3 1**

Prerequisites: None

Corequisites: AHR 114

Available: Fall, Summer

This course provides a laboratory experience in heat pump technology. Emphasis is placed on providing practical experience with air source and water heat pumps. Upon completion, students should be able to demonstrate an understanding of heat pump year round comfort systems.

AHR 210 Residential Building Code*1 2 2**

Prerequisites: Basic computer literacy is necessary (if you do not have basic skills, CTS 060 will give you the foundation for this course)

Corequisites: None

Available: Fall, Spring

This course covers the residential building codes that are applicable to the design and installation of HVAC systems. Topics include current residential codes as applied to HVAC design, service, and installation. Upon completion, students should be able to demonstrate the correct usage of residential building codes that apply to specific areas of the HVAC trade.

AHR 211 Residential System Design*2 2 3**

Prerequisites: None

Corequisites: None

Available: As Needed

This course introduces the principles and concepts of conventional residential heating and cooling system design. Topics include heating and cooling load estimating, basic psychometrics, equipment selection, duct system selection, and system design. Upon completion, students should be able to design a basic residential heating and cooling system.

AHR 212 Advanced Comfort Systems*2 6 4**

Prerequisites: AHR 114

Corequisites: None

Available: As Needed

This course covers water-cooled comfort systems, water-source/geothermal heat pumps, and high efficiency heat pump systems including variable speed drives and controls. Emphasis is placed on the application, installation, and servicing of water-source systems and the mechanical and electronic control components of advanced comfort systems. Upon completion, students should be able to test, analyze, and troubleshoot water-cooled comfort systems, water-source/geothermal heat pumps, and high efficiency heat pumps. Hydronic (hot water) and steam heating systems will also be studied.

Alternative Energy Technology**ALT 120 Renewable Energy Tech****2 2 3**

Prerequisites: AHR 111, ELC 111, ELC 112 or ELC 139

Corequisites: SST 130AB

Available: As Needed

This course provides an introduction to multiple technologies that allow for the production and conservation of energy from renewable sources. Topics include hydro-electric, wind power, passive and active solar energy, tidal energy, appropriate building techniques, and energy conservation methods. Upon completion, students should be able to demonstrate an understanding of renewable energy production and its impact on humans and their environment.

ALT 220 Photovoltaic Sys Tech**2 3 3**

Prerequisites: ALT 120

Corequisites: SST 130BB

Available: As Needed

This course introduces the concepts, tools, techniques, and materials needed to understand systems that convert solar energy into electricity with photovoltaic (pv) technologies. Topics include site analysis for system integration, building codes, and advances in photovoltaic technology. Upon completion, students should be able to demonstrate an understanding of the principles of photovoltaic technology and current applications.

ALT 240 Wind & Hydro Power Sys**2 2 3**

Prerequisite: None

Corequisites: None

Available: As Needed

This course introduces concepts, designs, tools, techniques, and material requirements for systems that convert wind and water into usable energy. Topics include the analysis, measurement, and estimation of potential energy of wind and water systems. Upon completion, students should be able to demonstrate an understanding of the technologies associated with converting wind and water into a viable energy source.

ALT 250 Thermal Systems**2 2 3**

Prerequisites: None

Corequisites: None

Available: As Needed

This course introduces concepts, tools, techniques, and materials used to convert thermal energy into a viable, renewable energy resource. Topics include forced convection, heat flow and exchange, radiation, the various elements of thermal system design, regulations, and system installation and maintenance. Upon completion, students should be able to demonstrate an understanding of geothermal and solar thermal systems and corresponding regulations.

Anthropology**ANT 210 General Anthropology****3 0 3**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course introduces the physical, archaeological, linguistic, and ethnological fields of anthropology. Topics include human origins, genetic variations, archaeology, linguistics, primatology, and contemporary cultures. Upon completion, students should be able to demonstrate an understanding of the four major fields of anthropology. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

ANT 220 Cultural Anthropology**3 0 3**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course introduces the nature of human culture. Emphasis is placed on cultural theory, methods of fieldwork, and cross-cultural comparisons in the areas of ethnology, language, and the cultural past. Upon completion, students should be able to demonstrate an understanding of basic cultural processes and how cultural data are collected and analyzed. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

ANT 240 Archaeology**3 0 3**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course introduces the scientific study of the unwritten record of the human past. Emphasis is placed on the process of human cultural evolution as revealed through archaeological methods of excavation and interpretation. Upon completion, students should be able to demonstrate an understanding of how archaeologists reconstruct the past and describe the variety of past human cultures. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

Architecture**ARC 111 Intro to Arch Technology****1 6 3**

Prerequisites: None

Corequisites: None

Available: Fall

This course introduces basic architectural drafting techniques, lettering, use of architectural and engineer scales, and sketching. Topics include orthographic, axonometric, and oblique drawing techniques using architectural plans, elevations, sections, and details; reprographic techniques; and other related topics. Upon completion, students should be able to prepare and print scaled drawings within minimum architectural standards.

ARC 112 Construction Materials and Methods**3 2 4**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course introduces construction materials and their methodologies. Topics include construction terminology, materials and their properties, manufacturing processes, construction techniques, and other related topics. Upon completion, students should be able to detail construction assemblies and identify construction materials and properties.

ARC 113 Residential Arch Tech**1 6 3**

Prerequisites: ARC 111

Corequisites: ARC 112

Available: Spring

This course covers intermediate residential working drawings. Topics include residential plans, elevations, sections, details, schedules, and other related topics. Upon completion, students should be able to prepare a set of residential working drawings that are within accepted architectural standards.

ARC 131 Building Codes**2 2 3**

Prerequisites: ARC 112 or CAR 111

Corequisites: None

Available: As Needed

This course covers the methods of researching building codes for specific projects. Topics include residential and commercial building codes. Upon completion, students should be able to determine the code constraints governing residential and commercial projects.

ARC 230 Environmental Systems**3 3 4**

Prerequisites: ARC 111 and MAT 121, MAT 151, MAT 161, MAT 171, or MAT 175

Corequisites: None

Available: Fall

This course introduces plumbing, mechanical (HVAC), and electrical systems for the architectural environment. Topics include basic plumbing, mechanical, and electrical systems for residential and/or commercial buildings with an introduction to selected code requirements. Upon completion, students should be able to perform related calculations.

ARC 240 Site Planning**2 2 3**

Prerequisites: ARC 111 or LAR 111

Corequisites: None

Available: As Needed

This course introduces the principles of site planning, grading plans, and earthwork calculations. Topics include site analysis, site work, site utilities, cut and fill, soil erosion control, and other related topics. Upon completion, students should be able to prepare site development plans and details and perform cut and fill calculations.

ARC 261 Solar Technology**1 2 2**

Prerequisites: ARC 111

Corequisites: None

Available: As Needed

This course introduces passive and active solar design theory and application. Topics include passive solar design, active solar theory, heat loss analysis, and other related topics. Upon completion, students should be able to design a passive solar system.

Art**ART 111 Art Appreciation****3 0 3**

Prerequisites: None

Corequisites: None

Available: Fall, Spring, Summer

This course introduces the origins and historical development of art. Emphasis is placed on the relationship of design principles to various art forms including but not limited to sculpture, painting, and architecture. Upon completion, students should be able to identify and analyze a variety of artistic styles, periods, and media. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

ART 114 Art History Survey I**3 0 3**

Prerequisites: None

Corequisites: None

Available: Fall

This course covers the development of art forms from ancient times to the Renaissance. Emphasis is placed on content, terminology, design, and style. Upon completion, students should be able to demonstrate an historical understanding of art as a product reflective of human social development. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

ART 115 Art History Survey II**3 0 3**

Prerequisites: None

Corequisites: None

Available: Spring

This course covers the development of art forms from the Renaissance to the present. Emphasis is placed on content, terminology, design, and style. Upon completion, students should be able to demonstrate an historical understanding of art as a product reflective of human social development. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

ART 117 Non-Western Art History**3 0 3**

Prerequisites: None

Corequisites: None

This course introduces non-Western cultural perspectives. Emphasis is placed on, but not limited to, African, Oriental, and Oceanic art forms throughout history. Upon completion, students should be able to demonstrate an historical understanding of art as a product reflective of non-Western social and cultural development. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

ART 121 Design I**0 6 3**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course introduces the elements and principles of design as applied to two-dimensional art. Emphasis is placed on the structural elements, the principles of visual organization, and the theories of color mixing and interaction. Upon completion, students should be able to understand and use critical and analytical approaches as they apply to two-dimensional visual art. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

ART 122 Design II**0 6 3**

Prerequisites: ART 121

Corequisites: None

Available: Fall, Spring

This course introduces basic studio problems in three-dimensional visual design. Emphasis is placed on the structural elements and organizational principles as applied to mass and space. Upon completion, students should be able to apply three-dimensional design concepts. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

ART 131 Drawing I**0 6 3**

Prerequisites: None

Corequisites: None

Available: Fall

This course introduces the language of drawing and the use of various drawing materials. Emphasis is placed on drawing techniques, media, and graphic principles. Upon completion, students should be able to demonstrate competence in the use of graphic form and various drawing processes. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

ART 132 Drawing II**0 6 3**

Prerequisites: ART 131

Corequisites: None

Available: Spring

This course continues instruction in the language of drawing and the use of various materials. Emphasis is placed on experimentation in the use of drawing techniques, media, and graphic materials. Upon completion, students should be able to demonstrate increased competence in the expressive use of graphic form and techniques. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

ART 171 Computer Art I**0 6 3**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course introduces the use of the computer as a tool for solving visual problems. Emphasis is placed on fundamentals of computer literacy and design through bit-mapped image manipulation. Upon completion, students should be able to demonstrate an understanding of paint programs, printers, and scanners to capture, manipulate, and output images. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

ART 214 Portfolio and Resume**0 2 1**

Prerequisites: None

Corequisites: None

Available: Spring

This course covers resume writing, interview skills, and the preparation and presentation of an art portfolio. Emphasis is placed on the preparation of a portfolio of original artwork, the preparation of a photographic portfolio, approaches to resume writing, and interview techniques. Upon completion, students should be able to mount original art for portfolio presentation, photograph and display a professional slide portfolio, and write an effective resume. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

ART 231 Printmaking I**0 6 3**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course introduces printmaking: its history, development techniques, and processes. Emphasis is placed on basic applications with investigation into image source and development. Upon completion, students should be able to produce printed images utilizing a variety of methods. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

ART 240 Painting I**0 6 3**

Prerequisites: ART 121 or ART 131

Corequisites: None

Available: Fall, Spring

This course introduces the language of painting and the use of various painting materials. Emphasis is placed on the understanding and use of various painting techniques, media, and color principles. Upon completion, students should be able to demonstrate competence in the use of creative processes directed toward the development of expressive form. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

ART 241 Painting II 0 6 3 Prerequisites: ART 240 Corequisites: None Available: Spring This course provides a continuing investigation of the materials, processes, and techniques of painting. Emphasis is placed on the exploration of expressive content using a variety of creative processes. Upon completion, students should be able to demonstrate competence in the expanded use of form and variety. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.	ART 264 Digital Photography I 1 4 3 Prerequisites: None Corequisites: None Available: Fall, Spring This course introduces digital photographic equipment, theory and processes. Emphasis is placed on camera operation, composition, computer photo manipulation and creative expression. Upon completion, students should be able to successfully expose, digitally manipulate, and print a well-conceived composition. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.
ART 244 Watercolor 0 6 3 Prerequisites: ART 121 or ART 131 Corequisites: None Available: Fall, Spring This course introduces basic methods and techniques used in watercolor. Emphasis is placed on application, materials, content, and individual expression. Upon completion, students should be able to demonstrate a variety of traditional and nontraditional concepts used in watercolor media. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.	ART 265 Digital Photography II 1 4 3 Prerequisites: Art 264 Corequisites: None Available: Spring This course provides exploration of the concepts and processes of photo manipulation through complex composite images, special effects, color balancing and image/text integration. Emphasis is placed on creating a personal vision and style. Upon completion, students should be able to produce well-executed images using a variety of photographic and photo manipulative approaches. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.
ART 260 Photography Appreciation 3 0 3 Prerequisites: None Corequisites: None Available: Fall, Spring This course introduces the origins and historical development of photography. Emphasis is placed on the study of composition and history of photography as an art form. Upon completion, students should be able to recognize and produce, using color transparencies, properly exposed, well-composed photographs. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.	ART 266 Videography I 0 6 3 Prerequisites: None Corequisites: None Available: Fall This course introduces various aspects of basic video production including concept development, scripting, camera operation, and post-production. Emphasis is placed on creative expression, camera handling, story boarding and editing. Upon completion, students should be able to demonstrate a basic understanding of video camera operation and production techniques. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.
ART 261 Photography I 0 6 3 Prerequisites: None Corequisites: None Available: Fall, Spring This course introduces photographic equipment, theory, and processes. Emphasis is placed on camera operation, composition, darkroom technique, and creative expression. Upon completion, students should be able to successfully expose, develop, and print a well-conceived composition. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.	ART 271 Computer Art II 0 6 3 Prerequisites: Art 171 Corequisites: None Available: Spring This course includes advanced computer imaging techniques. Emphasis is placed on creative applications of digital technology. Upon completion, students should be able to demonstrate command of computer systems and applications to express their personal vision. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.
ART 262 Photography II 0 6 3 Prerequisites: Art 261 Corequisites: None Available: Spring This course introduces the creative manipulation of alternative photographic materials and processes such as toning, hand coloring, infrared, and multiple exposure. Emphasis is placed on personal vision and modes of seeing. Upon completion, students should be able to create properly exposed images using a variety of photographic materials and processes. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.	ART 281 Sculpture I 0 6 3 Prerequisites: None Corequisites: None Available: Fall, Spring This course provides an exploration of the creative and technical methods of sculpture with focus on the traditional processes. Emphasis is placed on developing basic skills as they pertain to three-dimensional expression in various media. Upon completion, students should be able to show competence in a variety of sculptural approaches. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

ART 282 Sculpture II

0 6 3

Prerequisites: ART 281

Corequisites: None

Available: Spring

This course builds on the visual and technical skills learned in ART 281. Emphasis is placed on developing original solutions to sculptural problems in a variety of media. Upon completion, students should be able to express individual ideas using the techniques and materials of sculpture. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

ART 283 Ceramics I

0 6 3

Prerequisites: None

Corequisites: None

Available: Fall

This course provides an introduction to three-dimensional design principles using the medium of clay. Emphasis is placed on fundamentals of forming, surface design, glaze application, and firing. Upon completion, students should be able to demonstrate skills in slab and coil construction, simple wheel forms, glaze technique, and creative expression. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

ART 284 Ceramics II

0 6 3

Prerequisites: ART 283

Corequisites: None

Available: Spring

This course covers advanced hand building and wheel techniques. Emphasis is placed on creative expression, surface design, sculptural quality, and glaze effect. Upon completion, students should be able to demonstrate a high level of technical competence in forming and glazing with a development of three-dimensional awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

Astronomy**AST 111 Descriptive Astronomy**

3 0 3

Prerequisites: None

Corequisites: AST 111A

Available: Fall, Spring

This course introduces an overall view of modern astronomy. Topics include an overview of the solar system, the sun, stars, galaxies, and the larger universe. Upon completion, students should be able to demonstrate an understanding of the universe around them. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

AST 111A Descriptive Astronomy Lab

0 2 1

Prerequisites: None

Corequisites: AST 111

Available: Fall, Spring

The course is a laboratory to accompany AST 111. Emphasis is placed on laboratory experiences which enhance the materials presented in AST 111 and which provide practical experience. Upon completion, students should be able to demonstrate an understanding of the universe around them. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

Automation Training***ATR 112 Introduction to Automation**

2 3 3

Prerequisites: None

Corequisites: None

Available: As Needed

This course introduces the basic principles of automated manufacturing and describes the tasks that technicians perform on the job. Topics include the history, development, and current applications of robots and automated systems including their configuration, operation, components, and controls. Upon completion, students should be able to understand the basic concepts of automation and robotic systems.

***ATR 282 Robotics and CIM**

3 2 4

Prerequisites: None

Corequisites: None

Available: Spring

This course covers robotics and CIM. Topics include application, programming, and maintenance of robotic devices and the relationship between robotics and CIM. Upon completion, students should be able to safely program, operate, and maintain robots and understand the relationship between robotics and CIM.

Automotive***AUT 110 Introduction to Automotive Technology**

2 2 3

Prerequisites: None

Corequisites: None

Available: Fall

This course covers work-place safety, hazardous material and environmental regulations and procedures, proper use of hand tools, use of service information resources, and the basic concepts, systems and terms of automotive technology. Topics include familiarization with vehicle systems along with identification and proper use of various automotive hand and power tools. Upon completion, students should be able to describe safety and environmental procedures, terms associated with automobiles, identify and use basic tools and shop equipment.

***AUT 116 Engine Repair**

2 3 3

Prerequisites: None

Corequisites: AUT 116A

Available: Fall, Spring

This course covers the theory, construction, inspection, diagnosis, and repair of internal combustion engines and related systems. Topics include fundamental operating principles of engines and diagnosis, inspection, adjustment, and repair of automotive engines using appropriate service information. Upon completion, students should be able to perform basic diagnosis, measurement and repair of automotive engines using appropriate tools, equipment, procedures, and service information.

***AUT 116A Engine Repair Lab**

0 3 1

Prerequisites: None

Corequisites: AUT 116

Available: Fall, Spring

This course is an optional lab for the program that needs to meet NATEF hour standards but does not have a Co-op component in the program. Topics include diagnosis, inspection, adjustment, and repair of automotive engines using appropriate service information. Upon completion, students should be able to perform basic diagnosis, measurement and repair of automotive engines using appropriate tools, equipment, procedures, and service information.

*AUT 141 Suspension and Steering Systems 2 3 3 Prerequisites: None Corequisites: AUT 141A Available: Fall, Summer This course covers principles of operation, types, and diagnosis/repair of suspension and steering systems to include steering geometry. Topics include manual and power steering systems and standard and electronically controlled suspension and steering systems. Upon completion, students should be able to identify steering and suspension problems, service and repair steering and suspension components, check and adjust alignment angles, and repair and balance tires.	*AUT 163 Advanced Automotive Electricity/Electronics 2 3 3 Prerequisites: AUT 161 Corequisites: None Available: Fall, Spring This course covers basic electronic theory, wiring diagrams, test equipment, and diagnosis /repair/replacement of electronics, lighting, gauges, driver information, horn, wiper, accessories, and body modules. Topics include networking and module communication, circuit construction, wiring diagrams, circuit testing, and basic trouble shooting. Upon completion, students should be able to read and understand wiring diagrams, diagnose, test, and repair basic wiring, lighting, gauges, accessories, modules, and basic electronic concerns.
*AUT 141A Suspension and Steering Systems Lab 0 3 1 Prerequisites: None Corequisites: AUT 141 Available: Fall, Summer This course is an optional lab for the program that needs to meet NATEF hour standards but does not have a Co-op component in the program. Topics include manual and power steering systems and standard and electronically controlled suspension and steering systems. Upon completion, students should be able to identify steering and suspension problems, service and repair steering and suspension components, check and adjust alignment angles, and repair and balance tires.	*AUT 171 Automotive Climate Control 2 4 4 Prerequisites: None Corequisites: None Available: Summer This course covers the theory of refrigeration and heating, electrical/electronic/pneumatic controls, and diagnosis/repair of climate control systems. Topics include diagnosis and repair of climate control components and systems, recovery/recycling of refrigerants, and safety and environmental regulations. Upon completion, students should be able to describe the operation, diagnose, and safely service climate control systems using appropriate tools, equipment, and service information.
*AUT 151 Brake Systems 2 3 3 Prerequisites: None Corequisites: AUT 151A Available: Fall, Spring This course covers principles of operation and types, diagnosis, service, and repair of brake systems. Topics include drum and disc brakes involving hydraulic, vacuum boost, hydra-boost, electrically powered boost, and anti-lock and parking brake systems. Upon completion, students should be able to diagnose, service, and repair various automotive braking systems.	*AUT 181 Engine Performance 1 2 3 3 Prerequisites: None Corequisites: None Available: Spring, Summer This course covers the introduction, theory of operation, and basic diagnostic procedures required to restore engine performance to today's vehicles equipped with complex engine control systems. Topics include an overview of engine operation, ignition components and systems, fuel delivery, injection components and systems and emission control devices. Upon completion students should be able to describe operation of and diagnose/repair basic ignition, fuel and emission related drivability problems using appropriate test equipment and service information.
*AUT 151A Brake Systems Lab 0 3 1 Prerequisites: None Corequisites: AUT 151 Available: Fall, Spring This course is an optional lab for the program that needs to meet NATEF hour standards but does not have a Co-op component in the program. Topics include drum and disc brakes involving hydraulic, vacuum-boost, hydra-boost, electrically powered boost, and anti-lock, parking brake systems and emerging brake systems technologies. Upon completion, students should be able to diagnose, service, and repair various automotive braking systems.	*AUT 221 Automatic Transmissions/Transaxles 2 3 3 Prerequisites: None Corequisites: AUT 221A Available: Spring This course covers operation, diagnosis, service, and repair of automatic transmissions/transaxles. Topics include hydraulic, pneumatic, mechanical, and electrical/electronic operation of automatic drive trains and the use of appropriate service tools and equipment. Upon completion, students should be able to explain operational theory, diagnose and repair automatic drive trains.
*AUT 161 Basic Automotive Electricity 4 3 5 Prerequisites: None Corequisites: None Available: Fall This course covers basic electrical theory, wiring diagrams, test equipment, and diagnosis/repair/replacement of batteries, starters, and alternators. Topics include Ohm's Law, Circuit construction, wiring diagrams, circuit testing, and basic trouble shooting. Upon completion, students should be able to read and understand wiring diagrams, diagnose, test, and repair basic wiring, battery, starting, charging, and basic electrical concerns.	*AUT 221A Automatic Transmissions/Transaxles Lab 0 3 1 Prerequisites: None Corequisites: AUT 221 Available: Spring This course is an optional lab for the program that needs to meet NATEF hour standards but does not have a Co-op component in the program and covers diagnosis, service, and repair of automatic transmissions/transaxles. Topics include hydraulic, pneumatic, mechanical, and electrical/electronic operation of automatic drive trains and the use of appropriate service tools and equipment. Upon completion, students should be able to diagnose and repair automatic drive trains.

***AUT 231 Manual Trans/Transaxles and Drivetrains** 2 3 3
 Prerequisites: None
 Corequisites: AUT 231A
 Available: Fall
 This course covers the operation, diagnosis, and repair of manual transmissions/transaxles, clutches, driveshafts, axles, and final drives. Topics include theory of torque, power flow, and manual drive train servicing and repair using appropriate service information, tools, and equipment. Upon completion, students should be able to explain operational theory, diagnose and repair manual drive trains.

***AUT 231A Manual Trans/Transaxles and Drivetrains Lab** 0 3 1
 Prerequisites: None
 Corequisites: AUT 231
 Available: Fall
 This course is an optional lab for the program that needs to meet NATEF hour standards but does not have a Co-op component in the program. Topics include manual drive train diagnosis, service and repair using appropriate service information, tools, and equipment. Upon completion, students should be able to diagnose and repair manual drive trains.

***AUT 281 Advanced Engine Performance** 2 2 3
 Prerequisites: None
 Corequisites: None
 Available: Spring, Summer
 This course utilizes service information and specialized test equipment to diagnose and repair power train control systems. Topics include computerized ignition, fuel and emission systems, related diagnostic tools and equipment, data communication networks, and service information. Upon completion, students should be able to perform diagnosis and repair.

***AUT 285 Intro to Alternative Fuels** 2 2 3
 Prerequisites: None
 Corequisites: None
 Available: Spring, Summer
 This course is an overview of alternative fuels and alternative fueled vehicles. Topics include composition and use of alternative fuels, including compressed natural gas, propane, biodiesel, ethanol, electric, hydrogen, synthetic fuels, and vehicles that use alternative fuels. Upon completion, students should be able to identify alternative fuel vehicles, explain how each alternative fuel delivery system works, and make minor repairs.

Biology

BIO 090 Foundations of Biology 3 2 4
 Prerequisites: None
 Corequisites: RED 090
 Available: As Needed
 This course introduces basic biological concepts. Topics include basic biochemistry, cell structure and function, interrelationships among organisms, scientific methodology, and other related topics. Upon completion, students should be able to demonstrate preparedness for college-level biology courses.

BIO 094 Concepts of Human Biology 3 2 4
 Prerequisites: None
 Corequisites: ENG 095 or RED 090
 Available: As Needed
 This course focuses on fundamental concepts of human biology. Topics include terminology, biochemistry, cell biology, tissues, body systems, and other related topics. Upon completion, students should be able to demonstrate preparedness for college-level anatomy and physiology courses.

BIO 110 Principles of Biology 3 3 4
 Prerequisites: None
 Corequisites: None
 Available: Fall, Spring, Summer
 This course provides a survey of fundamental biological principles for non-science majors. Emphasis is placed on basic chemistry, cell biology, metabolism, genetics, taxonomy, evolution, ecology, diversity, and other related topics. Upon completion, students should be able to demonstrate increased knowledge and better understanding of biology as it applies to everyday life. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

BIO 111 General Biology I 3 3 4
 Prerequisites: None
 Corequisites: None
 Available: Fall, Spring
 This course introduces the principles and concepts of biology. Emphasis is placed on basic biological chemistry, cell structure and function, metabolism and energy transformation, genetics, evolution, classification, and other related topics. Upon completion, students should be able to demonstrate understanding of life at the molecular and cellular levels. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

BIO 112 General Biology II 3 3 4
 Prerequisites: BIO 111
 Corequisites: None
 Available: Fall, Spring
 This course is a continuation of BIO 111. Emphasis is placed on organisms, biodiversity, plant and animal systems, ecology, and other related topics. Upon completion, students should be able to demonstrate comprehension of life at the organismal and ecological levels. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

BIO 120 Introductory Botany 3 3 4
 Prerequisites: BIO 110 or BIO 111
 Corequisites: None
 Available: Fall, Spring
 This course provides an introduction to the classification, relationships, structure, and function of plants. Topics include reproduction and development of seed and non-seed plants, levels of organization, form and function of systems, and a survey of major taxa. Upon completion, students should be able to demonstrate comprehension of plant form and function, including selected taxa of both seed and non-seed plants. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

BIO 130 Introductory Zoology 3 3 4 Prerequisites: BIO 110 or BIO 111 Corequisites: None Available: Fall, Spring This course provides an introduction to the classification, relationships, structure, and function of major animal phyla. Emphasis is placed on levels of organization, reproduction and development, comparative systems, and a survey of selected phyla. Upon completion, students should be able to demonstrate comprehension of animal form and function including comparative systems of selected groups. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.	BIO 161 Intro to Human Biology 3 0 3 Prerequisites: None Corequisites: None Available: Fall This course provides a basic survey of human biology. Emphasis is placed on the basic structure and function of body systems and the medical terminology used to describe normal and pathological states. Upon completion, students should be able to demonstrate an understanding of normal anatomy and physiology and the appropriate use of medical terminology.
BIO 140 Environmental Biology 3 0 3 Prerequisites: None Corequisites: None Available: Fall, Spring This course introduces environmental processes and the influence of human activities upon them. Topics include ecological concepts, population growth, natural resources, and a focus on current environmental problems from scientific, social, political, and economic perspectives. Upon completion, students should be able to demonstrate an understanding of environmental interrelationships and of contemporary environmental issues. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.	BIO 163 Basic Anatomy and Physiology 4 2 5 Prerequisites: RED 090 Corequisites: None Available: Fall, Spring This course provides a basic study of the structure and function of the human body. Topics include a basic study of the body systems as well as an introduction to homeostasis, cells, tissues, nutrition, acid-base balance, and electrolytes. Upon completion, students should be able to demonstrate a basic understanding of the fundamental principles of anatomy and physiology and their interrelationships. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.
BIO 140A Environmental Biology Lab 0 3 1 Prerequisites: None Corequisites: BIO 140 Available: Fall, Spring This course provides a laboratory component to complement BIO 140. Emphasis is placed on laboratory and field experience. Upon completion, students should be able to demonstrate a practical understanding of environmental interrelationships and of contemporary environmental issues. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.	BIO 168 Anatomy and Physiology I 3 3 4 Prerequisites: RED 090 Corequisites: None Available: Fall, Spring, Summer This course provides a comprehensive study of the anatomy and physiology of the human body. Topics include body organization, homeostasis, cytology, histology, and the integumentary, skeletal, muscular, and nervous systems, and special senses. Upon completion, students should be able to demonstrate an in-depth understanding of principles of anatomy and physiology and their interrelationships. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.
BIO 143 Field Biology Minicourse 1 2 2 Prerequisites: None Corequisites: None Available: Summer This course introduces the biological and physical components of a field environment. Emphasis is placed on a local field environment with extended field trips to other areas. Upon completion, students should be able to demonstrate an understanding of the biological and physical components of the specific biological environment. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.	BIO 169 Anatomy and Physiology II 3 3 4 Prerequisites: BIO 168 Corequisites: None Available: Fall, Spring, Summer This course provides a continuation of the comprehensive study of the anatomy and physiology of the human body. Topics include the endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems as well as metabolism, nutrition, acid-base balance, and fluid and electrolyte balance. Upon completion, students should be able to demonstrate an in-depth understanding of principles of anatomy and physiology and their interrelationships. This course has been approved to satisfy the Comprehensive Articulation Agreement transferability as a premajor and/or elective course requirement.
BIO 155 Nutrition 3 0 3 Prerequisites: None Corequisites: None Available: Spring 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 175 General Microbiology 2 2 3 Prerequisites: Select One: BIO 110, BIO 111, BIO 163, BIO 165, BIO 168 Corequisites: None Available: Fall, Spring, Summer This course covers principles of microbiology with emphasis on microorganisms and human disease. Topics include an overview of microbiology and aspects of medical microbiology, identification and control of pathogens, disease transmission, host resistance, and immunity. Upon completion, students should be able to demonstrate knowledge of microorganisms and the disease process as well as aseptic and sterile techniques. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

BIO 223 Field Botany**2 3 3**

Prerequisites: BIO 112

Corequisites: None

Available: Spring

This course provides a field and laboratory study of local flora. Emphasis is placed on local flora classification, identification, and ecology by the use of keys and field studies. Upon completion, students should be able to use keys for the classification and identification of local flora and to demonstrate an understanding of plant ecology. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

BIO 224 Local Flora Spring**1 2 2**

Prerequisites: None

Corequisites: None

Available: Spring

This course provides an introduction to the identification of native plants. Emphasis is placed on spring wild flowers. Upon completion, students should be able to identify a variety of spring wild flowers and native plants. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

BIO 225 Local Flora Summer**1 2 2**

Prerequisites: None

Corequisites: None

Available: Summer

This course provides an introduction to the identification of native plants. Emphasis is placed on summer wild flowers. Upon completion, students should be able to identify a variety of summer wild flowers and native plants. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

BIO 226 Local Flora Fall**1 2 2**

Prerequisites: None

Corequisites: None

Available: Fall

This course provides an introduction to the identification of native plants. Emphasis is placed on fall wild flowers. Upon completion, students should be able to identify a variety of fall wild flowers and native plants. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

BIO 271 Pathophysiology**3 0 3**

Prerequisites: Select One: BIO 163, BIO 166, BIO 169

Corequisites: None

Available: Fall, Spring

This course provides an in-depth study of human pathological processes and their effects on homeostasis. Emphasis is placed on interrelationships among organ systems in deviations from homeostasis. Upon completion, students should be able to demonstrate a detailed knowledge of pathophysiology. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability pre-major and/or elective course requirement.

BIO 275 Microbiology**3 3 4**

Prerequisites: Select One: BIO 110, BIO 111, BIO 163, BIO 165, BIO 168

Corequisites: None

Available: Fall, Spring, Summer

This course covers principles of microbiology and the impact these organisms have on man and the environment. Topics include the various groups of microorganisms, their structure, physiology, genetics, microbial pathogenicity, infectious diseases, immunology, and selected practical applications. Upon completion, students should be able to demonstrate knowledge and skills including microscopy, aseptic technique, staining, culture methods, and identification of microorganisms. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

Baking and Pastry Arts***BPA 120 Petit Fours & Pastries****1 4 3**

Prerequisites: CUL 110 and CUL 160

Corequisites: None

Available: Spring

This course introduces the basic principles of the preparation of petit fours and individual dessert pastries. Emphasis is placed on traditional and contemporary petit fours and pastries, utilizing updated production methods. Upon completion, students should be able to produce individual pastries and petit fours for buffet and special event settings.

BPA 130 European Cakes and Tortes*1 4 3**

Prerequisites: CUL 110 and CUL 160

Corequisites: None

Available: Spring

This course introduces the production of a wide variety of classical and modern cakes suitable for restaurants, retail shops and large-scale production. Emphasis is placed on advanced techniques of mixing, filling, glazing and icing. Upon completion, students should be able to assemble and decorate a variety of cakes/tortes, including Dobos, Sacher, and Linzer tortes and Black Forest cake.

BPA 150 Artisan & Specialty Bread*1 6 4**

Prerequisites: CUL 110, CUL 142 and CUL 160

Corequisites: None

Available: Spring

This course provides an advanced study in the art and craft of bread making. Topics include pertinent formulas and techniques associated with naturally leavened loaves, hearth breads, focaccia, flat breads, and other breads utilizing a variety of grains. Upon completion, students should be able to prepare artisan and specialty breads that meet or exceed the expectations of restaurant and retail publics.

BPA 210 Cake Design & Decorating*1 4 3**

Prerequisites: CUL 110 and CUL 160

Corequisites: None

Available: Fall

This course covers advanced concepts in the design and decoration of wedding cakes and other specialty cakes. Topics include baking, filling and assembling cakes; cake design; and finishing techniques utilizing gum paste, fondant, and royal icing; and advanced piping skills. Upon completion, students should be able to design, create and finish wedding and specialty cakes.

***BPA 220 Confection Artistry**

1 6 4

Prerequisites: BPA 240, CUL 110 and CUL 160

Corequisites: None

Available: Spring

This course introduces the principles and techniques of decorative sugar work and confectionary candy. Topics include nougat, marzipan modeling, pastillage and cocoa painting, confection candy and a variety of sugar techniques including blown, spun, poured and pulled. Upon completion, students should be able to prepare edible centerpieces and confections to enhance dessert buffets and plate presentations.

***BPA 230 Chocolate Artistry**

1 4 3

Prerequisites: BPA 240, CUL 110 and CUL 160

Corequisites: None

Available: Spring

This course provides a study in the art and craft of chocolate. Topics include chocolate tempering, piping, molding; decorative work associated with cakes and centerpieces; and the candy production techniques of filling, enrobing and dipping. Upon completion, students should be able to properly temper chocolate, and produce a variety of chocolate candies and decorative elements for garnishing desserts.

***BPA 240 Plated Desserts**

1 4 3

Prerequisites: BPA 120, BPA 130, CUL 110, CUL 160, and COE 112

Corequisites: None

Available: Fall

This course provides a study in the elements and principles of design as it relates to plated desserts. Topics include plate composition, portioning, flavor combinations, textures, eye appeal, balance, color harmony and plate decorating techniques such as stenciling, chocolate striping, and plate painting. Upon completion, students should be able to demonstrate competence in combining a variety of dessert components enhanced with plate decorating techniques.

***BPA 250 Dessert & Bread Production**

1 8 5

Prerequisites: COE 112, CUL 110 and CUL 160

Corequisites: None

Available: Fall

This course is designed to merge artistry and innovation with the practical baking and pastry techniques utilized in a production setting. Topics include quantity bread and roll-in dough production, plated and platter presentations, and seasonal/themed product utilization with an emphasis on cost effectiveness. Upon completion, students should be able to plan and prepare breads and desserts within a restaurant environment and determine production costs and selling prices.

***BPA 260 Pastry & Baking Marketing**

2 2 3

Prerequisites: BPA 210, BPA 240, BPA 250, and COE 112

Corequisites: BPA 220 and BPA 230

Available: Spring

This course examines the marketing concepts and merchandising trends utilized in bakery and pastry operations. Emphasis is placed on menu planning, pricing products and strategies, resale and wholesale distribution methods, legal implications, and advertising techniques. Upon completion, students should be able to create a marketing plan that will serve as a basis for a capstone experience.

Blueprint Reading**BPR 111 Blueprint Reading**

1 2 2

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course introduces the basic principles of blueprint reading. Topics include line types, orthographic projections, dimensioning methods, and notes. Upon completion, students should be able to interpret basic blueprints and visualize the features of a part.

BPR 121 Blueprint Reading: Mechanical

1 2 2

Prerequisites: BPR 111 or MAC 131

Corequisites: None

Available: Spring

This course covers the interpretation of intermediate blueprints. Topics include tolerancing, auxiliary views, sectional views, and assembly drawings. Upon completion, students should be able to read and interpret a mechanical working drawing.

BPR 130 Blueprint Reading/Construction

1 2 2

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course covers the interpretation of blueprints and specifications that are associated with the construction trades. Emphasis is placed on interpretation of details for foundations, floor plans, elevations, and schedules. Upon completion, students should be able to read and interpret a set of construction blueprints.

BPR 135 Schematics and Diagrams

2 0 2

Prerequisites: None

Corequisites: None

Available: Summer

This course introduces schematics and diagrams used in a variety of occupations. Topics include interpretation of wiring diagrams, assembly drawings, exploded views, sectional drawings, and service manuals, specifications, and charts. Upon completion, students should be able to research and locate components and assemblies denoting factory specifications and requirements from service and repair manuals.

Biotechnology**BTC 181 Basic Lab Techniques**

3 3 4

Prerequisites: Enrollment in the Biotechnology Program or Dept. Approval

Corequisites: None

Available: Summer

This course introduces the basic skills and knowledge necessary in a biological or chemical laboratory. Emphasis is placed on good manufacturing practices, safety, solution preparation, and equipment operation and maintenance following standard operating procedures. Upon completion, students should be able to prepare and perform basic laboratory procedures using labware, solutions, and equipment according to prescribed protocols.

BTC 250 Principles of Genetics**3 0 3**

Prerequisites: BIO 111

Corequisites: None

Available: Fall

This course covers the basic principles of molecular genetics. Topics will include Mendelian inheritance, DNA replication, RNA transcription, translation of proteins, chromosome structure, and evolution. Upon completion, students should be able to demonstrate knowledge of molecular genetics and principles of heredity.

BTC 270 Recombinant DNA Tech**3 3 4**

Prerequisites: (BTC 250 or BIO 250) and BTC 181

Corequisites: None

Available: Spring

This course covers basic methods in biotechnology for the manipulation of nucleic acids. Emphasis is placed on topics concerning techniques used in recombinant DNA technology, including PCR, restriction digests, mapping, cloning, and forensics. Upon completion, students should have an understanding of the theory, practice, and application of recombinant DNA techniques.

BTC 282 Biotech Fermentation I**2 6 4**

Prerequisites: BTC 181

Corequisites: None

Available: Fall

This course provides an introduction to fermentor classification and configuration for small-scale laboratory processes utilizing prokaryotic organisms to demonstrate techniques used in fermentation procedures. Topics include Batch Process Records, fermentor design, fermentation theory, and medium formulation as well as techniques used for cell harvesting, cell disruption and fractionation methods. Upon completion, students should be able to set up a fermentor; grow prokaryotic cells; and isolate and collect various fractions derived from fermentation.

BTC 283 Biotech Fermentation II**2 6 4**

Prerequisites: BTC 282

Corequisites: None

Available: Spring

This course introduces techniques for recovery of fermentation products to include removal of insolubles, product isolation, high resolution techniques and product polishing using eukaryotic cells. Topics include filter design, separation processes such as flocculation, coagulation, distillation, liquid-liquid extraction, different types of chromatography and emerging technologies for product recovery. Upon completion, students should be able to perform eukaryotic cell cultivation and various separation techniques used in small-scale fermentation with an understanding of scale-up procedures.

BTC 285 Cell Culture**2 3 3**

Prerequisites: BIO 175 or BIO 275

Corequisites: None

Available: Fall

This course introduces the theory and practices required to successfully initiate and maintain plant and animal cell cultures. Topics include aseptic techniques, the growth environment, routine maintenance of cell cultures, specialized culture techniques, and various applications. Upon completion, students should be able to demonstrate the knowledge and skills required to grow, maintain, and manipulate cells in culture.

BTC 286 Immunological Techniques**3 3 4**

Prerequisites: BTC 285 or Department Approval

Corequisites: None

Available: Spring

This course covers the principles and practices of modern immunology, including the interactions between the various cellular and chemical components of the immune response. Topics include antigens, humoral immunity, cellular immunity, complement, immunological assays, and hybridoma use and production. Upon completion, students should be able to discuss the immune response, perform immunological assays, and make monoclonal antibody-producing hybridomas.

BTC 288 Biotech Lab Experience**0 6 2**

Prerequisites: BIO 250 or BTC 270, and BTC 281, BTC 285, or BTC 286

Corequisites: None

Available: Summer

This course provides an opportunity to pursue an individual laboratory project in biotechnology. Emphasis is placed on developing, performing, and maintaining records of a project in a specific area of interest. Upon completion, students should be able to complete the project with accurate records and demonstrate an understanding of the process.

Business Administration**BUS 110 Introduction to Business****3 0 3**

Prerequisites: None

Corequisites: None

Available: Fall, Summer

This course provides a survey of the business world. Topics include the basic principles and practices of contemporary business. Upon completion, students should be able to demonstrate an understanding of business concepts as a foundation for studying other business subjects. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

BUS 115 Business Law I**3 0 3**

Prerequisites: None

Corequisites: None

Available: Summer

This course introduces the ethics and legal framework of business. Emphasis is placed on contracts, negotiable instruments, Uniform Commercial Code, and the working of the court systems. Upon completion, students should be able to apply ethical issues and laws covered to selected business decision-making situations. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

BUS 116 Business Law II**3 0 3**

Prerequisites: BUS 115

Corequisites: None

Available: As Needed

This course continues the study of ethics and business law. Emphasis is placed on bailments, sales, risk-bearing, forms of business ownership, and copyrights. Upon completion, students should be able to apply ethical issues and laws covered to selected business decision-making situations.

BUS 135 Principles of Supervision 3 0 3 Prerequisites: None Corequisites: None Available: Fall, Summer This course introduces the basic responsibilities and duties of the supervisor and his/her relationship to higher-level supervisors, subordinates, and associates. Emphasis is placed on effective utilization of the work force and understanding the role of the supervisor. Upon completion, students should be able to apply supervisory principles in the workplace.	BUS 217 Employment Law and Regulations 3 0 3 Prerequisites: None Corequisites: None Available: Spring This course introduces the principle laws and regulations affecting public and private organizations and their employees or prospective employees. Topics include fair employment practices, EEO, affirmative action, and employee rights and protections. Upon completion, students should be able to evaluate organization policy for compliance and assure that decisions are not contrary to law.
*BUS 137 Principles of Management 3 0 3 Prerequisites: None Corequisites: None Available: Spring, Summer This course is designed to be an overview of the major functions of management. Emphasis is placed on planning, organizing, controlling, directing, and communicating. Upon completion, students should be able to work as contributing members of a team utilizing these functions of management. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.	BUS 225 Business Finance 2 2 3 Prerequisites: ACC 120 Corequisites: None Available: As Needed This course provides an overview of business financial management. Emphasis is placed on financial statement analysis, time value of money, management of cash flow, risk and return, and sources of financing. Upon completion, students should be able to interpret and apply the principles of financial management.
BUS 147 Business Insurance 3 0 3 Prerequisites: None Corequisites: None Available: Spring This course surveys the basic concepts of risk management. Topics include principles and applications of health, property, life, and casualty insurance. Upon completion, students should be able to evaluate different insurance needs and assist an organization in acquiring adequate insurance coverage.	BUS 234 Training and Development 3 0 3 Prerequisites: None Corequisites: None Available: Fall This course covers developing, conducting, and evaluating employee training with attention to adult learning principles. Emphasis is placed on conducting a needs assessment, using various instructional approaches, designing the learning environment, and locating learning resources. Upon completion, students should be able to design, conduct, and evaluate a training program.
BUS 151 People Skills 3 0 3 Prerequisites: None Corequisites: None Available: As Needed This course introduces the basic concepts of identity and communication in the business setting. Topics include self-concept, values, communication styles, feelings and emotions, roles versus relationships, and basic assertiveness, listening, and conflict resolution. Upon completion, students should be able to distinguish between unhealthy, self-destructive, communication patterns and healthy, non-destructive, positive communication patterns.	*BUS 239 Business Applications Seminar 1 2 2 Prerequisites: ACC 120, BUS 115, BUS 137, MKT 120 and either ECO 151, ECO 251 or ECO 252 Corequisites: None Available: Spring This course is designed as a capstone course for Business Administration majors. Emphasis is placed on decision making in the areas of management, marketing, production, purchasing, and finance. Upon completion, students should be able to apply the techniques, processes, and vital professional skills needed in the workplace.
BUS 153 Human Resources Management 3 0 3 Prerequisites: None Corequisites: None Available: Spring This course introduces the functions of personnel/human resource management within an organization. Topics include equal opportunity and the legal environment, recruitment and selection, performance appraisal, employee development, compensation planning, and employee relations. Upon completion, students should be able to anticipate and resolve human resource concerns.	BUS 240 Business Ethics 3 0 3 Prerequisites: None Corequisites: None Available: Spring, Summer This course introduces contemporary and controversial ethical issues that face the business community. Topics include moral reasoning, moral dilemmas, law and morality, equity, justice and fairness, ethical standards, and moral development. Upon completion, students should be able to demonstrate an understanding of their moral responsibilities and obligations as members of the work force and society.
BUS 175 Contract Negotiations 3 0 3 Prerequisites: None Corequisites: None Available: As Needed This course covers theory, strategies, techniques and tactics for negotiating contracts, and principles and practices of negotiations for government, corporate or institutional procurements. Topics include preparation and conduct of negotiations and methods of dealing with situations under different types of negotiations. Upon completion, students should be able to effectively negotiate contracts.	

BUS 255 Org Behavior in Business**3 0 3**

Prerequisites: None

Corequisites: None

Available: Spring

This course covers the impact of different management practices and leadership styles on worker satisfaction and morale, organizational effectiveness, productivity, and profitability. Topics include a discussion of formal and informal organizations, group dynamics, motivation, and managing conflict and change. Upon completion, students should be able to analyze different types of interpersonal situations and determine an appropriate course of action.

BUS 256 Recruit Select and Per Plan**3 0 3**

Prerequisites: None

Corequisites: None

Available: Fall

This course introduces the basic principles involved in managing the employment process. Topics include personnel planning, recruiting, interviewing and screening techniques, maintaining employees records; and voluntary and involuntary separations. Upon completion, students should be able to acquire and retain employees who match position requirements and fulfill organizational objectives. The course is a unique concentration requirement of the Human Resources Management concentration in the Business Administration program.

BUS 258 Compensation and Benefits**3 0 3**

Prerequisites: None

Corequisites: None

Available: Fall

This course is designed to study the basic concepts of pay and its role in rewarding performance. Topics include wage and salary surveys, job analysis, job evaluation techniques, benefits, and pay-for-performance programs. Upon completion, students should be able to develop and manage a basic compensation system to attract, motivate, and retain employees. This course is a unique concentration requirement of the Human Resources Management concentration in the Business Administration program.

BUS 259 HRM Applications**3 0 3**

Prerequisites: BUS 217, BUS 234, BUS 256, and BUS 258

Corequisites: None

Available: Spring

This course provides students in the Human Resources Management concentration the opportunity to reinforce their learning experiences from preceding HRM courses. Emphasis is placed on application of day-to-day HRM functions by completing in-basket exercises and through simulations. Upon completion, students should be able to determine the appropriate actions called for by typical events that affect the status of people at work. This course is a unique concentration requirement of the Human Resources Management concentration in the Business Administration program.

BUS 260 Business Communication**3 0 3**

Prerequisites: CIS 110 and ENG 111

Corequisites: None

Available: As Needed

This course is designed to develop skills in writing business communications. Emphasis is placed on business reports, correspondence, and professional presentations. Upon completion, students should be able to communicate effectively in the workplace.

BUS 270 Professional Development**3 0 3**

Prerequisites: None

Corequisites: None

Available: As Needed

This course provides basic knowledge of self-improvement techniques as related to success in the professional world. Topics include positive human relations, job-seeking skills, and projecting positive self-image. Upon completion, students should be able to demonstrate competent personal and professional skills necessary to get and keep a job.

BUS 280 REAL Small Business**4 0 4**

Prerequisites: None

Corequisites: None

Available: Spring

This course introduces hands-on techniques and procedures for planning and opening a small business, including the personal qualities needed for entrepreneurship. Emphasis is placed on market research, finance, time management, and day-to-day activities of owning/operating a small business. Upon completion, students should be able to write and implement a viable business plan and seek funding.

Cabinetmaking**CAB 111 Cabinetmaking I****4 9 7**

Prerequisites: None

Corequisites: CAR 110 or CMT 212

Available: Fall, Spring

This course introduces wood technology, materials, purchasing, estimating, design considerations, and cabinet construction. Topics include wood identification and use, hand tools, safe machine operation, glue and clamping, abrasives, wood joinery, kitchen and bath layout, laminates, and finishing techniques. Upon completion, students should be able to select and process materials; make sound production decisions; and design, lay-out, construct, and install cabinets. This is a diploma-level course.

CAB 119 Cabinetry/Millworking**4 9 7**

Prerequisites: None

Corequisites: CAR 110 or CMT 212

Available: Spring

This course introduces wood technology, cabinet construction, and mill-working. Topics include safety, hand/power tools, wood identification and use, wood joinery, abrasives, cabinet layout, laminates, finishing techniques, and other related topics. Upon completion, students should be able to select and process materials using accurate drawings and cut lists and install finished products.

Carpentry**CAR 110 Introduction to Carpentry****2 0 2**

Prerequisites: None

Corequisites: None

Available: Fall, Summer

This course introduces the student to the carpentry trade. Topics include duties of a carpenter, hand and power tools, building materials, construction methods, and safety. Upon completion, students should be able to identify hand and power tools, common building materials, and basic construction methods.

CAR 111 Carpentry I**3 15 8**

Prerequisites: None

Corequisites: CAR 110 or CMT 212

Available: Fall

This course introduces the theory and construction methods associated with the building industry, including framing, materials, tools, and equipment. Topics include safety, hand/power tool use, site preparation, measurement and layout, footings and foundations, construction framing, and other related topics. Upon completion, students should be able to safely lay out and perform basic framing skills with supervision. This is a diploma-level course.

CAR 112 Carpentry II**3 15 8**

Prerequisites: CAR 111

Corequisites: None

Available: Fall

This course covers the advanced theory and construction methods associated with the building industry including framing and exterior finishes. Topics include safety, hand/power tool use, measurement and layout, construction framing, exterior trim and finish, and other related topics. Upon completion, students should be able to safely frame and apply exterior finishes to a residential building with supervision. This is a diploma-level course.

CAR 113 Carpentry III**3 9 6**

Prerequisites: CAR 111

Corequisites: None

Available: Summer

This course covers interior trim and finishes. Topics include safety, hand/power tool use, measurement and layout, specialty framing, interior trim and finishes, cabinetry, and other related topics. Upon completion, students should be able to safely install various interior trim and finishes in a residential building with supervision. This is a diploma-level course.

CAR 114 Residential Building Codes**3 0 3**

Prerequisites: None

Corequisites: None

Available: Spring

This course covers building codes and the requirements of state and local construction regulations. Emphasis is placed on the minimum requirements of the North Carolina building codes related to residential structures. Upon completion, students should be able to determine if a structure is in compliance with North Carolina building codes.

CAR 115 Residential Planning/Estimating**3 0 3**

Prerequisites: BPR 130

Corequisites: None

Available: Fall

This course covers project planning, management, and estimating for residential or light commercial buildings. Topics include planning and scheduling, interpretation of working drawings and specifications, estimating practices, and other related topics. Upon completion, students should be able to perform quantity take-offs and cost estimates.

Computed Tomography**CAT 210 CT Physics & Equipment****3 0 0 3**

Prerequisites: Enrollment in CT/MRI diploma or CT certificate programs

Corequisites: None

Available: Fall

This course covers the system operations and components, image processing and display, image quality, and artifacts in computed tomography. Emphasis is placed on the data acquisition components, tissue attenuation conversions, image manipulation, and factors controlling image resolution. Upon completion, students should be able to understand the physics and instrumentation used in computed tomography.

CAT 211 CT Procedures**4 0 0 4**

Prerequisites: Enrollment in CT/MRI diploma or CT certificate programs

Corequisites: CAT 210

Available: Fall

This course is designed to cover specialized patient care, cross-sectional anatomy, contrast media, and scanning procedures in computed tomography. Emphasis is placed on patient assessment and monitoring, contrast agents' use, radiation safety, methods of data acquisition, and identification of cross-sectional anatomy. Upon completion, students should be able to integrate all facets of the imaging procedures in computed tomography.

CAT 225 CT Clinical Practicum**0 0 15 5**

Prerequisites: Enrollment in CT/MRI diploma or CT certificate programs

Corequisites: None

Available: Fall

This course provides the opportunity to apply knowledge gained from classroom instruction to the computed tomography clinical setting. Emphasis is placed on patient care and positioning, scanning procedures, and image production in computed tomography. Upon completion, students should be able to assume a variety of duties and responsibilities within the computed tomography clinical environment.

CAT 226 CT Clinical Practicum**0 0 18 6**

Prerequisites: Enrollment in CT/MRI diploma or CT certificate programs

Corequisites: None

Available: Fall, Spring

This course provides the opportunity to apply knowledge gained from classroom instruction to the computed tomography clinical setting. Emphasis is placed on patient care and positioning, scanning procedures, and image production in computed tomography. Upon completion, students should be able to assume a variety of duties and responsibilities within the computed tomography clinical environment.

Cyber Crime**CCT 110 Introduction to Cyber Crime****3 0 3**

Prerequisites: None

Corequisites: None

Available: As Needed

This course introduces and explains the various types of offenses that qualify as cyber crime activity. Emphasis is placed on identifying cyber crime activity and the response to these problems from both the private and public domains. Upon completion, students should be able to accurately describe and define cyber crime activities and select an appropriate response to deal with the problem.

CCT 121 Computer Crime Investigation**3 2 4**

Prerequisites: None

Corequisites: None

Available: As Needed

This course introduces the fundamental principles of computer crime investigation processes. Topics include crime scene/incident processing, information gathering techniques, data retrieval, collection and preservation of evidence, preparation of reports and court presentations. Upon completion, students should be able to identify cyber crime activity and demonstrate proper investigative techniques to process the scene and assist in case prosecution.

CCT 231 Technology Crimes and Law**3 0 3**

Prerequisites: None

Corequisites: None

Available: As Needed

This course covers the applicable technological laws dealing with the regulation of cyber security and criminal activity. Topics include an examination of state, federal and international laws regarding cyber crime with an emphasis on both general and North Carolina statutes. Upon completion, students should be able to identify the elements of cyber crime activity and discuss the trends of evolving laws.

Computer Engineering Technology**CET 111 Computer Upgrade/Repair I****2 3 3**

Prerequisites: MAT 060, RED 080

Corequisites: None

Available: As Needed

This course covers repairing, servicing, and upgrading computers and peripherals in preparation for industry certification. Topics include CPU/memory/bus identification, disk subsystems, hardware/software installation/configuration, common device drivers, data recovery, system maintenance, and other related topics. Upon completion, students should be able to safely repair and/or upgrade computer systems to perform within specifications.

CET 125 Voice and Data Cabling**2 3 3**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course provides an understanding of the industry and its worldwide standards, types of media and cabling, physical and logical networks, including signal transmission. Topics include network design documentation, part list set-up, pulling and mounting cable, cable management, wiring closets, patch panel installation and termination including cable testing. Upon completion, students should be able to understand documentation, design, installation and safety issues associated with voice and data cabling.

CET 161 Procedural Programming**2 3 3**

Prerequisites: None

Corequisites: None

Available: Fall, Summer

This course introduces procedural programming for engineering applications. Emphasis is placed on event-driven programming methods, including creating and manipulating data, sequencing, iteration, and blocking of code. Upon completion, students should be able to design, code, test and debug at a beginning level.

CET 211 Computer Upgrade/Repair II**2 3 3**

Prerequisites: CET 111

Corequisites: None

Available: As Needed

This course covers concepts of repair service, and upgrade of computers and peripherals in preparation for industry certification. Topics may include resolving resource conflicts and system bus specifications, configuration and troubleshooting peripherals, operating system configuration and optimization, and other related topics. Upon completion, students should be able to identify and resolve system conflicts and optimize system performance.

CET 212 Integrated Manufacturing Systems**1 3 2**

Prerequisites: ELN 237 and (CET 161 or CSC 143)

Corequisites: None

Available: Spring, Summer

This course covers computer topics related to integrated manufacturing systems common to current manufacturing facilities. Topics include robot programming, automated control systems, PLCs, data communication, and networking in an integrated manufacturing environment, and other related topics. Upon completion, students should be able to program robots using teaching pendants and troubleshoot and maintain network installations related to integrated manufacturing systems.

Chemistry**CHM 092 Fundamentals of Chemistry****3 2 4**

Prerequisites: None

Corequisites: None

Available: Fall, Spring, Summer

This course covers fundamentals of chemistry with laboratory applications. Topics include measurements, matter, energy, atomic theory, bonding, molecular structure, nomenclature, balancing equations, stoichiometry, solutions, acids and bases, gases, and basic organic chemistry. Upon completion, students should be able to understand and apply basic chemical concepts and demonstrate basic laboratory skills necessary for success in college-level science courses.

CHM 121 Foundations of Chemistry**3 0 3**

Prerequisites: None

Corequisites: CHM 121A

Available: As Needed

This course is designed for those who have no previous high school chemistry or a grade of C or less in high school chemistry. Topics include matter, structure of the atom, nomenclature, chemical equations, bonding and reactions; mathematical topics include measurements, scientific notation, and stoichiometry. Upon completion, students should be able to demonstrate an understanding of chemical concepts and an ability to solve related problems in subsequent chemistry courses.

CHM 121A Foundations of Chemistry Laboratory**0 2 1**

Prerequisites: None

Corequisites: CHM 121

Available: As Needed

This course is a laboratory for CHM 121. Emphasis is placed on laboratory experiences that enhance materials presented in CHM 121. Upon completion, students should be able to utilize basic laboratory procedures and apply them to chemical principles presented in CHM 121.

CHM 130 General, Organic, and Biochemistry 3 0 3 Prerequisites: High school chemistry or CHM 092 Corequisites: CHM 130A Available: Fall, Spring This course provides a survey of basic facts and principles of general, organic, and biochemistry. Topics include measurement, molecular structure, nuclear chemistry, solutions, acid-base chemistry, gas laws, and the structure, properties, and reactions of major organic and biological groups. Upon completion, students should be able to demonstrate an understanding of fundamental chemical concepts. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.	CHM 136 Survey of Chemistry II 3 2 4 Prerequisites: CHM 135 Corequisites: None Available: As Needed This course is a continuation of CHM 135 with further study of inorganic reactions and an introduction to organic, biological, and nuclear chemistry. Topics include solutions, acid-base theory, redox reactions, chemical kinetics, organic chemistry, biochemistry, and nuclear chemistry. Upon completion, students should be able to demonstrate a basic understanding of chemistry as it applies to other fields. This introductory course series to chemistry emphasizes the practical impact of chemistry and scientific reasoning on society. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.
CHM 130A General, Organic, and Biochemistry Lab 0 2 1 Prerequisites: None Corequisites: CHM 130 Available: Fall, Spring This course is a laboratory for CHM 130. Emphasis is placed on laboratory experiences that enhance materials presented in CHM 130. Upon completion, students should be able to utilize basic laboratory procedures and apply them to chemical principles presented in CHM 130. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.	CHM 151 General Chemistry I 3 3 4 Prerequisites: High school chemistry or CHM 092 Corequisites: MAT 161 Available: Fall, Spring, Summer This course covers fundamental principles and laws of chemistry. Topics include measurement, atomic and molecular structure, periodicity, chemical reactions, chemical bonding, stoichiometry, thermochemistry, gas laws, and solutions. Upon completion, students should be able to demonstrate an understanding of fundamental chemical laws and concepts as needed in CHM 152. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.
CHM 132 Organic and Biochemistry 3 3 4 Prerequisites: CHM 131 and 131A or CHM 151 Corequisites: None Available: Spring, Summer This course provides a survey of major functional classes of compounds in organic and biochemistry. Topics include structure, properties, and reactions of the major organic and biological molecules and basic principles of metabolism. Upon completion, students should be able to demonstrate an understanding of fundamental chemical concepts needed to pursue studies in related professional fields. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.	CHM 152 General Chemistry II 3 3 4 Prerequisites: CHM 151 Corequisites: None Available: Fall, Spring, Summer This course provides a continuation of the study of the fundamental principles and laws of chemistry. Topics include kinetics, equilibrium, ionic and redox equations, acid-base theory, electrochemistry, thermodynamics, introduction to nuclear and organic chemistry, and complex ions. Upon completion, students should be able to demonstrate an understanding of chemical concepts as needed to pursue further study in chemistry and related professional fields. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.
CHM 135 Survey of Chemistry I 3 2 4 Prerequisites: None Corequisites: None Available: Fall, Spring This course provides an introduction to inorganic chemistry. Emphasis is placed on measurement, atomic structure, bonding, molecular geometry, nomenclature, reactions, the mole concept, stoichiometric calculations, states of matter, and the gas laws. Upon completion, students should be able to demonstrate a basic understanding of chemistry as it applies to other fields. This introductory course series to chemistry emphasizes the practical impact of chemistry and scientific reasoning on society. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.	CHM 251 Organic Chemistry I 3 3 4 Prerequisites: CHM 152 Corequisites: None Available: Fall This course provides a systematic study of the theories, principles, and techniques of organic chemistry. Topics include nomenclature, structure, properties, reactions, and mechanisms of hydrocarbons, alkyl halides, alcohols, and ethers; further topics include isomerization, stereochemistry, and spectroscopy. Upon completion, students should be able to demonstrate an understanding of the fundamental concepts of covered organic topics as needed in CHM 252. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

CHM 252 Organic Chemistry II**3 3 4**

Prerequisites: CHM 251

Corequisites: None

Available: Spring

This course provides continuation of the systematic study of the theories, principles, and techniques of organic chemistry. Topics include nomenclature, structure, properties, reactions, and mechanisms of aromatics, aldehydes, ketones, carboxylic acids and derivatives, amines and heterocyclics; multi-step synthesis will be emphasized. Upon completion, students should be able to demonstrate an understanding of organic concepts as needed to pursue further study in chemistry and related professional fields. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

CHM 265 Instrumental Analysis**2 6 4**

Prerequisites: CHM 251

Corequisites: None

Available: As Needed

This course introduces modern instrumental and chromatographic methods. Topics include methods of chromatographic, spectral, and electrochemical analysis which will provide theory of instrumentation, interpretation, and statistical evaluation of analytical data with practical applications. Upon completion, students should be able to perform quantitative analytical procedures using modern instrumentation. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

CHM 271 Biochemical Principles**3 0 3**

Prerequisites: CHM 252

Corequisites: None

Available: As Needed

The course covers fundamental principles of biochemistry. Topics include structures, properties, reactions, and mechanisms of biomacromolecules including amino acids, peptides, proteins, carbohydrates and nucleic acids, enzymatic metabolic pathways, and biochemical genetics. Upon completion, students should be able to demonstrate an understanding of fundamental biochemical processes. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirements.

Information Systems**CIS 110 Introduction to Computers****2 2 3**

Prerequisites: Basic computer literacy is necessary (if you do not have basic skills, CTS 060 will give you the foundation for this course)

Corequisites: None

Available: Fall, Spring, Summer

This course introduces computer concepts, including fundamental functions and operations of the computer. Topics include identification of hardware components, basic computer operations, security issues, and use of software applications. Upon completion, students should be able to demonstrate an understanding of the role and function of computers and use the computer to solve problems. Microsoft Office will be used in this course; this includes Word, Excel, Access and PowerPoint. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics (Quantitative Option).

CIS 111 Basic PC Literacy**1 2 2**

Prerequisites: Basic computer literacy is necessary (if you do not have basic skills, CTS 060 will give you the foundation for this course)

Corequisites: None

Available: As Needed

This course provides an overview of computer concepts. Emphasis is placed on the use of personal computers and software applications for personal and fundamental workplace use. Upon completion, students should be able to demonstrate basic personal computer skills.

CIS 113 Computer Basics**0 2 1**

Prerequisites: None

Corequisites: None

Available: As Needed

This course introduces basic computer usage for non-computers majors. Emphasis is placed on developing basic personal computer skills. Upon completion, students should be able to demonstrate basic computer applications.

CIS 115 Intro to Programming and Logic**2 3 3**

Prerequisites: Select One: MAT 070, MAT 080, MAT 090, MAT 095, MAT 120, MAT 121, MAT 161, MAT 171, MAT 175

Corequisites: None

Available: Fall, Spring

This course introduces computer programming and problem solving in a structured program logic environment. Topics include language syntax, data types, program organization, problem solving methods, algorithm design, and logic control structures. Upon completion, students should be able to manage files with operating system commands, use top-down algorithm design, and implement algorithmic solutions in a programming language. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics (Quantitative Option).

CIS 165 Desktop Publishing I**2 2 3**

Prerequisites: CIS 110

Corequisites: None

Available: Spring

This course provides an introduction to desktop publishing software capabilities. Emphasis is placed on efficient use of a page layout software package to create, design, and print publications; hardware/software compatibility; and integration of specialized peripherals. Upon completion, students should be able to prepare publications given design specifications.

Civil Engineering**CIV 110 Statics/Strength of Materials****2 6 4**

Prerequisites: MAT 121, MAT 161, MAT 171, or MAT 175

Corequisites: None

Available: Fall, Spring

This course includes vector analysis, equilibrium of force systems, friction, sectional properties, stress/strain, and deformation. Topics include resultants and components of forces, moments and couples, free-body diagrams, shear and moment diagrams, trusses, frames, beams, columns, connections, and combined stresses. Upon completion, students should be able to analyze simple structures.

CIV 111 Soils and Foundations 2 3 3 Prerequisites: CIV 110 or MEC 250 Corequisites: None Available: Fall, Spring This course presents an overview of soil as a construction material using both analysis and testing procedures. Topics include index properties, classification, stress analysis, compressibility, compaction, dewatering, excavation, stabilization, settlement, and foundations. Upon completion, students should be able to perform basic soil tests and analyze engineering properties of soil.	CIV 220 Basic Structural Concepts 1 3 2 Prerequisites: CIV 110 or MEC 250 Corequisites: None Available: Fall This course covers the historical perspective of structures as well as types, materials, common elements, and mechanical principles of structures. Topics include basic structure shapes, advantages and disadvantages of standard building materials, application of structural concepts, and other related topics. Upon completion, students should be able to demonstrate an understanding of basic structural concepts.
CIV 125 Civil/Surveying CAD 1 6 3 Prerequisites: DFT 119, DFT 151, or EGR 125 Corequisites: None Available: Fall, Spring This course introduces civil/surveying computer-aided drafting (CAD) software. Topics include drawing, editing, and dimensioning commands; plotting; and other related civil/surveying topics. Upon completion, students should be able to produce civil/surveying drawings using CAD software.	CIV 221 Steel and Timber Design 2 3 3 Prerequisites: CIV 110 or MEC 250 Corequisites: None Available: Spring This course introduces the basic elements of steel and timber structures. Topics include the analysis and design of steel and timber beams, columns, and connections and the use of appropriate manuals and codes. Upon completion, students should be able to analyze, design, and draw simple steel and timber structures.
CIV 210 Engineering Materials 1 3 2 Prerequisites: None Corequisites: None Available: Fall, Spring This course covers the behavior and properties of Portland cement and asphaltic concretes and laboratory and field testing. Topics include cementing agents and aggregates; water and admixtures; proportioning, production, placing, consolidation, and curing; and inspection methods. Upon completion, students should be able to proportion concrete mixes to attain predetermined strengths and other properties and perform standard control tests.	CIV 222 Reinforced Concrete 2 3 3 Prerequisites: CIV 110 or MEC 250 Corequisites: None Available: Fall, Spring This course introduces the basic elements of reinforced concrete and masonry structures. Topics include analysis and design of reinforced concrete beams, slabs, columns, footings, and retaining walls; load-bearing masonry walls; and ACI manuals and codes. Upon completion, students should be able to analyze and design components of a structure using reinforced concrete and masonry elements and utilize appropriate ACI publications.
CIV 211 Hydraulics and Hydrology 2 3 3 Prerequisites: CIV 110 or MEC 250 Corequisites: None Available: Summer This course introduces the basic engineering principles and characteristics of hydraulics and hydrology. Topics include precipitation and runoff, fluid statics and dynamics, flow measurement, and pipe and open channel flow. Upon completion, students should be able to analyze and size drainage structures.	CIV 230 Construction Estimating 2 3 3 Prerequisites: ARC 111, CIS 110, CIS 111, or EGR 115 Corequisites: None Available: Fall, Spring This course covers quantity take-offs of labor, materials, and equipment and calculation of direct and overhead costs for a construction project. Topics include the interpretation of working drawings and specifications, types of contracts and estimates, building codes, bidding techniques and procedures, and estimating software. Upon completion, students should be able to prepare a detailed cost estimate and bid documents for a construction project.
CIV 212 Environmental Planning 2 3 3 Prerequisites: CIV 211 Corequisites: None Available: Spring This course covers water and wastewater technology, erosion and sedimentation control, and other related topics. Topics include collection, treatment, and distribution of water and wastewater and erosion and sedimentation control law. Upon completion, students should be able to demonstrate knowledge of water and wastewater systems and prepare erosion and sedimentation control plans.	CIV 240 Project Management 2 3 3 Prerequisites: ARC 111 or EGR 115 Corequisites: None Available: Fall, Summer This course introduces construction planning and scheduling techniques and project management software. Topics include construction safety, operation analysis, construction scheduling, construction control systems, claims and dispute resolutions, project records, and documentation. Upon completion, students should be able to demonstrate an understanding of the roles of construction project participants, maintain construction records, and prepare construction schedules.
CIV 215 Highway Technology 1 3 2 Prerequisites: SRV 111 Corequisites: CIV 211 Available: Fall This course introduces the essential elements of roadway components and design. Topics include subgrade and pavement construction, roadway drawings and details, drainage, superelevation, and N.C. Department of Transportation Standards. Upon completion, students should be able to use roadway drawings and specifications to develop superelevation, drainage, and general highway construction details.	

CIV 250 Civil Engineering Technology Project 1 3 2
 Prerequisites: Department Chair Approval
 Corequisites: None
 Available: Fall, Spring
 This course includes an integrated team approach to civil engineering technology projects. Emphasis is placed on project proposal, site selection, analysis/design of structures, construction material selection, time and cost estimating, planning, and management of a project. Upon completion, students should be able to apply team concepts, prepare estimates, submit bid proposals, and manage projects.

Criminal Justice

CJC 100 Basic Law Enforcement Training 9 30 19
 Prerequisites: RED 080
 Corequisites: None
 Available: Fall, Spring
 This course covers the skills and knowledge needed for entry-level employment as a law enforcement officer in North Carolina. Emphasis is placed on topics and areas as defined by the North Carolina Administrative Code. Upon completion, students should be able to demonstrate competence in the topics and areas required for the state comprehensive examination. This is a certificate-level course.

CJC 111 Introduction to Criminal Justice 3 0 3
 Prerequisites: None
 Corequisites: None
 Available: Fall, Spring
 This course introduces the components and processes of the criminal justice system. Topics include history, structure, functions, and philosophy of the criminal justice system and their relationship to life in our society. Upon completion, students should be able to define and describe the major system components and their interrelationships and evaluate career options. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

CJC 112 Criminology 3 0 3
 Prerequisites: None
 Corequisites: None
 Available: Spring
 This course introduces deviant behavior as it relates to criminal activity. Topics include theories of crime causation; statistical analysis of criminal behavior; past, present, and future social control initiatives; and other related topics. Upon completion, students should be able to explain and discuss various theories of crime causation and societal response.

CJC 113 Juvenile Justice 3 0 3
 Prerequisites: None
 Corequisites: None
 Available: Fall
 This course covers the juvenile justice system and related juvenile issues. Topics include an overview of the juvenile justice system, treatment and prevention programs, special areas and laws unique to juveniles, and other related topics. Upon completion, students should be able to identify/discuss juvenile court structure/procedures, function and jurisdiction of juvenile agencies, processing/detention of juveniles, and case disposition.

CJC 114 Investigative Photography 1 2 2
 Prerequisites: None
 Corequisites: None
 Available: As Needed
 This course covers the operation of various photographic equipment and its application to criminal justice. Topics include using various cameras, proper exposure of film, developing film/prints, and preparing photographic evidence. Upon completion, students should be able to demonstrate and explain the role of photography and proper film exposure and development techniques.

CJC 120 Interviews/Interrogations 1 2 2
 Prerequisites: None
 Corequisites: None
 Available: As Needed
 This course covers basic and special techniques employed in criminal justice interviews and interrogations. Emphasis is placed on the interview/interrogation process, including interpretation of verbal and physical behavior and legal perspectives. Upon completion, students should be able to conduct interviews/interrogations in a legal, efficient, and professional manner and obtain the truth from suspects, witnesses, and victims.

CJC 121 Law Enforcement Operations 3 0 3
 Prerequisites: None
 Corequisites: None
 Available: As Needed
 This course introduces fundamental law enforcement operations. Topics include the contemporary evolution of law enforcement operations and related issues. Upon completion, students should be able to explain theories, practices, and issues related to law enforcement operations. There will be an emphasis on practical skills. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

CJC 122 Community Policing 3 0 3
 Prerequisites: None
 Corequisites: None
 Available: As Needed
 This course covers the historical, philosophical, and practical dimensions of community policing. Emphasis is placed on the empowerment of police and the community to find solutions to problems by forming partnerships. Upon completion, students should be able to define community policing, describe how community policing strategies solve problems, and compare community policing to traditional policing.

CJC 131 Criminal Law 3 0 3
 Prerequisites: None
 Corequisites: None
 Available: Spring
 This course covers the history/evolution/principles and contemporary applications of criminal law. Topics include sources of substantive law, classification of crimes, parties to crime, elements of crimes, matters of criminal responsibility, and other related topics. Upon completion, students should be able to discuss the sources of law and identify, interpret, and apply the appropriate statutes/elements. There will be an emphasis on North Carolina law.

CJC 132 Court Procedure and Evidence**3 0 3**

Prerequisites: None

Corequisites: None

Available: As Needed

This course covers judicial structure/process, procedure from incident to disposition, kinds and degrees of evidence, and the rules governing admissibility of evidence in court. Topics include consideration of state and federal courts, arrest, search and seizure laws, exclusionary and statutory rules of evidence, and other related issues. Upon completion, students should be able to identify and discuss procedures necessary to establish a lawful arrest/search, proper judicial procedures, and the admissibility of evidence.

CJC 160 Terrorism: Underlying Issues**3 0 3**

Prerequisites: None

Corequisites: None

Available: As Needed

This course identifies the fundamental reasons why America is a target for terrorists, covering various domestic/international terrorist groups and ideologies from a historical aspect. Emphasis is placed upon recognition of terrorist crime scenes; weapons of mass destruction; chemical, biological, and nuclear terrorism; and planning consideration involving threat assessments. Upon completion, the student should be able to identify and discuss the methods used in terrorists' activities and complete a threat assessment for terrorists' incidents.

CJC 170 Critical Incident Management for Public Safety**3 0 3**

Prerequisites: None

Corequisites: None

Available: As Needed

This course prepares the student to specialize in the direct response, operations, and management of critical incidents. Emphasis is placed upon the theoretical and applied models to understand and manage disasters, terrorism, and school/work place violence. Upon completion, the student should be able to identify and discuss managerial techniques, legal issues, and response procedures to critical incidents.

CJC 212 Ethics and Community Relations**3 0 3**

Prerequisites: None

Corequisites: None

Available: Spring

This course covers ethical considerations and accepted standards applicable to criminal justice organizations and professionals. Topics include ethical systems; social change, values, and norms; cultural diversity; citizen involvement in criminal justice issues; and other related topics. Upon completion, students should be able to demonstrate the ability to apply ethical considerations to the decision-making process in identifiable criminal justice situations.

CJC 213 Substance Abuse**3 0 3**

Prerequisites: None

Corequisites: None

Available: As Needed

This course is a study of substance abuse in our society. Topics include the history and classifications of drug abuse and the social, physical, and psychological impact of drug abuse. Upon completion, students should be able to identify various types of drugs, their effects on human behavior and society, and treatment modalities. Drug enforcement programs and techniques will be discussed.

CJC 214 Victimology**3 0 3**

Prerequisites: None

Corequisites: None

Available: As Needed

This course introduces the study of victims. Emphasis is placed on roles/characteristics of victims, victim interaction with the criminal justice system and society, current victim assistance programs, and other related topics. Upon completion, students should be able to discuss and identify victims, the uniqueness of victims' roles, and current victim assistance programs.

CJC 215 Organization and Administration**3 0 3**

Prerequisites: None

Corequisites: None

Available: As Needed

This course introduces the components and functions of organization and administration as it applies to the agencies of the criminal justice system. Topics include operations/functions of organizations; recruiting, training, and retention of personnel; funding and budgeting; communications; span of control and discretion; and other related topics. Upon completion, students should be able to identify and discuss the basic components and functions of a criminal justice organization and its administrative operations.

CJC 221 Investigative Principles**3 2 4**

Prerequisites: None

Corequisites: None

Available: Fall

This course introduces the theories and fundamentals of the investigative process. Topics include crime scene/incident processing, information gathering techniques, collection/preservation of evidence, preparation of appropriate reports, court presentations, and other related topics. Upon completion, students should be able to identify, explain, and demonstrate the techniques of the investigative process, report preparation, and courtroom presentation.

CJC 222 Criminalistics**3 0 3**

Prerequisites: None

Corequisites: None

Available: As Needed

This course covers the functions of the forensic laboratory and its relationship to successful criminal investigations and prosecutions. Topics include advanced crime scene processing, investigative techniques, current forensic technologies, and other related topics. Upon completion, students should be able to identify and collect relevant evidence at simulated crime scenes and request appropriate laboratory analysis of submitted evidence. An emphasis will be placed on current technology for collection and classification of fingerprint evidence.

CJC 223 Organized Crime**3 0 3**

Prerequisites: None

Corequisites: None

Available: As Needed

This course introduces the evolution of traditional and non-traditional organized crime and its effect on society and the criminal justice system. Topics include identifying individuals and groups involved in organized crime, areas of criminal activity, legal and political responses to organized crime, and other related topics. Upon completion, students should be able to identify the groups and activities involved in organized crime and the responses of the criminal justice system.

CJC 225 Crisis Intervention**3 0 3**

Prerequisites: None

Corequisites: None

Available: As Needed

This course introduces critical incident intervention and management techniques as they apply to operational criminal justice practitioners. Emphasis is placed on the victim/offender situation as well as job-related high stress, dangerous, or problem-solving citizen contacts. Upon completion, students should be able to provide insightful analysis of emotional, violent, drug-induced, and other critical and/or stressful incidents that require field analysis and/or resolution.

CJC 231 Constitutional Law**3 0 3**

Prerequisites: None

Corequisites: None

Available: Fall

The course covers the impact of the Constitution of the United States and its amendments on the criminal justice system. Topics include the structure of the Constitution and its amendments, court decisions pertinent to contemporary criminal justice issues, and other related topics. Upon completion, students should be able to identify/discuss the basic structure of the United States Constitution and the rights/procedures as interpreted by the courts.

CJC 232 Civil Liability**3 0 3**

Prerequisites: None

Corequisites: None

Available: As Needed

This course covers liability issues for the criminal justice professional. Topics include civil rights violations, tort liability, employment issues, and other related topics. Upon completion, students should be able to explain civil trial procedures and discuss contemporary liability issues.

CJC 255 Issue in Criminal Justice App**3 0 3**

Prerequisites: CJC 111, CJC 221, and CJC 231

Corequisites: None

Available: As Needed

This course provides an opportunity to exhibit interpersonal and technical skills required for application of criminal justice concepts in contemporary practical situations. Emphasis is placed on critical thinking and integration of theory and practical skills components. Upon completion, students should be able to demonstrate the knowledge required of any entry-level law enforcement officer.

CJC 261 High-Risk Situations**1 2 2**

Prerequisites: None

Corequisites: None

Available: As Needed

This course prepares students to employ proper response methods, including a risk and attack analysis, when faced with high-risk situations. Emphasis will be placed on cover and evacuation techniques when faced with an active, barricaded shooter, improvised explosive device recognition, and hazardous material impact assessment. Upon completion, students would be able to demonstrate an ability to analyze a high-risk situation and use the proper decision-making process to respond. This course is restricted to the Criminal Justice Technology curriculum.

Construction Management***CMT 210 Professional Construction Supervision****3 0 3**

Prerequisites: None

Corequisites: None

Available: Fall

This course introduces the student to the fundamentals of effective supervision emphasizing professionalism through knowledge and applied skills. Topics include safety, planning and scheduling, contract, problem-solving, communications, conflict resolution, recruitment, employment laws and regulations, leadership, motivation, teamwork, discipline, setting objectives, and training. Upon completion, the student should be able to demonstrate the basic skills necessary to be successful as a supervisor in the construction industry.

CMT 212 Total Safety Performance*3 0 3**

Prerequisites: None

Corequisites: CMT 210

Available: Fall

This course covers the importance of managing safety and productivity equally by encouraging people to take individual responsibility for safety and health in the workplace. Topics include safety management, controlling construction hazards, communicating and enforcing policies, OSHA compliance, personal responsibility and accountability, safety planning, training, and personal protective equipment. Upon completion, students should be able to supervise safety at a construction job site and qualify for the OSHA Training Certification.

CMT 214 Planning and Scheduling*3 0 3**

Prerequisites: CMT 210 and BPR 130

Corequisites: None

Available: Fall

This course covers the need for the process of planning construction projects, as well as the mechanics and vocabulary of project scheduling. Topics include project preplanning, scheduling format, planning for production, short interval planning, schedule updating and revising, and computer-based planning and scheduling. Upon completion, the student should be able to understand the need for planning and scheduling, the language and logic of scheduling, and use of planning skills.

CMT 216 Costs and Productivity*3 0 3**

Prerequisites: CMT 210

Corequisites: None

Available: Spring

This course covers the relationships between time, work completed, work-hours spent, schedule duration, equipment hours, and materials used. Topics include production rates, productivity unit rates, work method improvements, and overall total project cost control. Upon completion, the student should be able to demonstrate an understanding of how costs may be controlled and productivity improved on a construction project.

CMT 218 Human Relations Issues*3 0 3**

Prerequisites: CMT 210

Corequisites: None

Available: Spring

This course provides instruction on human relations issues as they relate to construction project supervision. Topics include relationships, human behavior, project staffing issues, teamwork, effective communication networks, laws and regulations, and identifying and responding to conflict, crisis, and discipline. Upon completion, the student will demonstrate an understanding of the importance of human relations in the success of a construction project.

Cooperative Education

COE 111 Co-op Work Experience I 0 0 10 1

Prerequisites: See Department Chair for prerequisites

Corequisites: None

Available: See Department Chair for availability

This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

COE 112 Co-op Work Experience I 0 0 20 2

Prerequisites: See Department Chair for prerequisites

Corequisites: None

Available: See Department Chair for availability

This course provides work experience with a college approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

COE 113 Co-op Work Experience I 0 0 30 3

Prerequisites: See Department Chair for prerequisites

Corequisites: None

Available: See Department Chair for availability

This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

COE 115 Work Experience Seminar I 1 0 0 1

Prerequisites: See Department Chair for prerequisites

Corequisites: Select one: COE 111, COE 112, COE 113, COE 114

Available: See Department Chair for availability

This course description may be written by the individual colleges.

COE 121 Co-op Work Experience II 0 0 10 1

Prerequisites: See Department Chair for prerequisites

Corequisites: None

Available: See Department Chair for availability

This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

COE 122 Co-op Work Experience II 0 0 20 2

Prerequisites: See Department Chair for prerequisites

Corequisites: None

Available: See Department Chair for availability

This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

COE 123 Co-op Work Experience II 0 0 30 3

Prerequisites: See Department Chair for prerequisites

Corequisites: None

Available: See Department Chair for availability

This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

COE 125 Work Experience Seminar II 1 0 0 1

Prerequisites: See Department Chair for prerequisites

Corequisites: Select one: COE 121, COE 122, COE 123, COE 124

Available: See Department Chair for availability

This course description may be written by the individual college.

COE 131 Co-op Work Experience III 0 0 10 1

Prerequisites: See Department Chair for prerequisites

Corequisites: None

Available: See Department Chair for availability

This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

*COE 135 Work Experience Seminar III 1 0 0 1

Prerequisites: See Department Chair for prerequisites

Corequisites: Select one: COE 131, COE 132, COE 133, COE 134

Available: See Department Chair for availability

This course description may be written by the individual colleges.

COE 212 Work Experience IV 0 0 20 2

Prerequisites: See Department Chair for prerequisites

Corequisites: None

Available: See Department Chair for availability

This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

COE 213 Co-op Work Experience IV 0 0 30 3

Prerequisites: See Department Chair for prerequisites

Corequisites: None

Available: See Department Chair for availability

This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

COE 215 Work Experience Seminar IV 1 0 0 1

Prerequisites: See Department Chair for prerequisites

Corequisites: Select one: COE 211, COE 212, COE 213, COE 214

Available: See Department Chair for availability

This course description may be written by the individual colleges.

Communications

COM 120 Intro to Interpersonal Communication 3 0 3

Prerequisites: None

Corequisites: None

Available: Fall, Spring, Summer

This course introduces the practices and principles of interpersonal communication in both dyadic and group settings. Emphasis is placed on the communication process, perception, listening, self-disclosure, speech apprehension, ethics, nonverbal communication, conflict, power, and dysfunctional communication relationships. Upon completion, students should be able to demonstrate interpersonal communication skills, apply basic principles of group discussion, and manage conflict in interpersonal communication situations. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts (substitute).

COM 140 Intro to Intercultural Communication 3 0 3

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course introduces techniques of cultural research, definitions, functions, characteristics, and impacts of cultural differences in public address. Emphasis is placed on how diverse backgrounds influence the communication act and how cultural perceptions and experiences determine how one sends and receives messages. Upon completion, students should be able to demonstrate an understanding of the principles and skills needed to become effective in communicating outside one's primary culture. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts (substitute).

COM 150 Intro to Mass Communication 3 0 3

Prerequisites: ENG 111

Corequisites: ENG 112, ENG 113 or ENG 114

Available: Spring

This course introduces print and electronic media and the new information technologies in terms of communication theory and as economic, political, and social institutions. Emphasis is on the nature, history, functions, and responsibilities of mass communication industries in a global environment and their role and impact in American society. Upon completion, students should have an awareness of the pervasive nature of the mass media and how the media operate in an advanced post-industrial society. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

COM 160 Small Group Communications 3 0 3

Prerequisites: None

Corequisites: None

Available: As Needed

This course provides an overview of the theory, practice, and critical analysis of communication in the small group setting. Emphasis is placed on group development, conflict, and conformity; leadership skills and styles; group roles and ranks; and decision making, problem solving, and conflict resolution. Upon completion, students should be able to apply topics of gender, culture, and social-emotional functions within group settings. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

COM 231 Public Speaking 3 0 3

Prerequisites: RED 090

Corequisites: None

Available: Fall, Spring, Summer

This course provides instruction and experience in preparation and delivery of speeches within a public setting and group discussion. Emphasis is placed on research, preparation, delivery, and evaluation of informative, persuasive, and special occasion public speaking. Upon completion, students should be able to prepare and deliver well-organized speeches and participate in group discussion with appropriate audiovisual support. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts (substitute).

COM 250 Public Communication 3 0 3

Prerequisites: ENG 113 or ENG 114, and COM 120 or COM 231

Corequisites: None

Available: As Needed

This course provides a comprehensive theoretical background for the practice of speaking in public utilizing rhetoric principles applied in a series of speaking experiences. Emphasis is on informative and persuasive advanced speaking skills; speaking using the teleprompter, and on-camera presentations of news, weather and commercials. Upon completion of a portfolio of course assignments, students should be able to construct, present, and critique public communications messages that are complex, dynamic and purposeful for broadcast (radio and television), web delivery, and professional forums. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

Cosmetology

COS 111 Cosmetology Concepts I 4 0 4

Prerequisites: None

Corequisites: COS 112

Available: Fall

This course introduces basic cosmetology concepts. Topics include safety, first aid, sanitation, bacteriology, anatomy, diseases and disorders, hygiene, product knowledge, chemistry, ethics, manicures, and other related topics. Upon completion, students should be able to safely and competently apply cosmetology concepts in the salon setting.

COS 112 Salon I 0 24 8

Prerequisites: None

Corequisites: COS 111

Available: Fall

This course introduces basic salon services. Topics include scalp treatments, shampooing, rinsing, hair color, design, haircutting, permanent waving, pressing, relaxing, wigs, and other related topics. Upon completion, students should be able to safely and competently demonstrate salon services.

COS 113 Cosmetology Concepts II 4 0 4

Prerequisites: COS 111

Corequisites: COS 114

Available: Spring, Summer

This course covers more comprehensive cosmetology concepts. Topics include safety, product knowledge, chemistry, manicuring, chemical restructuring, and hair coloring. Upon completion, students should be able to safely and competently apply these cosmetology concepts in the salon setting.

COS 114 Salon II Prerequisites: COS 112 Corequisites: COS 113 Available: Spring, Summer This course provides experience in a simulated salon setting. Topics include basic skin care, manicuring, nail application, scalp treatments, shampooing, rinsing, hair color, design, haircutting, chemical restructuring, pressing, wigs, and other related topics. Upon completion, students should be able to safely and competently demonstrate these salon services.	0	24	8	COS 120 Esthetics Salon I Prerequisites: RED 080 or placement Corequisites: COS 119 Available: Fall This course covers the techniques of esthetics in a comprehensive experience in a simulated salon setting. Topics include client consultation, facials, body treatments, hair removal, make-up applications, and color analysis. Upon completion, students should be able to safely and competently demonstrate esthetic services on clients in a salon setting.	0	18	6
COS 115 Cosmetology Concepts III Prerequisites: COS 113 Corequisites: COS 116 Available: Spring, Summer This course covers more comprehensive cosmetology concepts. Topics include safety, product knowledge, salon management, salesmanship, skin care, electricity/light therapy, wigs, thermal hair styling, lash and brow tinting, superfluous hair removal, and other related topics. Upon completion, students should be able to safely and competently apply these cosmetology concepts in the salon setting.	4	0	4	COS 121 Manicure/Nail Technology I Prerequisites: RED 080 or placement Corequisites: None Available: Fall, Spring This course covers techniques of nail technology, hand and arm massage, and recognition of nail diseases and disorders. Topics include OSHA/safety, sanitation, bacteriology, product knowledge, salesmanship, manicures, artificial applications, pedicures, massage, and other related topics. Upon completion, students should be able to safely and competently perform nail care, including manicures, pedicures, massage, decorating, and artificial applications in a salon setting.	4	6	6
COS 116 Salon III Prerequisites: COS 114 Corequisites: COS 115 Available: Spring, Summer This course provides comprehensive experience in a simulated salon setting. Emphasis is placed on intermediate-level of skin care, manicuring, scalp treatments, shampooing, hair color, design, haircutting, chemical restructuring, pressing, and other related topics. Upon completion, students should be able to safely and competently demonstrate these salon services.	0	12	4	COS 125 Esthetics Concepts II Prerequisites: COS 119 Corequisites: COS 126 Available: Spring This course covers more comprehensive esthetics concepts. Topics include nutrition, business management, make-up and color analysis. Upon completion students should be able to demonstrate an understanding of the advanced esthetics concepts and meet course requirements.	2	0	2
COS 117 Cosmetology Concepts IV Prerequisites: COS 115 Corequisites: COS 118 Available: Fall, Summer 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.	2	0	2	COS 126 Esthetics Salon II Prerequisites: COS 120 Corequisites: COS 125 Available: Spring This course provides experience in a simulated esthetics setting. Topics include machine facials, aroma therapy, massage therapy, electricity, and apparatus. Upon completion, students should be able to demonstrate competence in program requirements and the areas covered on the Cosmetology licensing examination for Estheticians.	0	18	6
COS 118 Salon IV Prerequisites: COS 116 Corequisites: COS 117 Available: Fall, Summer 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.	0	21	7	COS 222 Manicure/Nail Technology II Prerequisites: COS 121 Corequisites: None Available: Fall, Spring This course covers advanced techniques of nail technology and hand and arm massage. Topics include OSHA/safety, product knowledge, customer service, salesmanship, artificial applications, nail art, and other related topics. Upon completion, students should be able to demonstrate competence necessary for the licensing examination, including advanced nail care, artificial enhancements, and decorations.	4	6	6
COS 119 Esthetics Concepts I Prerequisites: RED 080 or placement Corequisites: COS 120 Available: Fall This course covers the concepts of esthetics. Topics include orientation, anatomy, physiology, hygiene, sterilization, first aid, chemistry, basic dermatology, and professional ethics. Upon completion, students should be able to demonstrate an understanding of the concepts of esthetics and meet course requirements.	2	0	2	COS 240 Contemporary Design Prerequisites: COS 111 and COS 112 Corequisites: None Available: As Needed This course covers methods and techniques for contemporary designs. Emphasis is placed on contemporary designs and other related topics. Upon completion, students should be able to demonstrate and apply techniques associated with contemporary design.	1	3	2

COS 260 Design Applications**1 3 2**

Prerequisites: COS 115, COS 116

Corequisites: None

Available: Spring

This course provides an overview of the design concepts used in cosmetology. Topics include the application of art principles and elements to artistically design hair, nails, and make-up and other related topics. Upon completion, students should be able to demonstrate knowledge and techniques associated with design concepts.

Computer Programming**CSC 134 C++ Programming****2 3 3**

Prerequisites: CIS 115

Corequisites: None

Available: As Needed

This course introduces computer programming using the C++ programming language with object-oriented programming principles. Emphasis is placed on event-driven programming methods, including creating and manipulating objects, classes, and using object-oriented tools such as the class debugger. Upon completion, students should be able to design, code, test and debug at a beginning level. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

CSC 139 Visual BASIC Programming**2 3 3**

Prerequisites: CIS 115

Corequisites: None

Available: As Needed

This course introduces computer programming using the Visual BASIC programming language with object-oriented programming principles. Emphasis is placed on event-driven programming methods, including creating and manipulating objects, classes, and using object-oriented tools such as the class debugger. Upon completion, students should be able to design, code, test and debug at a beginning level. This course is also available through the Virtual Learning Community (VLC). This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

CSC 151 JAVA Programming**2 3 3**

Prerequisites: CIS 115

Corequisites: None

Available: Fall, Spring

This course introduces computer programming using the JAVA programming language with object-oriented programming principles. Emphasis is placed on event-driven programming methods, including creating and manipulating objects, classes, and using object-oriented tools such as the class debugger. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

Construction**CTST 211 Construction Surveying****2 3 3**

Prerequisites: Select one: MAT 115, MAT 120, MAT 121, MAT 161, MAT 171, MAT 175

Corequisites: None

Available: Summer

This course covers field-surveying applications for residential and commercial construction. Topics include building layout and leveling, linear measurement and turning angles, plumbing vertical members, and topographic and utilities surveys. Upon completion, students should be able to properly and accurately use surveying equipment to lay out residential and commercial buildings.

Computer Information Technology**CTS 060 Essential Computer Usage****1 2 2**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course covers the basic functions and operations of the computer. Topics include identification of components, overview of operating systems and other basic computer operations. Upon completion, students should be able to perform basic computer commands, access files, print documents and complete fundamental application operations.

CTS 115 Info Sys Business Concept**3 0 3**

Prerequisites: CIS115, DBA110, WEB115

Corequisites: None

Available: Fall, Spring

The course introduces the role of IT in managing business processes and the need for business process and IT alignment. Emphasis is placed on industry need for understanding business challenges and developing/managing information systems to contribute to the decision making process based on these challenges. Upon completion, students should be able to demonstrate knowledge of the 'hybrid business manager' and the potential offered by new technology and systems. Students will acquire the skills to prepare themselves and their work for a career in the information technology field.

This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

CTS 120 Hardware/Software Support**2 3 3**

Prerequisites: CIS 110 or CIS 111, and NOS 110

Corequisites: None

Available: Fall

This course covers the basic hardware of a personal computer, including installation, operations and interactions with software. Topics include component identification, memory-system, peripheral installation and configuration, preventive maintenance, hardware diagnostics/repair, installation and optimization of system software, commercial programs, system configuration, and device-drivers. Upon completion, students should be able to select appropriate computer equipment and software, upgrade/maintain existing equipment and software, and troubleshoot/repair non-functioning personal computers.

CTS 130 Spreadsheet 2 2 3
 Prerequisites: CIS 110 or CIS 111 or OST 137, and MAT 070
 Corequisites: None
 Available: Fall, Spring
 This course introduces basic spreadsheet design and development. Topics include writing formulas, using functions, enhancing spreadsheets, creating charts, and printing. Upon completion, students should be able to design and print basic spreadsheets and charts. This course covers advanced functions, charting, macros, databases, and linking.

CTS 135 Integrated Software Intro 2 4 4
 Prerequisites: CIS 110 or CIS 111
 Corequisites: None
 Available: Fall, Spring
 This course instructs students in the Windows or Linux based program suites for word processing, spreadsheet, database, personal information manager, and presentation software. This course prepares students for introductory level skills in database, spreadsheet, personal information manager, word processing, and presentation applications to utilize data sharing. Upon completion, students should be able to design and integrate data at an introductory level to produce documents using multiple technologies.

***CTS 217 Computer Training/Support** 2 2 3
 Prerequisites: CIS 110 and DBA 110
 Corequisites: None
 Available: Fall
 This course introduces computer training and support techniques. Topics include methods of adult learning, training design, delivery, and evaluation, creating documentation, and user support methods. Upon completion, students should be able to design and implement training and provide continued support for computer users.

CTS 220 Advanced Hard/Software Support 2 3 3
 Prerequisites: CTS 120
 Corequisites: None
 Available: Spring
 This course provides advanced knowledge and competencies in hardware and operating system technologies for computer technicians to support personal computers. Emphasis is placed on configuring and upgrading; diagnosis and troubleshooting; as well as preventative maintenance of hardware and system software. Upon completion, students should be able to install, configure, diagnose, perform preventative maintenance, and maintain basic networking on personal computers.

***CTS 285 Systems Analysis and Design** 3 0 3
 Prerequisites: CIS 115, DBA 110 and Department Chair Approval
 Corequisites: None
 Available: Fall
 This course introduces established and evolving methodologies for the analysis, design, and development of an information system. Emphasis is placed on system characteristics, managing projects, prototyping, CASE/OOM tools, and systems development life cycle phases. Upon completion, students should be able to analyze a problem and design an appropriate solution using a combination of tools and techniques.

CTS 287 Emerging Technologies 3 0 3
 Prerequisites: CIS115, DBA110, WEB115
 Corequisites: None
 Available: Spring, Summer
 This course introduces emerging information technologies. Emphasis is placed on evolving technologies and trends in business and industry. Upon completion, students should be able to articulate an understanding of the current trends and issues in emerging technologies for information systems.

***CTS 289 System Support Project** 1 4 3
 Prerequisites: CTS 285
 Corequisites: None
 Available: Spring
 This course provides an opportunity to complete a significant support project with minimal instructor assistance. Emphasis is placed on written and oral communication skills, project definition, documentation, installation, testing, presentation, and user training. Upon completion, students should be able to complete a project from the definition phase through implementation.

Culinary

CUL 110 Sanitation and Safety 2 0 2
 Prerequisites: None
 Corequisites: None
 Available: Fall, Spring, Summer
 This course introduces the basic principles of sanitation and safety and their relationship to the hospitality industry. Topics include personal hygiene, sanitation and safety regulations, use and care of equipment, the principles of food-borne illness, and other related topics. Upon completion, students should be able to demonstrate an understanding of sanitation and safety procedures in the hospitality industry. Students are required to pass the National Restaurant Association sanitation examination to receive credit for the course.

***CUL 110A Sanitation and Safety Lab** 0 2 1
 Prerequisites: None
 Corequisites: CUL 110
 Available: Fall, Spring, Summer
 This course is a laboratory to accompany CUL 110. Emphasis is placed on practical experiences that enhance the materials presented in CUL 110. The focus of the class is to familiarize students with the operation and safe handling of commercial kitchen equipment. Upon completion, students should be able to demonstrate practical applications of sanitation and safety procedures in the hospitality industry.

CUL 112 Nutrition for Foodservice 3 0 3
 Prerequisites: None
 Corequisites: None
 Available: Spring
 This course covers the principles of nutrition and its relationship to the foodservice industry. Topics include fundamentals of personal nutrition, nutrition over the life cycle, weight management and exercise, health aspects of nutrition, developing healthy recipes and menus, healthy cooking techniques and marketing nutrition in a foodservice operation. Upon completion, students should be able to apply basic nutritional concepts to food preparation and selection.

CUL 120 Purchasing 2 0 2
 Prerequisites: None
 Corequisites: None
 Available: Spring, Summer
 This course covers purchasing for hotels and restaurants. Emphasis is placed on procurement, yield tests, inventory control, specification, planning, forecasting, market trends, terminology, cost controls, pricing, and food service ethics. Upon completion, students should be able to apply effective purchasing techniques based on the end-use of the product.

***CUL 130 Menu Design**

2 0 2

Prerequisites: CUL 140 or CUL 142, and HRM 220

Corequisites: None

Available: Fall

This course introduces menu design. Topics include development of standardized recipes, layout, nutritional concerns, product utilization, demographics, and customer needs. Upon completion, students should be able to write, lay out, and produce effective menus for a variety of hospitality settings.

***CUL 135 Food and Beverage Service**

2 0 2

Prerequisites: Select one: CUL 180, CUL 275, HRM 124

Corequisites: None

Available: Spring

This course covers the practical skills and knowledge for effective food and beverage service in a variety of settings. Topics include reservations, greeting and service of guests, styles of service, handling complaints, and sales and merchandising. Upon completion, students should be able to demonstrate competence in human relations and technical skills required in the service of foods and beverages.

***CUL 135A Food and Beverage Service Lab**

0 2 1

Prerequisites: Select one: CUL 180, CUL 275, HRM 124

Corequisites: CUL 135

Available: Spring

This course is a laboratory to accompany CUL 135. Emphasis is placed on practical experiences that enhance the materials presented in CUL 135. Upon completion, students should be able to demonstrate practical applications of skills required in the service of foods and beverages.

***CUL 140 Basic Culinary Skills**

2 6 5

Prerequisites: None

Corequisites: CUL 110, CUL 110A

Available: Fall

This course introduces the fundamental concepts, skills, and techniques involved in basic cookery. Emphasis is placed on recipe conversion, measurements, terminology, knife skills, safe food handling, cooking methods, flavorings, seasonings, stocks/sauces/soups, and other related topics. Upon completion, students should be able to exhibit the basic cooking skills used in the food service industry. Weekly participation in American Regional and International buffets, banquets, and a la carte production enhances students' culinary and service skills.

***CUL 142 Fundamentals of Food**

2 6 5

Prerequisites: None

Corequisites: CUL 110, CUL 110A, and CUL 150 or HRM 124

Available: Fall

This course introduces the student to the basic principles of cooking, baking, and kitchen operations. Topics include protein, starch, vegetable/fruit identification, selection, storage and preparation; breakfast cookery, breads, sweet doughs and pastries; knife/organizational skills, and work coordination. Upon completion, students should be able to execute efficiently a variety of cooking/baking skills as they apply to different stations in the kitchen. Weekly participation in American regional and international buffets, banquets, and a la carte production enhances student service skills.

***CUL 150 Food Science**

1 2 2

Prerequisites: None

Corequisites: None

Available: Fall, Spring, Summer

This course covers the chemical and physical changes in foods that occur with cooking, handling, and processing. Topics include heat transfer and its effect on color, flavor, and texture; and emulsification, protein coagulation, leavening agents, viscosity, and gel formation. Upon completion, students should be able to demonstrate an understanding of the principles covered as they apply to food preparation in an experimental setting.

***CUL 160 Baking I**

1 4 3

Prerequisites: None

Corequisites: CUL 110

Available: Fall, Spring, Summer

This course covers basic ingredients, weights and measures, baking terminology, and formula calculations. Topics include yeast-raised products, quick breads, pastry dough, various cakes and cookies, and appropriate filling and finishing techniques. Historical perspectives and current practices will be addressed. Upon completion, students should be able to prepare and evaluate baked products.

***CUL 170 Garde Manger I**

1 4 3

Prerequisites: CUL 110, CUL 110A

Corequisites: None

Available: Spring

This course introduces basic cold food preparation techniques and pantry production. Topics include salads, sandwiches, appetizers, dressings, basic garnishes, cheeses, cold sauces, and related food items. Upon completion, students should be able to lay out a basic cold food display and exhibit an understanding of the cold kitchen and its related terminology.

***CUL 180 International and American Regional Cuisine**

1 8 5

Prerequisites: COE 112, CUL 140, CUL 240, CUL 240A

Corequisites: None

Available: Fall

This course provides practical experience in the planning, preparation, and service of representative foods from different countries and regions of America. Emphasis is placed on eating habits, indigenous foods and customs, nutritional concerns, and traditional equipment. Upon completion, students should be able to research and execute international and domestic menus. Weekly participation in buffets, banquets, and a la carte production enhances students' supervisory and technical skills.

***CUL 214 Wine Appreciation**

1 2 2

Prerequisites: CUL 180 or CUL 275 or Department Chair Approval

Corequisites: None

Available: Spring

This course provides comprehensive and detailed information about wine from all the major wine producing countries. Emphasis is placed on the history of wine, production characteristics, laws, and purchasing and storing requirements. Upon completion, students should be able to determine what wines complement various cuisines and particular tastes. This course will also cover other beverages and legal aspects pertaining to beverage operations.

CUL 240 Advanced Culinary Skills*1 8 5**

Prerequisites: CUL 140

Corequisites: CUL 240A

Available: Spring

This course is a continuation of CUL 140. Emphasis is placed on meat fabrication and butchery; vegetable, starch, and protein cookery; compound sauces; plate presentation; breakfast cookery; and quantity food preparation. Upon completion, students should be able to plan, execute, and successfully serve entrees with complementary side items. Weekly participation in a la carte production enhances students' culinary and service skills.

CUL240A Advanced Culinary Skills Lab*0 3 1**

Prerequisites: CUL 140

Corequisites: CUL 240

Available: Spring

This is a laboratory course to accompany CUL 240. Emphasis is placed on the practical experiences that enhance the materials and skills presented in CUL 240. Upon completion, students should be able to demonstrate a basic proficiency in the preparation of entrees and accompaniments.

CUL 250 Classical Cuisine*1 8 5**

Prerequisites: CIS 110, CUL 130, CUL 140, CUL 160, CUL 180 or CUL 275, CUL 240, CUL 270, and HRM 245

Corequisites: CUL 135, CUL 135A and CUL 214

Available: Spring

This course reinforces the classical culinary kitchen as established by Escoffier. Topics include the working Grand Brigade of the kitchen, table d'hote menus, signature dishes, and classical banquets. Upon completion, students should be able to demonstrate competence in food preparation in a classical/upscale restaurant or banquet setting. This course includes weekly a la carte service encompassing contemporary and classical preparation and a capstone final exam.

CUL 260 Baking II*1 4 3**

Prerequisites: CUL 160

Corequisites: None

Available: Fall

This course is a continuation of CUL 160. Topics include specialty breads, understanding, development and maintaining of natural sourdough, classical desserts, laminated pastry dough, cake and torte decorating and dessert plating and presentation. Upon completion, students should be able to demonstrate pastry presentation and plating, specialty sourdough production, cake decorating and dessert buffet production skills.

CUL 270 Garde Manger II*1 4 3**

Prerequisites: CUL 170 and CUL 240

Corequisites: None

Available: Fall

This course is a continuation of CUL 170. Topics include pates, terrines, galantines, ice and tallow carving, chaud-froid/aspic work, charcuterie, smoking, canapes, hors d'oeuvres, and related food items. Upon completion, students should be able to design, set up, and evaluate a catering function to include a classical cold buffet with appropriate show pieces.

CUL 275 Catering Cuisine**1 8 5**

Prerequisites: COE 112, CUL 140, CUL 240, CUL 240A

Corequisites: None

Available: Fall

This course explores sequential steps to successful catering that includes sales, client needs, planning menus, purchasing, costing, pricing events, staffing and sanitation concerns. Emphasis is placed on new culinary competencies and skills specific to catering preparation, presentation, and service. Upon completion, students should be able to demonstrate proficiency in the successful design and execution of various catering events.

CUL 285 Competition Fundamentals*1 4 3**

Prerequisites: CUL 110, CUL 110A, and CUL 140 or CUL 160

Corequisites: None

Available: As Needed

This course provides practical expertise in the planning, techniques, and procedures required for culinary competitions and exhibitions. Emphasis is placed on competition strategies including menu planning, teamwork, plate design, flavor profiles, recipe development, nutrition, advanced knife/culinary skills, professionalism and portfolio development. Upon completion, students should be able to apply exhibition/competition skills and standards in the competition arena and professional kitchen.

Database Management Technology**DBA 110 Database Concepts****2 3 3**

Prerequisites: CIS 110, CIS 111 or CIS 115

Corequisites: None

Available: Fall, Spring

This course introduces database design and creation using a DBMS product. Emphasis is placed on data dictionaries, normalization, data integrity, data modeling, and creation of simple tables, queries, reports, and forms. Upon completion, students should be able to design and implement normalized database structures by creating simple database tables, queries, reports and forms.

DBA 120 Database Programming I**2 2 3**

Prerequisites: CIS 110

Corequisites: None

Available: Spring

This course is designed to develop SQL programming proficiency. Emphasis is placed on data definition, data manipulation, and data control statements as well as on report generation. Upon completion, students should be able to write programs which create, update and produce reports.

DBA 210 Database Administration**2 3 3**

Prerequisites: DBA 120

Corequisites: None

Available: Spring

This course covers database administration issues and distributed database concepts. Topics include database administrator (DBA) goals and functions, backup and recovery, standards and procedures, training, and database security and performance evaluations. Upon completion, students should be able to produce functional DBA documentation and administer a database.

Developmental Disabilities

DDT 110 Developmental Disabilities 3 0 0 3

Prerequisites: None

Corequisites: None

Available: Fall

This course identifies the characteristics and causes of various disabilities. Topics include history of service provision, human rights, legislation and litigation, advocacy, and accessing support services. Upon completion, students should be able to demonstrate an understanding of current and historical developmental disability definitions and support systems used throughout the life span. This course has been approved by the North Carolina Substance Abuse Professional Practice Board (NCSAPPB) for training/education credit for substance abuse certification/recertification.

Dental

*DEN 101 Preclinical Procedures 4 6 0 7

Prerequisites: None

Corequisites: DEN 111

Available: Fall

This course provides instruction in procedures for the clinical dental assistant as specified by the North Carolina Dental Practice Act. Emphasis is placed on orientation to the profession, infection control techniques, instruments, related expanded functions, and diagnostic, operative, and specialty procedures. Upon completion, students should be able to demonstrate proficiency in clinical dental assisting procedures. This is a diploma-level course.

*DEN 102 Dental Materials 3 4 0 5

Prerequisites: DEN 101

Corequisites: None

Available: Spring

This course provides instruction in identification, properties, evaluation of quality, principles, and procedures related to manipulation and storage of operative and specialty dental materials. Emphasis is placed on the understanding and safe application of materials used in the dental office and laboratory. Upon completion, students should be able to demonstrate proficiency in the laboratory and clinical application of routinely used dental materials. This is a diploma-level course.

DEN 103 Dental Sciences 2 0 0 2

Prerequisites: None

Corequisites: None

Available: Fall

This course is a study of oral pathology, pharmacology, and dental office emergencies. Topics include oral pathological conditions, dental therapeutics, and management of emergency situations. Upon completion, students should be able to recognize abnormal oral conditions, identify classifications, describe actions and effects of commonly prescribed drugs, and respond to medical emergencies. This is a diploma-level course.

*DEN 104 Dental Health Education 2 2 0 3

Prerequisites: DEN 101

Corequisites: None

Available: Spring

This course covers the study of preventative dentistry to prepare dental assisting students for the role of dental health educator. Topics include etiology of dental diseases, preventative procedures, and patient education theory and practice. Upon completion, students should be able to demonstrate proficiency in patient counseling and oral health instruction in private practice or public health settings. This is a diploma-level course.

*DEN 105 Practice Management 2 0 0 2

Prerequisites: None

Corequisites: None

Available: Spring

This course provides a study of principles and procedures related to management of the dental practice. Emphasis is placed on maintaining clinical and financial records, patient scheduling, and supply and inventory control. Upon completion, students should be able to demonstrate fundamental skills in dental practice management. This is a diploma-level course.

*DEN 106 Clinical Practice I 1 0 12 5

Prerequisites: DEN 101 and DEN 112

Corequisites: None

Available: Spring

This course is designed to provide experience assisting in a clinical setting. Emphasis is placed on the application of principles and procedures of four-handed dentistry and laboratory and clinical support functions. Upon completion, students should be able to utilize classroom theory, laboratory, and clinical skills in a dental setting. This is a diploma-level course.

*DEN 107 Clinical Practice II 1 0 12 5

Prerequisites: DEN 106

Corequisites: None

Available: Summer

This course is designed to increase the level of proficiency in assisting in a clinical setting. Emphasis is placed on the application of principles and procedures of four-handed dentistry and laboratory and clinical support functions. Upon completion, students should be able to combine theoretical and ethical principles necessary to perform entry-level skills including functions delegable to a DA II. This is a diploma-level course.

DEN 110 Orofacial Anatomy 2 2 0 3

Prerequisites: None

Corequisites: None

Available: Fall

This course introduces the structures of the head, neck, and oral cavity. Topics include tooth morphology, head and neck anatomy, histology, and embryology. Upon completion, students should be able to relate the identification of normal structures and development to the practice of dental assisting and dental hygiene.

DEN 111 Infection/Hazard Control 2 0 0 2

Prerequisites: MAT 060

Corequisites: DEN 101 or DEN 121

Available: Fall

This course introduces the infection and hazard control procedures necessary for the safe practice of dentistry. Topics include microbiology, practical infection control, sterilization and monitoring, chemical disinfectants, aseptic technique, infectious diseases, OSHA standards, and applicable North Carolina laws. Upon completion, students should be able to understand infectious diseases, disease transmission, infection control procedures, biohazard management, OSHA standards, and applicable North Carolina laws. Upon successful completion, students will also meet the requirements of 10ANC Administrative Code 41A.0206 for SPICE training.

DEN 112 Dental Radiography 2 3 0 3 Prerequisites: None Corequisites: DEN 101 or DEN 110 and DEN 111 and DEN 121 Available: Fall This course provides a comprehensive view of the principles and procedures of radiology as they apply to dentistry. Topics include techniques in exposing, processing, and evaluating radiographs, as well as radiation safety, quality assurance, and legal issues. Upon completion, students should be able to demonstrate proficiency in the production of diagnostically acceptable radiographs using appropriate safety precautions.	*DEN 130 Dental Hygiene Theory I 2 0 0 2 Prerequisites: DEN 120 Corequisites: DEN 131 Available: Spring This course is a continuation of the didactic dental hygiene concepts necessary for providing an oral prophylaxis. Topics include deposits/removal, instrument sharpening, patient education, fluorides, planning for dental hygiene treatment, charting, and clinical records and procedures. Upon completion, students should be able to demonstrate knowledge needed to complete a thorough oral prophylaxis.
DEN 120 Dental Hygiene Preclinic Lecture 2 0 0 2 Prerequisites: None Corequisites: DEN 121 Available: Fall This course introduces preoperative and clinical dental hygiene concepts. Emphasis is placed on the assessment phase of patient care as well as the theory of basic dental hygiene instrumentation. Upon completion, students should be able to collect and evaluate patient data at a basic level and demonstrate knowledge of dental hygiene instrumentation.	*DEN 131 Dental Hygiene Clinic I 0 0 9 3 Prerequisites: DEN 121 and DEN 112 Corequisites: DEN 130 Available: Spring This course continues skill development in providing an oral prophylaxis. Emphasis is placed on treatment of the recall patients with gingivitis or light deposits. Upon completion, students should be able to assess these patients' needs and complete the necessary dental hygiene treatment.
*DEN 121 Dental Hygiene Preclinic Lab 0 6 0 2 Prerequisites: None Corequisites: DEN 111 and DEN 120 Available: Fall This course provides the opportunity to perform clinical dental hygiene procedures discussed in DEN 120. Emphasis is placed on clinical skills in patient assessment and instrumentation techniques. Upon completion, students should be able to demonstrate the ability to perform specific preclinical procedures. Also, students should be able to demonstrate aseptic technique used in a dental environment.	*DEN 140 Dental Hygiene Theory II 1 0 0 1 Prerequisites: DEN 130 Corequisites: DEN 141 Available: Summer This course provides a continuation of the development, theory, and practice of patient care. Topics include modification of treatment for special needs patients, advanced radiographic interpretation, and ergonomics. Upon completion, students should be able to differentiate necessary treatment modifications, effective ergonomic principles, and radiographic abnormalities.
DEN 123 Nutrition/Dental Health 2 0 0 2 Prerequisites: None Corequisites: None Available: Fall This course introduces basic principles of nutrition with emphasis on nutritional requirements and their application to individual patient needs. Topics include the study of the food pyramid, nutrient functions, Recommended Daily Allowances, and related psychological principles. Upon completion, students should be able to recommend and counsel individuals on their food intake as related to their dental health.	*DEN 141 Dental Hygiene Clinic II 0 0 6 2 Prerequisites: DEN 124, DEN 131 Corequisites: DEN 140 Available: Summer This course continues skill development in providing an oral prophylaxis. Emphasis is placed on treatment of patients with early periodontal disease and subgingival deposits. Upon completion, students should be able to assess these patients' needs and complete the necessary dental hygiene treatment.
DEN 124 Periodontology 2 0 0 2 Prerequisites: DEN 110 Corequisites: None Available: Spring This course provides an in-depth study of the periodontium, periodontal pathology, periodontal monitoring, and the principles of periodontal therapy. Topics include periodontal anatomy and a study of the etiology, classification, and treatment modalities of periodontal diseases. Upon completion, students should be able to describe, compare, and contrast techniques involved in periodontal/maintenance therapy, as well as patient care management.	*DEN 220 Dental Hygiene Theory III 2 0 0 2 Prerequisites: DEN 140 Corequisites: DEN 221 Available: Fall This course provides a continuation in developing the theories and practices of patient care. Topics include periodontal debridement, pain control, subgingival irrigation, air polishing, and case presentations. Upon completion, students should be able to demonstrate knowledge of methods of treatment and management of periodontally compromised patients.
*DEN 125 Dental Office Emergencies 0 2 0 1 Prerequisites: None Corequisites: None Available: Spring This course provides a study of the management of dental office emergencies. Topics include methods of prevention, necessary equipment/drugs, medicolegal considerations, recognition and effective initial management of a variety of emergencies. Upon completion, students should be able to recognize, assess, and manage various dental office emergencies and activate advanced medical support when indicated.	*DEN 221 Dental Hygiene Clinic III 0 0 12 4 Prerequisites: DEN 141 Corequisites: DEN 220 Available: Fall This course continues skill development in providing an oral prophylaxis. Emphasis is placed on treatment of patients with moderate to advanced periodontal involvement and moderate deposits. Upon completion, students should be able to assess these patients' needs and complete the necessary dental hygiene treatment.

DEN 222 General and Oral Pathology**2 0 0 2**

Prerequisites: BIO 163 or BIO 165 or BIO 168 and DEN 110

Corequisites: None

Available: Summer

This course provides a general knowledge of oral pathological manifestations associated with selected systemic and oral diseases. Topics include developmental and degenerative diseases, selected microbial diseases, specific and nonspecific immune and inflammatory responses with emphasis on recognizing abnormalities. Upon completion, students should be able to differentiate between normal and abnormal tissues and refer unusual findings to the dentist for diagnosis.

DEN 223 Dental Pharmacology**2 0 0 2**

Prerequisites: DEN 110

Corequisites: Select one: BIO 163, BIO 165 or BIO 168

Available: Spring

This course provides basic drug terminology, general principles of drug actions, dosages, routes of administration, adverse reactions, and basic principles of anesthesiology. Emphasis is placed on knowledge of drugs in overall understanding of patient histories and health status. Upon completion, students should be able to recognize that each patient's general health or drug usage may require modification of the treatment procedures.

DEN 224 Materials and Procedures*1 3 0 2**

Prerequisites: DEN 111 and DEN 121

Corequisites: None

Available: Fall

This course introduces the physical properties of materials and related procedures used in dentistry. Topics include restorative and preventative materials, fabrication of casts and appliances, and chair-side functions of the dental hygienist. Upon completion, students should be able to demonstrate proficiency in the laboratory and/or clinical application of routinely used dental materials and chair-side functions.

DEN 230 Dental Hygiene Theory IV*1 0 0 1**

Prerequisites: DEN 220

Corequisites: DEN 231

Available: Spring

This course provides an opportunity to increase knowledge of the profession. Emphasis is placed on dental specialties and completion of a case presentation. Upon completion, students should be able to demonstrate knowledge of various disciplines of dentistry and principles of case presentations.

DEN 231 Dental Hygiene Clinic IV*0 0 12 4**

Prerequisites: DEN 221

Corequisites: DEN 230

Available: Spring

This course continues skill development in providing an oral prophylaxis. Emphasis is placed on periodontal maintenance and on treating patients with moderate to advanced/refractory periodontal disease. Upon completion, students should be able to assess these patients' needs and complete the necessary dental hygiene treatment.

DEN 232 Community Dental Health*2 0 3 3**

Prerequisites: None

Corequisites: COM 231 and SOC 240

Available: Fall, Spring

This course provides a study of the principles and methods used in assessing, planning, implementing, and evaluating community dental health programs. Topics include epidemiology, research methodology, biostatistics, preventative dental care, dental health education, program planning, and financing and utilization of dental services. Upon completion, students should be able to assess, plan, implement, and evaluate a community dental health program.

DEN 233 Professional Development*2 0 0 2**

Prerequisites: None

Corequisites: None

Available: Spring

This course includes professional development, ethics, and jurisprudence with applications to practice management. Topics include conflict management, state laws, resumes, interviews, and legal liabilities as health care professionals. Upon completion, students should be able to demonstrate the ability to practice dental hygiene within established ethical standards and state laws.

DEN 235 Dental Hygiene Concepts**2 0 0 2**

Prerequisites: None

Corequisites: None

Available: Spring

This course provides an opportunity to exhibit interpersonal and job-related skills for effective dental hygiene practice. Emphasis is placed on critical thinking and integration of didactic and clinical components into the workplace. Upon completion, students should be able to demonstrate the knowledge required of any entry-level dental hygienist.

Drafting**DFT 111 Technical Drafting I****1 3 2**

Prerequisites: None

Corequisites: None

Available: As Needed

This course introduces basic drafting skills, equipment, and applications. Topics include sketching, measurements, lettering, dimensioning, geometric construction, orthographic projections and pictorial drawings, sections, and auxiliary views. Upon completion, students should be able to understand and apply basic drawing principles and practices.

DFT 151 CAD I**2 3 3**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course introduces CAD software as a drawing tool. Topics include drawing, editing, file management, and plotting. Upon completion, students should be able to produce and plot a CAD drawing.

DFT 152 CAD II**2 3 3**

Prerequisites: DFT 151

Corequisites: None

Available: Spring

This course is a continuation of DFT 151. Topics include advanced two-dimensional, three-dimensional, and solid modeling and extended CAD applications. Upon completion, students should be able to generate and manage CAD drawings and models to produce engineering documents.

DFT 153 CAD III**2 3 3**

Prerequisites: DFT 151

Corequisites: None

Available: Summer

This course covers basic principles of three-dimensional CAD wireframe and surface models. Topics include user coordinate systems, three-dimensional viewpoints, three-dimensional wireframes, and surface components and viewpoints. Upon completion, students should be able to create and manipulate three-dimensional wireframe and surface models.

DFT 154 Intro Solid Modeling 2 3 3
 Prerequisites: DFT 151
 Corequisites: None
 Available: Spring
 This course is an introduction to basic three-dimensional solid modeling and design software. Topics include basic design, creation, editing, rendering and analysis of solid models and creation of multiview drawings. Upon completion, students should be able to use design techniques to create, edit, render and generate a multiview drawing.

DFT 161 Pattern Design & Layout 1 2 2
 Prerequisites: WLD 115
 Corequisites: None
 Available: Summer
 This course covers the layout of sheet metal and pipe fittings. Topics include the development of patterns and templates for metalworking industries. Upon completion, students should be able to develop, sketch, produce, and angle layouts.

DFT 170 Engineering Graphics 2 2 3
 Prerequisites: None
 Corequisites: None
 This course introduces basic engineering graphics skills and applications. Topics include sketching, selection and use of current methods and tools, and the use of engineering graphics applications. Upon completion, students should be able to demonstrate an understanding of basic engineering graphics principles and practices. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

DFT 189 Emerging Technologies in CAD 1 2 2
 Prerequisites: None
 Corequisites: None
 Available: As Needed
 This course provides an opportunity to explore new and emerging technologies related to Computer-Aided Drafting. Emphasis is placed on introducing a selected CAD technology or topic, identified as being "new" or "emerging", from a variety of drafting disciplines. Upon completion, students should be able to demonstrate an understanding of and practical skill in the use of the CAD technology studied.

DFT 251 Customizing CAD Software 2 2 3
 Prerequisites: DFT 151 and DFT 152
 Corequisites: None
 Available: Fall
 This course covers customizing CAD software. Topics include the creation of symbol libraries and screen menus, macro writing, and automation of common drafting functions on CAD. Upon completion, students should be able to create a symbol library and screen menu and automate common drawing functions.

***DFT 253 CAD Data Management** 2 2 3
 Prerequisites: DFT 151 and DFT 251
 Corequisites: None
 Available: Spring
 This course covers engineering document management techniques. Topics include efficient control of engineering documents, manipulation of CAD drawing data, generation of bill of materials, and linking to spreadsheets or databases. Upon completion, students should be able to utilize systems for managing CAD drawings, extract data from drawings, and link data to spreadsheets or database applications.

***DFT 259 CAD Project** 1 4 3
 Prerequisites: ARC 112, ARC 113, and DFT 251
 Corequisites: None
 Available: Spring
 This course is a capstone course experience for programs with a focus in computer-aided design. Emphasis is placed on the use of design principles and computer technology in planning, managing, and completing a design project. Upon completion, students should be able to plan and produce engineering documents of a design project, including solid models, working drawings, bom's, annotations, and spreadsheets.

Digital Media Technology

DME 110 Intro to Digital Media 2 2 3
 Prerequisites: None
 Corequisites: None
 Available: Fall, Spring
 This course introduces students to key concepts, technologies, and issues related to digital media. Topics include emerging standards, key technologies and related design issues, terminology, media formats, career paths, and ethical issues. Upon completion, students should be able to demonstrate the various media formats that are used in digital media technology.

DME 115 Graphic Design Tools 2 2 3
 Prerequisites: ART 171
 Corequisites: None
 Available: Fall
 This course provides students with an introduction to creative expression and art/design techniques in a digital environment. Emphasis is placed on designing, creating, editing, and integrating, visual components consisting of bit-mapped and vector-based images, drawings, banners, text, simple animations, and multiple layers. Upon completion, students should be able to design and produce a range of visual products using digital processing techniques.

DME 120 Intro to Multimedia Applications 2 2 3
 Prerequisites: DME 110 and DME 130
 Corequisites: None
 Available: Spring, Summer
 This course introduces storyboarding and multimedia application design. Topics include vector and bit-mapped graphics, interactive multimedia interfaces, layering techniques, image and animation libraries, and scripting. Upon completion, students should be able to produce basic high-quality interactive multimedia applications.

DME 130 Digital Animation I 2 2 3
 Prerequisites: DME 110
 Corequisites: None
 Available: Spring
 This course introduces concepts for planning and developing animation sequences. Emphasis will be placed on review of digital animation concepts and exploration of various animation software packages. Upon completion, students should be able to produce simple animations.

DME 140 Intro Audio/Video Media 2 2 3
 Prerequisites: DME 110
 Corequisites: None
 Available: Fall, Summer
 This course is designed to teach students how to manipulate digital and audio content for multimedia applications. Topics include format conversion and a review of current technologies and digital formats. Upon completion, students should be able to modify existing audio and video content to meet a range of production requirements associated with digital media applications.

DME 210 User Interface Design**2 2 3**

Prerequisites: DME 110, DME 130 and WEB 115

Corequisites: None

Available: Fall

This course covers current design approaches and emerging standards related to the design and development of user interfaces. Emphasis is placed on conducting research, and analyzing and reviewing current practices in effective interface design. Upon completion, students should be able to intelligently discuss and evaluate new and existing digital media products in terms of the user interface.

DME 220 Interact Multi-Media Programming**2 2 3**

Prerequisites: DME 120

Corequisites: None

Available: Spring

This course is designed to build on concepts developed in DME 120 and teaches students to apply custom programming to develop advanced applications and components. Emphasis is placed on scripting language functionalities associated with a variety of software packages. Upon completion, students should be able to produce advanced, high-quality interactive multimedia applications.

DME 230 Digital Animation II**2 2 3**

Prerequisites: DME 130

Corequisites: None

Available: Fall, Summer

This course introduces state-of-the-art 3D animation techniques and concepts. Emphasis is placed on utilizing the features of current animation software. Upon completion, students should be able to produce 3D animations as components of a multimedia application.

DME 240 Media Compression**2 2 3**

Prerequisites: DME 110 and DME 140

Corequisites: None

Available: Fall

This course will introduce software and usage of digital audio and video compression and streaming media technologies. Topics include compression techniques, file formats and codecs, streaming media, streaming media services, and current and emerging trends. Upon completion, students should be able to utilize compressed media in a variety of video, web and multimedia applications.

DME 260 Emerg Tech Digital Media*2 2 3**

Prerequisites: DME 120, DME 130, and DME 210

Corequisites: None

Available: Fall, Spring

This course provides students with the latest technologies and strategies in the field of digital media. Emphasis is placed on the evaluation of emerging digital media technologies and presenting those findings to the class. Upon completion, students should be able to critically analyze emerging digital media technologies and establish informed opinions.

DME 270 Prof Prac Digital Media*2 2 3**

Prerequisites: DME 120, DME 130, and DME 210

Corequisites: None

Available: Spring

This course introduces students to business skills needed to succeed in the digital media workplace. Topics include portfolio development, resume design, and preparation of media contacts. Upon completion, students should be able to prepare themselves and their work for a career in the digital media workplace.

DME 285 Systems Projects*2 2 3**

Prerequisites: DME 120, DME 130 and DME 210

Corequisites: None

Available: Spring

This course provides an opportunity to complete a significant digital media project from the design phase through implementation with minimal instructor support. Emphasis is placed on project definition, testing, presentation, and implementation. Upon completion, students should be able to complete, maintain and implement a digital media project.

Drama**DRA 111 Theatre Appreciation****3 0 3**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course provides a study of the art, craft, and business of the theatre. Emphasis is placed on the audience's appreciation of the work of the playwright, director, actor, designer, producer, and critic. Upon completion, students should be able to demonstrate a vocabulary of theatre terms and to recognize the contributions of various theatre artists. Attendance at one play performance and in-depth reading of two plays are required. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

DRA 112 Literature of the Theatre**3 0 3**

Prerequisites: None

Corequisites: None

Available: As Needed

This course provides a survey of dramatic works from the classical Greek through the present. Emphasis is placed on the language of drama, critical theory, and background as well as on play reading and analysis. Upon completion, students should be able to articulate, orally and in writing, their appreciation and understanding of dramatic works. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

DRA 120 Voice for Performance**3 0 3**

Prerequisites: None

Corequisites: None

Available: As Needed

This course provides guided practice in the proper production of speech for the theatre. Emphasis is placed on improving speech, including breathing, articulation, pronunciation, and other vocal variables. Upon completion, students should be able to demonstrate effective theatrical speech. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

DRA 122 Oral Interpretation**3 0 3**

Prerequisites: None

Corequisites: None

Available: As Needed

This course introduces the dramatic study of literature through performance. Emphasis is placed on analysis and performance of poetry, drama, and prose fiction. Upon completion, students should be able to embody and discuss critically the speakers inherent in literature. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

DRA 124 Readers Theatre 3 0 3 Prerequisites: None Corequisites: None Available: Fall, Spring This course provides a theoretical and applied introduction to the medium of readers theatre. Emphasis is placed on the group performance considerations posed by various genres of literature. Upon completion, students should be able to adapt and present a literary script following the conventions of readers theatre. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.	DRA 140 Stagecraft I 0 6 3 Prerequisites: None Corequisites: None Available: Fall This course introduces the theory and basic construction of stage scenery and properties. Topics include stage carpentry, scene painting, stage electrics, properties, and backstage organization. Upon completion, students should be able to pursue vocational and avocational roles in technical theatre. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.
DRA 126 Storytelling 3 0 3 Prerequisites: None Corequisites: None Available: Fall, Spring This course introduces the art of storytelling and the oral traditions of folk literature. Topics include the history of storytelling, its value and purpose, techniques of the storyteller, and methods of collecting verbal art. Upon completion, students should be able to present and discuss critically stories from the world's repertory of traditional lore. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.	DRA 141 Stagecraft II 0 6 3 Prerequisites: DRA 140 Corequisites: None Available: Spring This course provides additional hands-on practice in the elements of stagecraft. Emphasis is placed on the design and implementation of the arts and crafts of technical theatre. Upon completion, students should be able to pursue vocational or avocational roles in technical theatre. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.
DRA 130 Acting I 0 6 3 Prerequisites: None Corequisites: None Available: Fall This course provides an applied study of the actor's craft. Topics include role analysis, training the voice, and body concentration, discipline, and self-evaluation. Upon completion, students should be able to explore their creativity in an acting ensemble. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.	DRA 145 Stage Make-up 1 2 2 Prerequisites: None Corequisites: None Available: As Needed This course covers the research, design, selection of materials, and application of stage make-up, prosthetics, wigs, and hairpieces. Emphasis is placed on the development of techniques, style, and presentation of the finished make-up. Upon completion, students should be able to create and apply make-up prosthetics, and hairpieces. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.
DRA 131 Acting II 0 6 3 Prerequisites: DRA 130 Corequisites: None Available: Spring This course provides additional hands-on practice in the actor's craft. Emphasis is placed on further analysis, characterization, growth, and training for acting competence. Upon completion, students should be able to explore their creativity in an acting ensemble. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.	DRA 170 Play Production I 0 9 3 Prerequisites: None Corequisites: None Available: Fall This course provides an applied laboratory study of the processes involved in the production of a play. Topics include fundamental practices, principles, and techniques associated with producing plays of various periods and styles. Upon completion, students should be able to participate in an assigned position with a college theatre production. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.
DRA 135 Acting for the Camera I 1 4 3 Prerequisites: None Corequisites: None Available: As Needed This course provides an applied study of the camera actor's craft. Topics include commercial, dramatic, and print performance styles. Upon completion, students should be able to explore their creativity in on-camera performance. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.	DRA 171 Play Production II 0 9 3 Prerequisites: DRA 170 Corequisites: None Available: Spring This course provides an applied laboratory study of the processes involved in the production of a play. Topics include fundamental practices, principles, and techniques associated with producing plays of various periods and styles. Upon completion, students should be able to participate in an assigned position with a college theatre production. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

DRA 211 Theatre History I**3 0 3**

Prerequisites: None

Corequisites: None

Available: Fall

This course covers the development of theatre from its origin to the closing of the British theatre in 1642. Topics include the history, aesthetics, and representative dramatic literature of the period. Upon completion, students should be able to trace the evolution of theatre and recognize the styles and types of world drama. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

DRA 240 Lighting for the Theatre**2 2 3**

Prerequisites: None

Corequisites: None

Available: As Needed

This course is an applied study of theatre lighting and is designed to train theatre technicians. Emphasis is placed on lighting technology including the mechanics of lighting and light control equipment by practical work with lighting equipment. Upon completion, students should be able to demonstrate competence with lighting equipment. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

DRA 250 Theatre Management**1 3 2**

Prerequisites: None

Corequisites: None

Available: As Needed

This course introduces the organization and operation of a theatre. Emphasis is placed on organization, communication, networking with other organizations, and grant writing. Upon completion, students should be able to demonstrate an understanding of the structure and operation of a theatre organization. This course has been approved to satisfy the Comprehensive Articulation Agreement general education elective requirement in humanities/fine arts.

Economics**ECO 151 Survey of Economics****3 0 3**

Prerequisites: None

Corequisites: None

Available: As Needed

This course introduces basic concepts of micro- and macroeconomics. Topics include supply and demand, optimizing economic behavior, prices and wages, money, interest rates, banking system, unemployment, inflation, taxes, government spending, and international trade. Upon completion, students should be able to explain alternative solutions for economic problems faced by private and government sectors. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

ECO 251 Principles of Microeconomics**3 0 3**

Prerequisites: None

Corequisites: None

Available: Summer

This course introduces economic analysis of individual, business, and industry choices in the market economy. Topics include the price mechanism, supply and demand, optimizing economic behavior, costs and revenue, market structures, factor markets, income distribution, market failure, and government intervention. Upon completion, students should be able to identify and evaluate consumer and business alternatives in order to efficiently achieve economic objectives. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

ECO 252 Principles of Macroeconomics**3 0 3**

Prerequisites: ECO 151 or ECO 251

Corequisites: None

Available: Fall

This course introduces economic analysis of aggregate employment, income, and prices. Topics include major schools of economic thought; aggregate supply and demand; economic measures, fluctuations, and growth; money and banking; stabilization techniques; and international trade. Upon completion, students should be able to evaluate national economic components, conditions, and alternatives for achieving socioeconomic goals. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

Education**EDU 114 Intro to Family Childcare****3 0 3**

Prerequisites: Take one set

Set 1: ENG 080, RED 080, MAT 060

Set 2: ENG 085, MAT 060

Corequisites: None

Available: Spring

This course introduces the student to family child care home environments with emphasis on standards and developmentally effective approaches for supporting diverse children and families. Topics include standards for quality, curriculum for multiple age groups, authentic assessment methods, business practices, building positive family and community partnerships, and professionalism. Upon completion, students should be able to design a family child care handbook that reflects a healthy, respectful, supportive, and stimulating learning environment.

EDU 118 Princ & Prac of Inst Asst**3 0 3**

Prerequisites: Take one set

Set 1: ENG 080, RED 080

Set 2: ENG 085

Corequisites: None

Available: Spring

This course covers the instructional assistant's role in the educational system. Topics include history of education, professional responsibilities and ethics, cultural diversity, communication skills, and identification of the optimal learning environment. Upon completion, students should be able to describe the supporting role of the instructional assistant, demonstrate positive communication skills, and discuss educational philosophy.

EDU 119 Intro to Early Child Educ 4 0 4 Prerequisites: None Corequisites: None Available: Spring This course covers the foundations of the education profession, the diverse educational settings for young children, professionalism and planning developmentally appropriate programs for all children. Topics include historical foundations, program types, career options, professionalism and creating inclusive environments and curriculum responsive to the needs of all children and families. Upon completion, students should be able to design career plans and develop schedules, environments and activity plans appropriate for all children.	EDU 146 Child Guidance 3 0 3 Prerequisites: Take one set Set 1: ENG 080, RED 080 Set 2: ENG 085 Corequisites: None Available: Spring This course introduces principles and practical techniques including the design of learning environments for providing developmentally appropriate guidance for all children, including those at risk. Emphasis is placed on observation skills, cultural influences, underlying causes of behavior, appropriate expectations, development of self control and the role of communication and guidance. Upon completion, students should be able to demonstrate direct/indirect strategies for preventing problem behaviors, teaching appropriate/acceptable behaviors, negotiation, setting limits and recognizing at risk behaviors. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.
EDU 131 Child, Family, & Commun 3 0 3 Prerequisites: Take one set Set 1: ENG 080, RED 080 Set 2: ENG 085 Corequisites: None Available: Spring This course covers the development of partnerships between culturally and linguistically diverse families, children, schools and communities. Emphasis is placed on developing skills and identifying benefits for establishing, supporting, and maintaining respectful, collaborative relationships between diverse families, programs/schools, and community agencies/resources. Upon completion, students should be able to explain appropriate relationships between families, educators, and professionals that enhance development and educational experiences of all children.	EDU 151 Creative Activities 3 0 3 Prerequisites: Take one set Set 1: ENG 080, RED 080 Set 2: ENG 085 Corequisites: None Available: Spring This course covers planning, creation and adaptation of developmentally supportive learning environments with attention to curriculum, interactions, teaching practices and learning materials. Emphasis is placed on creating and adapting integrated, meaningful, challenging and engaging developmentally supportive learning experiences in art, music, movement and dramatics for all children. Upon completion, students should be able to create, adapt, implement and evaluate developmentally supportive learning materials, experiences and environments.
EDU 144 Child Development I 3 0 3 Prerequisites: Take one set Set 1: ENG 080, RED 080 Set 2: ENG 085 Corequisites: None Available: Fall This course includes the theories of child development, needs, milestones, and factors that influence development, from conception through approximately 36 months. Emphasis is placed on developmental sequences in physical/motor, emotional/social, cognitive, and language domains and the impact of multiple influences on development and learning. Upon completion, students should be able to compare/contrast typical/atypical developmental characteristics, explain environmental factors that impact development, and identify strategies for enhancing development. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.	EDU 151A Creative Activities Lab 0 2 1 Prerequisites: Take one set Set 1: ENG 080, RED 080 Set 2: ENG 085 Corequisites: EDU 151 Available: Spring This course provides a laboratory component to complement EDU 151. Emphasis is placed on practical experiences that enhance concepts introduced in the classroom. Upon completion, students should be able to demonstrate a practical understanding of the development and implementation of appropriate creative activities.
EDU 145 Child Development II 3 0 3 Prerequisites: Take one set Set 1: ENG 080, RED 080 Set 2: ENG 085 Corequisites: None Available: Spring This course includes the theories of child development, needs, milestones, and factors that influence development, from preschool through middle childhood. Emphasis is placed on developmental sequences in physical/motor, emotional/social, cognitive, and language domains and the impact of multiple influences on development and learning. Upon completion, students should be able to compare/contrast typical/atypical developmental characteristics, explain environmental factors that impact development, and identify strategies for enhancing development. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.	EDU 153 Health, Safety & Nutrit 3 0 3 Prerequisites: Take one set Set 1: ENG 080, RED 080 Set 2: ENG 085 Corequisites: None Available: Spring This course covers promoting and maintaining the health and well-being of all children. Topics include health and nutritional guidelines, common childhood illnesses, maintaining safe and healthy learning environments, recognition and reporting of abuse and neglect and state regulations. Upon completion, students should be able to demonstrate knowledge of health, safety, and nutritional needs, safe learning environments, and adhere to state regulations.

EDU 153A Health, Safety, & Nut Lab**0 2 1**

Prerequisites: Take one set

Set 1: ENG 080, RED 080

Set 2: ENG 085

Corequisites: EDU 153

Available: Spring

This course provides a laboratory component to complement EDU 153. Emphasis is placed on practical experiences that enhance concepts introduced in the classroom. Upon completion, students should be able to demonstrate a practical understanding of the development and implementation of safe indoor/outdoor environments and nutrition education programs.

EDU 154 Social/Emotion/Behav Dev**3 0 3**

Prerequisites: Take one set

Set 1: ENG 080, RED 080, EDU 144, EDU 145

Set 2: ENG 080, RED 080, PSY 244, PSY 245

Set 3: ENG 085, EDU 144, EDU 145

Set 4: ENG 085, PSY 244, PSY 245

Corequisites: None

Available: Fall

This course covers the emotional/social development of children and the causes, expressions, prevention and management of challenging behaviors in all children. Emphasis is placed on caregiver/family/child relationships, positive emotional/social environments, developmental concerns, risk factors, and intervention strategies. Upon completion, students should be able to identify factors influencing emotional/social development, utilizing screening measures, and designing positive behavioral supports.

EDU 163 Classroom Mgt & Instruct**3 0 3**

Prerequisites: Take one set

Set 1: ENG 080, RED 080

Set 2: ENG 085

Corequisites: None

Available: Fall

This course covers management and instructional techniques with school-age populations. Topics include classroom management and organization, teaching strategies, individual student differences and learning styles, and developmentally appropriate classroom guidance techniques. Upon completion, students should be able to utilize developmentally appropriate behavior management and instructional strategies that enhance the teaching/learning process and promote students' academic success.

EDU 184 Early Child Intro Pract**1 3 2**

Prerequisites: Take one set

Set 1: ENG 080, RED 080, EDU 119

Set 2: ENG 085, EDU 119

Corequisites: None

This course introduces students to early childhood settings and applying skills in a three star (minimum) or NAEYC accredited or equivalent, quality early childhood environment. Emphasis is placed on observing children and assisting in the implementation of developmentally appropriate activities/environments for all children; and modeling reflective/professional practices. Upon completion, students should be able to demonstrate developmentally appropriate interactions with children and ethical/professional behaviors as indicated by assignments and onsite faculty visits.

EDU 214 Early Child Intern Pract**1 9 4**

Prerequisites: Take one set

Set 1: ENG 090, RED 090, EDU 119, EDU 144, EDU 146

Set 2: ENG 090, RED 090, PSY 244, EDU 119, EDU 146

Set 3: ENG 095, EDU 119, EDU 144, EDU 146

Set 4: ENG 095, EDU 119, PSY 244, EDU 146

Corequisites: None

Available: Fall

This course is designed to allow students to apply skills in a three star (minimum) or NAEYC accredited or equivalent, quality early childhood environment. Emphasis is placed on observing children and assisting with the implementation of developmentally appropriate activities and environments for all children; modeling reflective and professional practices. Upon completion, students should be able to demonstrate developmentally appropriate plans/assessments, appropriate guidance techniques and ethical/professional behaviors as indicated by assignments and onsite faculty visits.

EDU 216 Foundations of Education**4 0 4****(EDU 216 replaced EDU 116)**

Prerequisites: Take one set

Set 1: ENG 090, RED 090

Set 2: ENG 095

Corequisites: None

Available: As Needed

This course introduces the American educational system and the teaching profession. Topics include historical and philosophical foundations of education, contemporary educational, structural, legal, and financial issues, and experiences in public school classrooms. Upon completion, students should be able to relate classroom observations to the roles of teachers and schools and the process of teacher education. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement at select institutions only.

EDU 221 Children with Exceptional**3 0 3**

Prerequisites: Take one set

Set 1: ENG 090, RED 090, EDU 144 EDU 145

Set 2: ENG 090, RED 090, PSY 244 PSY 245

Set 3: ENG 095, EDU 144 EDU 145

Set 4: ENG 095, PSY 244 PSY 245

Corequisites: None

Available: Fall

This course introduces children with exceptionalities, their families, support services, inclusive/diverse settings, and educational/family plans based on the foundations of child development. Emphasis is placed on the characteristics of exceptionalities, observation and assessment of children, strategies for adapting the learning environment, and identification of community resources. Upon completion, students should be able to recognize diverse abilities, describe the referral process, and depict collaboration with families/professionals to plan/implement, and promote best practice. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement at select institutions only.

EDU 234 Infants, Toddlers, & Twos 3 0 3 Prerequisites: Take one set Set 1: ENG 090, RED 090, EDU 119 Set 2: ENG 095, EDU 119 Corequisites: None Available: Spring This course covers the unique needs and rapid changes that occur in the first three years of life and the inter-related factors that influence development. Emphasis is placed on recognizing and supporting developmental milestones through purposeful strategies, responsive care routines and identifying elements of quality, inclusive early care and education. Upon completion, students should be able to demonstrate respectful relationships that provide a foundation for healthy infant/toddler/twos development, plan/select activities/materials, and partner with diverse families.	EDU 251A Exploration Act Lab 0 2 1 Prerequisites: Take one set Set 1: ENG 090, RED 090 Set 2: ENG 095 Corequisites: EDU 251 Available: Summer This course provides a laboratory component to complement EDU 251. Emphasis is placed on practical experiences that enhance concepts introduced in the classroom. Upon completion, students should be able to demonstrate a practical understanding of the development and implementation of appropriate science, math, and social studies activities for children.
EDU 243 Learning Theory 3 0 3 Prerequisites: Take one set Set 1: ENG 090, RED 090 Set 2: ENG 095 Corequisites: None Available: As Needed This course provides lateral entry teachers an introduction to learning theory, various styles of learning, and motivational factors involved in the learning process. Emphasis is placed on the development of cognitive skills using the eight types of intelligence and applying these to practical classroom situations. Upon completion, students should be able to describe theories and styles of learning and discuss the relationship between different types of intelligence to learning motivation.	EDU 261 Early Childhood Admin I 3 0 3 Prerequisites: Take one set Set 1: ENG 090, RED 090 Set 2: ENG 095 Corequisites: EDU 119 Available: Spring This course introduces principles of basic programming and staffing, budgeting/financial management and marketing, and rules and regulations of diverse early childhood programs. Topics include program structure and philosophy, standards of NC child care programs, finance, funding resources, and staff and organizational management. Upon completion, students should be able to develop components of program/personnel handbooks, a program budget, and demonstrate knowledge of fundamental marketing strategies and NC standards.
EDU 248 Developmental Delays 3 0 3 Prerequisites: Take one set Set 1: ENG 090, RED 090, EDU 144, EDU 145 Set 2: ENG 090, RED 090, PSY 244, PSY 245 Set 3: ENG 095, EDU 144, EDU 145 Set 4: ENG 095, PSY 244, PSY 245 Corequisites: None Available: Spring This course covers the causes and assessment of developmental delays and individualized instruction and curriculum for children with developmental delays. Emphasis is placed on definition, characteristics, assessment, educational strategies, inclusion, family involvement, and services for children with developmental delays. Upon completion, students should be able to identify, assess, and plan educational intervention strategies for children with developmental delays and their families.	EDU 262 Early Childhood Admin II 3 0 3 Prerequisites: Take one set Set 1: ENG 090, RED 090, EDU 261 Set 2: ENG 095, EDU 261 Corequisites: EDU 119 Available: Fall This course focuses on advocacy/leadership, public relations/community outreach and program quality/evaluation for diverse early childhood programs. Topics include program evaluation/accreditation, involvement in early childhood professional organizations, leadership/mentoring, family, volunteer and community involvement and early childhood advocacy. Upon completion, students should be able to define and evaluate all components of early childhood programs, develop strategies for advocacy and integrate community into programs.
EDU 251 Exploration Activities 3 0 3 Prerequisites: Take one set Set 1: ENG 090, RED 090 Set 2: ENG 095 Corequisites: None Available: Summer This course covers discovery experiences in science, math, and social studies. Emphasis is placed on developing concepts for each area and encouraging young children to explore, discover, and construct concepts. Upon completion, students should be able to discuss the discovery approach to teaching, explain major concepts in each area, and plan appropriate experiences for children.	EDU 271 Educational Technology 2 2 3 Prerequisites: Take one set Set 1: ENG 090, RED 090 Set 2: ENG 095 Corequisites: None Available: Fall This course introduces the use of technology to enhance teaching and learning in all educational settings. Topics include technology concepts, instructional strategies, materials and adaptive technology for children with exceptionalities, facilitation of assessment/evaluation, and ethical issues surrounding the use of technology. Upon completion, students should be able to apply technology enhanced instructional strategies, use a variety of technology resources and demonstrate appropriate technology skills in educational environments.

EDU 280 Language & Literacy Exp**3 0 3**

Prerequisites: Take one set

Set 1: ENG 090, RED 090

Set 2: ENG 095

Corequisites: None

Available: Fall

This course is designed to expand students' understanding of children's language and literacy development and provides strategies for enhancing language/literacy experiences in an enriched environment. Topics include selection of diverse literature and interactive media, the integration of literacy concepts throughout the curriculum, appropriate observations/assessments and inclusive practices. Upon completion, students should be able to select, plan, implement and evaluate developmentally appropriate and diverse language/literacy experiences.

**EDU 281 Instruct Strat/Read & Writ
(EDU 281 replaced EDU 186)****2 2 3**

Prerequisites: Take one set

Set 1: ENG 090, RED 090

Set 2: ENG 095

Corequisites: None

Available: Spring

This course covers concepts, resources, and methods for teaching reading and writing to elementary through middle-grade children. Topics include the importance of literacy, learning styles, skills assessment, various reading and writing approaches and instructional strategies. Upon completion, students should be able to assess, plan, implement and evaluate school-age literacy experiences as related to the North Carolina Standard Course of Study.

EDU 284 Early Child Capstone Prac**1 9 4**

Prerequisites: Take one set

Set 1: ENG 090, RED 090, EDU 119, EDU 144, EDU 145, EDU 146, EDU 151

Set 2: ENG 090, RED 090, EDU 119, PSY 244, PSY 245, EDU 146, EDU 151

Set 3: ENG 090, RED 090, EDU 119, PSY 245, EDU 144, EDU 146, EDU 151

Set 4: ENG 090, RED 090, EDU 119, PSY 244, EDU 145, EDU 146, EDU 151

Set 5: ENG 095, EDU 119, EDU 144, EDU 145, EDU 146, EDU 151

Set 6: ENG 095, EDU 119, PSY 244, PSY 245, EDU 146, EDU 151

Set 7: ENG 095, EDU 119, EDU 144, PSY 245, EDU 146, EDU 151

Set 8: ENG 095, EDU 119, EDU 145, PSY 244, EDU 146, EDU 151

Corequisites: None

Available: Spring

This course is designed to allow students to apply skills in a three star (minimum) or NAEYC accredited or equivalent, quality early childhood environment. Emphasis is placed on designing, implementing and evaluating developmentally appropriate activities and environments for all children; supporting/involving families; and modeling reflective and professional practices. Upon completion, students should be able to demonstrate developmentally appropriate plans/assessments, appropriate guidance techniques and ethical/professional behaviors as indicated by assignments and onsite faculty visits.

EDU 285 Internship Exp-School Age**1 9 4**

Prerequisites: Take one set

Set 1: ENG 090, RED 090, EDU 144, EDU 145, EDU 118, EDU 163

Set 2: ENG 090, RED 090, PSY 244, PSY 245, EDU 118, EDU 163

Set 3: ENG 090, RED 090, PSY 244, EDU 145, EDU 118, EDU 163

Set 4: ENG 090, RED 090, EDU 144, PSY 245, EDU 118, EDU 163

Set 5: ENG 090, RED 090, PSY 244, PSY 245, EDU 216, EDU 163

Set 6: ENG 090, RED 090, EDU 144, EDU 145, EDU 216, EDU 163

Set 7: ENG 090, RED 090, EDU 144, PSY 245, EDU 216, EDU 163

Set 8: ENG 090, RED 090, PSY 244, EDU 216, EDU 163

Set 9: ENG 095, PSY 244, PSY 245, EDU 118, EDU 163

Set 10: ENG 095, EDU 144, EDU 145, EDU 118, EDU 163

Set 11: ENG 095, EDU 144, PSY 245, EDU 118, EDU 163

Set 12: ENG 095, PSY 244, EDU 145, EDU 118, EDU 163

Set 13: ENG 095, PSY 244, PSY 245, EDU 216, EDU 163

Set 14: ENG 095, EDU 144, EDU 145, EDU 216, EDU 163

Set 15: ENG 095, EDU 144, PSY 245, EDU 216, EDU 163

Set 16: ENG 095, PSY 244, EDU 145, EDU 216, EDU 163

Corequisites: None

Available: Spring

This course is designed to allow students to apply skills in a quality public or private school environment. Emphasis is placed on designing, implementing and evaluating developmentally appropriate activities and environments for all children; supporting/involving families; and modeling reflective and professional practices. Upon completion, students should be able to demonstrate developmentally appropriate lesson plans/assessments, appropriate guidance techniques, ethical/professional behaviors as indicated by assignments and onsite faculty visits.

EDU 289 Adv Issues/School Age**2 0 2**

Prerequisites: Take one set

Set 1: ENG 090, RED 090

Set 2: ENG 095

Corequisites: None

Available: Fall

This course covers advanced topics and issues that relate to school-age programs. Emphasis is placed on current advocacy issues, emerging technology, professional growth, ethics, and organizations for providers/teachers working with school-age populations. Upon completion, students should be able to list, discuss, and explain advanced current topics and issues surrounding school-aged populations.

Engineering***EGR 110 Introduction to Engineering Tech****1 2 2**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course introduces general topics relevant to engineering technology. Skills developed include goal setting and career assessment, professional ethics, critical thinking and problem solving, using college resources for study and research, and using tools for engineering computations. Upon completion, students should be able to choose a career option in engineering technology and utilize college resources to meet their educational goals.

EGR 115 Intro to Technology	2 3 3	*EGR 230 Engineering Materials	3 0 3
Prerequisites: None		Prerequisites: CHM 151	
Corequisites: None		Corequisites: None	
Available: Fall		Available: As Needed	
This course introduces the basic skills and career fields for technicians. Topics include career options, technical vocabulary, dimensional analysis, measurement systems, engineering graphics, calculator applications, professional ethics, safety practices, and other related topics. Upon completion, students should be able to demonstrate an understanding of the basic technologies, prepare drawings and sketches, and perform computations using a scientific calculator.		This course provides an introduction to fundamental physical principals governing the structure and constitution of metallic and nonmetallic materials. Topics include the relationship among the fundamental physical principles and the mechanical, physical and chemical properties of engineering materials. Upon completion, students should be able to explain the fundamental physical properties important to the design and understanding of engineering materials. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.	
*EGR 125 Application Software for Technicians	1 2 2	EGR 285 Design Project	0 4 2
Prerequisites: None		Prerequisites: Department Chair Approval	
Corequisites: None		Corequisites: None	
Available: Fall, Spring		Available: As Needed	
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.		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.	
*EGR 130 Engineering Cost Control	2 2 3	Electrical	
Prerequisites: MAT 121 or MAT 161 or MAT 171		ELC 111 Introduction to Electricity	2 2 3
Corequisites: None		Prerequisites: MAT 060	
Available: As Needed		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.		Available: Fall	
*EGR 150 Intro to Engineering	1 2 2	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.	
Prerequisites: MAT 080 or Placement		ELC 112 DC/AC Electricity	3 6 5
Corequisites: None		Prerequisites: MAT 060	
Available: As Needed		Corequisites: None	
This course is an overview of the engineering profession. Topics include goal setting and career assessment, ethics, public safety, the engineering method and design process, written and oral communication, interpersonal skills and team building, and computer applications. Upon completion, students should be able to understand the engineering process, the engineering profession, and utilize college resources to meet their educational goals. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.		Available: As Needed	
*EGR 220 Engineering Statics	3 0 3	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.	
Prerequisites: PHY 251		ELC 113 Basic Wiring I	2 6 4
Corequisites: MAT 272		Prerequisites: None	
Available: As Needed		Corequisites: None	
This course introduces the concepts of engineering based on forces in equilibrium. Topics include concentrated forces, distributed forces, forces due to friction and inertia as they apply to machines, structures, and systems. Upon completion, students should be able to solve problems which require the ability to analyze systems of forces in static equilibrium. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.		Available: Fall	
		This course introduces the care/usage of tools and materials used in electrical installations and the requirements of the National Electrical Code. Topics include NEC, electrical safety, and electrical blueprint reading; planning, layout; and installation of electrical distribution equipment; lighting; overcurrent protection; conductors; branch circuits; and conduits. Upon completion, students should be able to properly install conduits, wiring, and electrical distribution equipment associated with basic electrical installations.	

ELC 115 Industrial Wiring
2 6 4

Prerequisites: ELC 113

Corequisites: None

Available: Spring

This course covers layout, planning, and installation of wiring systems in industrial facilities. Emphasis is placed on industrial wiring methods and materials. Upon completion, students should be able to install industrial systems and equipment.

ELC 117 Motors and Controls
2 6 4

Prerequisites: Select one: AHR 111, ELC 111, ELC 112, ELC 131, ELC 138

Corequisites: None

Available: Fall, Spring

This course introduces the fundamental concepts of motors and motor controls. Topics include ladder diagrams, pilot devices, contactors, motor starters, motors, and other control devices. Upon completion, students should be able to properly select, connect, and troubleshoot motors and control circuits.

ELC 118 National Electrical Code
1 2 2

Prerequisites: ELC 113 or Department Chair Approval

Corequisites: None

Available: Spring, Summer

This course covers the use of the current National Electrical Code. Topics include the NEC history, wiring methods, overcurrent protection, materials, and other related topics. Upon completion, students should be able to effectively use the NEC.

ELC 128 Introduction to PLC
2 3 3

Prerequisites: None

Corequisites: None

Available: As Needed

This course introduces the programmable logic controller (PLC) and its associated applications. Topics include ladder logic diagrams, input/output modules, power supplies, surge protection, selection/installation of controllers, and interfacing of controllers with equipment. Upon completion, students should be able to install PLCs and create simple programs.

ELC 132 Electrical Drawings
1 3 2

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course introduces the technical documentation that is typically found or used in the industrial environment. Topics include interpretation of service manuals, freehand sketching of lines, orthographic views and dimensions, and blueprint reading. Upon completion, students should be able to interpret technical documents and blueprints and use basic drafting skills to prepare usable field drawings.

ELC 133 Advanced Circuit Analysis
2 3 3

Prerequisites: ELC 131 or ELC 139

Corequisites: None

Available: As Needed

This course covers additional concepts of DC/AC electricity, the use of test equipment, and measurement techniques for electrical/electronics majors. Topics include the application of network theorems such as delta/wye transformations, Superposition Theorem, and other advanced circuit analysis principles. Upon completion, students should be able to construct and analyze DC/AC circuits and use advanced circuit analysis theorems, circuit simulators, and test equipment

ELC 138 DC Circuit Analysis
2 3 3

Prerequisites: None

Corequisites: MAT 070, RED 080

Available: Fall

This course introduces DC electricity with an emphasis on circuit analysis, measurements, and operation of test equipment. Topics include DC principles, circuit analysis laws and theorems, components, test equipment operation, circuit simulation, and other related topics. Upon completion, students should be able to interpret circuit schematics; design, construct, and analyze DC circuits; and properly use test equipment.

ELC 139 AC Circuit Analysis
2 3 3

Prerequisites: ELC 138

Corequisites: None

Available: Spring

This course introduces AC electricity with an emphasis on circuit analysis, measurements, and operation of test equipment. Topics include AC voltages, circuit analysis laws and theorems, reactive components and circuits, transformers, test equipment operation, circuit simulation, and other related topics. Upon completion, students should be able to interpret AC circuit schematics; analyze and troubleshoot AC circuits; and properly use test equipment.

ELC 213 Instrumentation
3 2 4

Prerequisites: Select one: AHR 111, ELC 111, ELC 112, ELC 131, ELC 138

Corequisites: None

Available: Spring, Summer

This course covers the fundamentals of instrumentation used in industry. Emphasis is placed on electric, electronic, and pneumatic instruments. Upon completion, students should be able to design, install, maintain, and calibrate instrumentation.

ELC 228 PLC Applications
2 6 4

Prerequisites: ELC 128

Corequisites: None

Available: Spring

This course covers programming and applications of programmable logic controllers. Emphasis is placed on programming techniques, networking, specialty I/O modules, and system troubleshooting. Upon completion, students should be able to specify, implement, and maintain complex PLC controlled systems.

***ELC 229 Applications Project**
1 3 2

Prerequisites: None

Corequisites: None

Available: As Needed

This course provides an individual and/or integrated team approach to a practical project as approved by the instructor. Topics include project selection and planning, implementation and testing, and a final presentation. Upon completion, students should be able to plan and implement an applications-oriented project. Students must possess a working knowledge of electrical theory, circuits, and control in order to be successful in this course.

ELC 233 Energy Management 2 2 3
 Prerequisites: Select one: AHR 111, ELC 111, ELC 112, ELC 131, ELC 138
 Corequisites: None
 Available: Spring
 This course covers energy management principles and techniques typical of those found in industry and commercial facilities, including load control and peak demand reduction systems. Topics include load and peak demand calculations, load shedding, load balance and power factor, priority scheduling, remote sensing and control, and supplementary/alternative energy sources. Upon completion, students should be able to determine energy management parameters, calculate demand and energy use, propose energy management procedures, and implement alternative energy sources.

Electronics

ELN 133 Digital Electronics 3 3 4
 Prerequisites: Select one: ELC 111, ELC 112, ELC 131, ELC 138
 Corequisites: None
 Available: Fall, Spring
 This course covers combinational and sequential logic circuits. Topics include number systems, Boolean algebra, logic families, MSI and LSI circuits, AC/DC converters, and other related topics. Upon completion, students should be able to construct, analyze, verify, and troubleshoot digital circuits using appropriate techniques and test equipment.

ELN 133A Digital Electronics Lab 0 3 1
 Prerequisites: None
 Corequisites: ELN 133
 Available: Spring, Summer
 This course is laboratory to accompany ELN 133. Emphasis is placed on laboratory experiences which enhance the materials presented in ELN 133 and which provide practical experience. Upon completion, students should be able to demonstrate a general understanding of digital fundamentals.

ELN 137 Electronic Devices and Circuits 4 3 5
 Prerequisites: ELC 138
 Corequisites: None
 Available: Fall
 This course covers diodes, transistors, linear integrated circuits, and IC voltage regulators. Topics include power supplies, switching circuits, amplifiers, oscillators, active filters, and other related topics. Upon completion, students should be able to analyze and troubleshoot circuits using schematic diagrams, appropriate test equipment, and manufacturer's data sheets

ELN 150 CAD for Electronics 1 3 2
 Prerequisites: None
 Corequisites: None
 Available: Spring
 This course introduces computer-aided drafting (CAD) with an emphasis on applications in the electronics field. Topics include electronics industry standards (symbols, schematic diagrams, layouts); drawing electronic circuit diagrams; and specialized electronic drafting practices and components such as resistors, capacitors, and ICs. Upon completion, students should be able to prepare electronic drawings with CAD software.

ELN 152 Fabrication Techniques 1 3 2
 Prerequisites: None
 Corequisites: None
 Available: Spring
 This course covers the fabrication methods required to create a prototype product from the initial circuit design. Topics include CAD, layout, sheet metal working, component selection, wire wrapping, PC board layout and construction, reverse engineering, soldering, and other related topics. Upon completion, students should be able to design and construct an electronic product with all its associated documentation.

ELN 154 Introduction to Data Communication 2 3 3
 Prerequisites: ELN 133 with ELN 132 or ELN 137
 Corequisites: None
 Available: As Needed
 This course introduces the principal elements and theory (analog and digital techniques) of data communication systems and how they are integrated as a complete network. Topics include an overview of data communication, OSI model, transmission modes, serial and parallel interfaces, applications of ICs, protocols, network configurations, modems, and related applications. Upon completion, students should be able to demonstrate knowledge of the concepts associated with data communication systems and high speed networks.

ELN 232 Introduction to Microprocessors 3 3 4
 Prerequisites: ELN 133
 Corequisites: None
 Available: Spring
 This course introduces microprocessor architecture and microcomputer systems including memory and input/output interfacing. Topics include assembly language programming, bus architecture, bus cycle types, I/O systems, memory systems, interrupts, and other related topics. Upon completion, students should be able to interpret, analyze, verify, and troubleshoot fundamental microprocessor circuits and programs using appropriate techniques and test equipment.

ELN 234 Communication Systems 3 3 4
 Prerequisites: ELN 133 with ELN 132 or ELN 137
 Corequisites: None
 Available: Fall, Spring
 This course introduces the fundamentals of electronic communication systems. Topics include the frequency spectrum, electrical noise, modulation techniques, characteristics of transmitters and receivers, and digital communications. Upon completion, students should be able to interpret analog and digital communication circuit diagrams, analyze transmitter and receiver circuits, and use appropriate communication test equipment.

ELN 237 Local Area Networks 2 3 3
 Prerequisites: Select One: CET 111, CIS 110, CIS 111
 Corequisites: None
 Available: Fall, Spring
 This course introduces the fundamentals of local area networks and their operation in business and computer environments. Topics include the characteristics of network topologies, system hardware (repeaters, bridges, routers, gateways), system configuration, and installation and administration of the LAN. Upon completion, students should be able to install, maintain, and manage a local area network.

ELN 238 Advanced LANs**2 3 3**

Prerequisites: ELN 237

Corequisites: None

Available: Spring, Summer

This course covers advanced concepts, tools, and techniques associated with servers, workstations, and overall local area network performance. Topics include network security and configuration, system performance and optimization, communication protocols and packet formats, troubleshooting techniques, multi-platform integration, and other related topics. Upon completion, students should be able to use advanced techniques to install, manage, and troubleshoot networks and optimize server and workstation performance.

Emergency Medical Science**EMS 110 EMT - Basic****5 6 0 7**

Prerequisites: Enrollment in EMS program

Corequisites: None

Available: Fall

This course introduces basic emergency medical care. Topics include preparatory, airway, patient assessment, medical emergencies, trauma, infants and children, and operations. Upon completion, students should be able to demonstrate the knowledge and skills necessary for the EMT-Basic certification.

EMS 111 Prehospital Environment**2 2 0 3**

Prerequisites: Enrollment in EMS program

Corequisites: None

Available: Fall

This course introduces the prehospital care environment and is required for all levels of EMT certification. Topics include roles, responsibilities, laws, ethics, communicable diseases, hazardous materials recognition, therapeutic communications, EMS systems, and defense tactics. Upon completion of EMS 110 and EMS 111, students should be able to demonstrate competencies and skills necessary to achieve EMT-Basic certification.

EMS 115 Defense Tactics for EMS**1 3 0 2**

Prerequisites: Enrollment in EMS program

Corequisites: None

Available: As Needed

This course is designed to provide tactics that can be used for self-protection in dangerous and violent situations. Emphasis is placed on prediction, recognition, and response to dangerous and violent situations. Upon completion, students should be able to recognize potentially hostile situations and protect themselves during a confrontation.

EMS 120 Intermediate Interventions**2 3 0 3**

Prerequisites: BIO 168 and EMS 110, EMS 111 or EMS 115, and enrollment in EMS program

Corequisites: EMS 121 or EMS 122, EMS 130, EMS 131, and BIO 169

Available: Spring

This course is designed to provide the necessary information for interventions appropriate to the EMT-Intermediate, and is required for intermediate certification. Topics include automated external defibrillation, basic cardiac electrophysiology, intravenous therapy, venipuncture, acid-base balance, and fluids and electrolytes. Upon completion, students should be able to properly establish an IV line, obtain venous blood, utilize AEDs, and correctly interpret arterial blood gases. Current N.C. EMT certification is required for students enrolling in this course.

EMS 121 EMS Clinical Practicum I**0 0 6 2**

Prerequisites: BIO 168, EMS 110, EMS 111 or EMS 115, and enrollment in EMS program

Corequisites: EMS 120, EMS 130, EMS 131, and BIO 169

Available: Spring

This course is the initial hospital and field internship and is required for intermediate and paramedic certification. Emphasis is placed on intermediate-level care. Upon completion, students should be able to demonstrate competence with intermediate-level skills. Current N.C. EMT certification is required for students enrolling in this course.

EMS 125 EMS Instructor Methodology**1 2 0 2**

Prerequisites: None

Corequisites: None

Available: As Needed

This course covers the information needed to develop and instruct EMS courses. Topics include instructional methods, lesson plan development, time management skills, and theories of adult learning. Upon completion, students should be able to teach EMS courses and meet the North Carolina EMS requirements for instructor methodology.

EMS 130 Pharmacology for EMS**1 3 0 2**

Prerequisites: BIO 168, EMS 110, and enrollment in EMS program

Corequisites: BIO 169, EMS 120, and EMS 131

Available: Spring

This course introduces the fundamental principles of pharmacology and medication administration and is required for intermediate and paramedic certification. Topics include terminology, pharmacokinetics, pharmacodynamics, weights, measures, drug calculations, legislation, and administration routes. Upon completion, students should be able to accurately calculate drug dosages, properly administer medications, and demonstrate general knowledge of pharmacology.

EMS 131 Advanced Airway Management**1 2 0 2**

Prerequisites: BIO 168, EMS 110, and enrollment in EMS program

Corequisites: BIO 169, EMS 120, and EMS 130

Available: Spring

This course is designed to provide advanced airway management techniques and is required for intermediate and paramedic certification. Topics include respiratory anatomy and physiology, airway, ventilation, adjuncts, surgical intervention, and rapid sequence intubation. Upon completion, students should be able to properly utilize all airway adjuncts and pharmacology associated with airway control and maintenance.

EMS 140 Rescue Scene Management**1 3 0 2**

Prerequisites: Enrollment in EMS program

Corequisites: EMS 140A

Available: Fall

This course introduces rescue scene management and is required for paramedic certification. Topics include response to hazardous material conditions, medical incident command, and extrication of patients from a variety of situations. Upon completion, students should be able to recognize and manage rescue operations based upon initial and follow-up scene assessment. Skills will include vehicle extrication, water rescue, rescue from heights, and confined space rescue.

EMS 140A Rescue Scene Skills Lab**0 3 0 1**

Prerequisites: Enrollment in EMS Program

Corequisites: EMS 140

Available: Fall

This course is designed to provide enhanced rescue scene skills for EMS providers. Emphasis is placed on advanced rescue scene evolutions including hazardous materials and major incident response. Upon completion, students should be able to demonstrate skills necessary to safely effect patients rescue in a variety of situations.

EMS 150 Emergency Vehicles & EMS Communication**1 3 0 2**

Prerequisites: Enrollment in EMS program

Corequisites: None

Available: Fall

This course examines the principles governing maintenance of emergency vehicles and EMS communication equipment and is required for paramedic certification. Topics include applicable motor vehicle laws affecting emergency vehicle operation, defensive driving, collision avoidance techniques, communication systems, and information management systems. Upon completion, students should have a basic knowledge of emergency vehicles, maintenance, and communication needs.

EMS 210 Advanced Patient Assessment**1 3 0 2**

Prerequisites: EMS 120, EMS 130, EMS 131, and either EMS 121 or EMS 122

Corequisites: None

Available: Summer

This course covers advanced patient assessment techniques and is required for paramedic certification. Topics include initial assessment, medical-trauma history, field impression, complete physical exam process, on-going assessment, and documentation skills. Upon completion, students should be able to utilize basic communication skills and record and report collected patient data.

EMS 220 Cardiology**2 6 0 4**

Prerequisites: EMS 120, EMS 121, EMS 130, and EMS 131

Corequisites: EMS 210 and EMS 221

Available: Summer

This course provides an in-depth study of cardiovascular emergencies and is required for paramedic certification. Topics include anatomy and physiology, pathophysiology, rhythm interpretation, cardiac pharmacology, and patient treatment. Upon completion, students should be able to certify at the Advanced Cardiac Life Support provider level utilizing American Heart Association Guidelines. In addition, the course provides instruction in the use of various cardiac monitoring devices.

EMS 221 EMS Clinical Practicum II**0 0 9 3**

Prerequisites: EMS 121 or EMS 122 and COE 111, EMS 120, EMS 130 and EMS 131

Corequisites: EMS 210 and EMS 220

Available: Summer

This course is a continuation of the hospital and field internship required for paramedic certification. Emphasis is placed on advanced-level care. Upon completion, students should be able to demonstrate continued progress in advanced-level patient care. Current N.C. EMT certification is required for students enrolling in this course.

EMS 230 Pharmacology II for EMS**1 3 0 2**

Prerequisites: EMS 130

Corequisites: None

Available: Spring

This course explores the fundamental classification and action of common pharmacologic agents. Emphasis is placed on the action and use of compounds most commonly encountered in the treatment of chronic and acutely ill patients. Upon completion, students should be able to demonstrate general knowledge of drugs covered during the course.

EMS 231 EMS Clinical Practicum III**0 0 9 3**

Prerequisites: EMS 221 or EMS 222 and COE 121, EMS 210 and EMS 220

Corequisites: EMS 250 and EMS 260

Available: Fall

This course is a continuation of the hospital and field internship required for paramedic certification. Emphasis is placed on advanced-level care. Upon completion, students should be able to demonstrate continued progress in advanced-level patient care. Current N.C. EMT certification is required for students enrolling in this course.

EMS 240 Special Needs Patients**1 2 0 2**

Prerequisites: EMS 120, EMS 121 or EMS 122, EMS 130, and EMS 131

Corequisites: EMS 241

Available: Spring

This course includes concepts of crisis intervention and techniques of dealing with special needs patients and is required for paramedic certification. Topics include behavioral emergencies, abuse, assault, challenged patients, personal well-being, home care, and psychotherapeutic pharmacology. Upon completion, students should be able to recognize and manage frequently encountered special needs patients.

EMS 241 EMS Clinical Practicum IV**0 0 9 3**

Prerequisites: EMS 231 or EMS 232 and COE 131, EMS 250, and EMS 260

Corequisites: EMS 240, EMS 270, and EMS 285

Available: Spring

This course is a continuation of the hospital and field internship required for paramedic certification. Emphasis is placed on advanced-level care. Upon completion, students should be able to provide advanced-level patient care as an entry-level paramedic. Current N.C. EMT certification is required for students enrolling in this course.

EMS 250 Advanced Medical Emergencies**2 3 0 3**

Prerequisites: EMS 120, EMS 130, EMS 131, and either EMS 121 or EMS 122, EMS 210, EMS 220, and EMS 221

Corequisites: EMS 231

Available: Fall

This course presents an in-depth study of medical conditions frequently encountered in the prehospital setting and is required for paramedic certification. Topics include pulmonology, neurology, endocrinology, anaphylaxis, gastroenterology, toxicology, and environmental emergencies integrating case presentation and emphasizing pharmacotherapeutics. Upon completion, students should be able to recognize and manage frequently encountered medical conditions based upon initial patient impression.

EMS 260 Advanced Trauma Emergencies**1 3 0 2**

Prerequisites: EMS 120, EMS 130, EMS 131, and either EMS 121 or EMS 122, EMS 210, EMS 220, and EMS 221

Corequisites: EMS 231

Available: Fall

This course presents in-depth study of trauma including pharmacological interventions for conditions frequently encountered in the prehospital setting and is required for paramedic certification. Topics include hemorrhage control, shock, burns, and trauma to head, spine, soft tissue, thoracic, abdominal, and musculoskeletal areas with case presentations utilized for special problems situations. Upon completion, students should be able to recognize and manage trauma situations based upon patient impressions and should meet requirements of BTLS or PHTLS courses.

EMS 270 Life Span Emergencies**2 2 0 3**

Prerequisites: EMS 120, EMS 130 and EMS 131, EMS 231, EMS 250 and EMS 260

Corequisites: EMS 241

Available: Spring

This course, required for paramedic certification, covers medical/ethical/legal issues and the spectrum of age-specific emergencies from conception through death. Topics include gynecological, obstetrical, neonatal, pediatric, and geriatric emergencies and pharmacological therapeutics. Upon completion, students should be able to recognize and treat age-specific emergencies and certify at the Pediatric Advanced Life Support provider level.

EMS 280 EMS Bridging Course**2 2 0 3**

Prerequisites: Enrollment in EMS Program

Corequisites: None

Available: Spring

This course is designed to bridge the knowledge gained in a continuing education paramedic program with the knowledge gained in an EMS curriculum program. Topics include patient assessment, documentation, twelve-lead ECG analysis, thrombolytic agents, cardiac pacing, and advanced pharmacology. Upon completion, students should be able to perform advanced patient assessment documentation using the problem-oriented medical record format and manage complicated patients.

EMS 285 EMS Capstone**1 3 0 2**

Prerequisites: EMS 220, EMS 231, EMS 250, and EMS 260

Corequisites: EMS 241

Available: Spring

This course provides an opportunity to demonstrate problem-solving skills as a team leader in simulated patient scenarios and is required for paramedic certification. Emphasis is placed on critical thinking, integration of didactic and psychomotor skills, and effective performance in simulated emergency situations. Upon completion, students should be able to recognize and appropriately respond to a variety of EMS related events.

English**ENG 080 Writing Foundations****3 2 4**

Prerequisites: ENG 070 or ENG 075 or placement

Corequisites: None

Available: Fall, Spring, Summer

This course introduces the writing process and stresses effective sentences. Emphasis is placed on applying the conventions of written English, reflecting standard usage and mechanics in structuring a variety of sentences. Upon completion, students should be able to write correct sentences and a unified, coherent paragraph. This course does not satisfy the developmental writing prerequisite for ENG 111.

ENG 090 Composition Strategies**3 0 3**

Prerequisites: ENG 080 or ENG 085 or placement

Corequisites: ENG 090A

Available: Fall, Spring, Summer

This course provides practice in the writing process and stresses effective paragraphs. Emphasis is placed on learning and applying the conventions of standard written English in developing paragraphs within the essay. Upon completion, students should be able to compose a variety of paragraphs and a unified, coherent essay. This course, with ENG 090A, satisfies the developmental writing prerequisite for ENG 111.

ENG 090A Composition Strategies Lab**0 2 1**

Prerequisites: ENG 080 or ENG 085

Corequisites: ENG 090

Available: Fall, Spring, Summer

This writing lab is designed to practice the skills introduced in ENG 090. Emphasis is placed on learning and applying the conventions of standard written English in developing paragraphs within the essay. Upon completion, students should be able to compose a variety of paragraphs and a unified, coherent essay.

ENG 102 Applied Communications II**3 0 3**

Prerequisites: None

Corequisites: None

Available: As Needed

This course is designed to enhance writing and speaking skills for the workplace. Emphasis is placed on generating short writings such as job application documents, memoranda, and reports and developing interpersonal communication skills with employees and the public. Upon completion, students should be able to prepare effective, short, and job-related written and oral communications. This is a diploma-level course.

ENG 110 Freshman Composition**3 0 3**

Prerequisites: ENG 090 and RED 080

Corequisites: None

Available: Fall, Spring

This course is designed to develop informative and business writing skills. Emphasis is placed on logical organization of writing, including effective introductions and conclusions, precise use of grammar, and appropriate selection and use of sources. Upon completion, students should be able to produce clear, concise, well-organized short papers. An oral component is also integrated with the course

ENG 111 Expository Writing**3 0 3**

Prerequisites: (ENG 090, ENG 090A and RED 090) or ENG 095, or placement test

Corequisites: None

Available: Fall, Spring, Summer

This course is the required first course in a series of two designed to develop the ability to produce clear expository prose. Emphasis is placed on the writing process including audience analysis, topic selection, thesis support and development, editing, and revision. Upon completion, students should be able to produce unified, coherent, well-developed essays using standard written English. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in English Composition.

ENG 112 Argument-Based Research**3 0 3**

Prerequisites: ENG 111

Corequisites: None

Available: Fall, Spring

This course, the second in a series of two, introduces research techniques, documentation styles, and argumentative strategies. Emphasis is placed on analyzing data and incorporating research findings into documented argumentative essays and research projects. Upon completion, students should be able to summarize, paraphrase, interpret, and synthesize information from primary and secondary sources using standard research format and style. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in English Composition.

ENG 113 Literature-Based Research**3 0 3**

Prerequisites: ENG 111

Corequisites: None

Available: Fall, Spring, Summer

This course, the second in a series of two, expands the concepts developed in ENG 111 by focusing on writing that involves literature-based research and documentation. Emphasis is placed on critical reading and thinking and the analysis and interpretation of prose, poetry, and drama: plot, characterization, theme, cultural context, etc. Upon completion, students should be able to construct mechanically-sound, documented essays and research papers that analyze and respond to literary works. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in English Composition.

ENG 114 Professional Research and Reporting**3 0 3**

Prerequisites: ENG 111

Corequisites: Admission to a Major Program or English Department approval

Available: Fall, Spring, Summer

This course, the second in a series of two, is designed to teach professional communication skills. Emphasis is placed on research, listening, critical reading and thinking, analysis, interpretation, and design used in oral and written presentations. Upon completion, students should be able to work individually and collaboratively to produce well-designed business and professional written and oral presentations. Students entering this course should be able to demonstrate in-depth knowledge in a technical field and should anticipate interdepartmental evaluation of course projects. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in English Composition.

ENG 125 Creative Writing I**3 0 3**

Prerequisites: ENG 111

Corequisites: None

Available: As Needed

This course is designed to provide students with the opportunity to practice the art of creative writing. Emphasis is placed on writing fiction, poetry, and sketches. Upon completion, students should be able to craft and critique their own writing and critique the writing of others. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

ENG 126 Creative Writing II**3 0 3**

Prerequisites: ENG 125

Corequisites: None

Available: As Needed

This course is designed as a workshop approach for advancing imaginative and literary skills. Emphasis is placed on the discussion of style, techniques, and challenges for first publications. Upon completion, students should be able to submit a piece of their writing for publication. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

ENG 131 Introduction to Literature**3 0 3**

Prerequisites: ENG 111

Corequisites: Select one: ENG 112, ENG 113, ENG 114

Available: Fall, Spring

This course introduces the principal genres of literature. Emphasis is placed on literary terminology, devices, structure, and interpretation. Upon completion, students should be able to analyze and respond to literature. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

ENG 133 Introduction to the Novel**3 0 3**

Prerequisites: ENG 111

Corequisites: Select one: ENG 112, ENG 113, ENG 114

Available: As Needed

This course provides intensive study of the novel as a literary form, based on close reading of representative texts. Emphasis is placed on the development and analysis of the novel. Upon completion, students should be able to interpret, analyze, and discuss the distinguishing features of the novel. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

ENG 134 Introduction to Poetry**3 0 3**

Prerequisites: ENG 111

Corequisites: Select one: ENG 112, ENG 113, ENG 114

Available: As Needed

This course provides intensive study of the poem as a literary form, based on close reading of representative texts. Emphasis is placed on the development and analysis of poetry. Upon completion, students should be able to interpret, analyze, and discuss the distinguishing features of poetry. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

ENG 135 Introduction to Short Fiction**3 0 3**

Prerequisites: ENG 111

Corequisites: Select one: ENG 112, ENG 113, ENG 114

Available: As Needed

This course provides intensive study of short fiction as a literary form, based on close reading of representative texts. Emphasis is placed on the development and analysis of short fiction. Upon completion, students should be able to interpret, analyze, and discuss the distinguishing forms of short fiction. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

ENG 231 American Literature I
3 0 3

Prerequisites: Select one: ENG 112, ENG 113, ENG 114

Corequisites: None

Available: Fall

This course covers selected works in American literature from its beginnings to 1865. Emphasis is placed on historical background, cultural context, and literary analysis of selected prose, poetry, and drama. Upon completion, students should be able to interpret, analyze, and respond to literary works in their historical and cultural contexts. This course requires a research paper. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts

ENG 232 American Literature II
3 0 3

Prerequisites: Select one: ENG 112, ENG 113, ENG 114

Corequisites: None

Available: Spring, Summer

This course covers selected works in American literature from 1865 to the present. Emphasis is placed on historical background, cultural context, and literary analysis of selected prose, poetry, and drama. Upon completion, students should be able to interpret, analyze, and respond to literary works in their historical and cultural contexts. This course requires a research paper. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

ENG 233 Major American Writers
3 0 3

Prerequisites: ENG 112, ENG 113, or ENG 114

Corequisites: None

Available: As Needed

This course provides an intensive study of the works of several major American authors. Emphasis is placed on American history, culture, and the literary merits. Upon completion, students should be able to interpret, analyze, and evaluate the works studied. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

ENG 234 Modern American Poets
3 0 3

Prerequisites: ENG 112, ENG 113, or ENG 114

Corequisites: None

Available: As Needed

This course covers the works of selected major modern American poets. Topics include each poet's theory and practice of poetry and the historical and literary traditions which influenced or were influenced by the poets. Upon completion, students should be able to read poetry with more comprehension and explicate selected poems in light of technique, theory, and poetic traditions. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

ENG 235 Survey of Film as Literature
3 0 3

Prerequisites: ENG 113

Corequisites: None

Available: As Needed

This course provides a study of the medium of film with a focus on the historical impact and the various literary genres of movies. Emphasis is placed on an appreciation of film as a form of literature which demonstrates various elements of fiction (character, setting, theme, etc.). Upon completion, students should be able to analyze film critically in various literary contexts. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

ENG 241 British Literature I
3 0 3

Prerequisites: Select one: ENG 112, ENG 113, ENG 114

Corequisites: None

Available: Fall, Spring, Summer

This course covers selected works in British literature from its beginnings to the Romantic Period. Emphasis is placed on historical background, cultural context, and literary analysis of selected prose, poetry, and drama. Upon completion, students should be able to interpret, analyze, and respond to literary works in their historical and cultural contexts. Reading an eighteenth century novel is required. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

ENG 242 British Literature II
3 0 3

Prerequisites: Select one: ENG 112, ENG 113, ENG 114

Corequisites: None

Available: Spring

This course covers selected works in British literature from the Romantic Period to the present. Emphasis is placed on historical background, cultural context, and literary analysis of selected prose, poetry, and drama. Upon completion, students should be able to interpret, analyze, and respond to literary works in their historical and cultural contexts. Reading a nineteenth century novel is required. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts

ENG 243 Major British Writers
3 0 3

Prerequisites: Select one: ENG 112, ENG 113, ENG 114

Corequisites: None

Available: As Needed

This course provides an intensive study of the works of several major British authors. Emphasis is placed on British history, culture, and the literary merits. Upon completion, students should be able to interpret, analyze, and evaluate the works studied. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

ENG 261 World Literature I
3 0 3

Prerequisites: Select one: ENG 112, ENG 113, ENG 114

Corequisites: None

Available: Fall

This course introduces selected works from the Pacific, Asia, Africa, Europe, and the Americas from their literary beginnings through the seventeenth century. Emphasis is placed on historical background, cultural context, and literary analysis of selected prose, poetry, and drama. Upon completion, students should be able to interpret, analyze, and respond to selected works. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

ENG 262 World Literature II
3 0 3

Prerequisites: Select one: ENG 112, ENG 113, ENG 114

Corequisites: None

Available: Spring

This course introduces selected works from the Pacific, Asia, Africa, Europe, and the Americas from the eighteenth century to the present. Emphasis is placed on historical background, cultural context, and literary analysis of selected prose, poetry, and drama. Upon completion, students should be able to interpret, analyze, and respond to selected works. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

ENG 271 Contemporary Literature**3 0 3**

Prerequisites: Select one: ENG 112, ENG 113, ENG 114

Corequisites: None

Available: As Needed

This course includes a study of contemporary literature. Emphasis is placed on literary and cultural trends of selected texts. Upon completion, students should be able to interpret, analyze, and respond to the literature. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

ENG 272 Southern Literature**3 0 3**

Prerequisites: Select one: ENG 112, ENG 113, ENG 114

Corequisites: None

Available: As Needed

This course provides an analytical study of the works of several Southern authors. Emphasis is placed on the historical and cultural contexts, themes, aesthetic features of individual works, and biographical backgrounds of the authors. Upon completion, students should be able to interpret, analyze, and discuss selected works. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

ENG 273 African-American Literature**3 0 3**

Prerequisites: Select one: ENG 112, ENG 113, ENG 114

Corequisites: None

Available: As Needed

This course provides a survey of the development of African-American literature from its beginnings to the present. Emphasis is placed on historical and cultural context, themes, literary traditions, and backgrounds of the authors. Upon completion, students should be able to interpret, analyze, and respond to selected texts. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

ENG 274 Literature by Women**3 0 3**

Prerequisites: Select one: ENG 112, ENG 113, ENG 114

Corequisites: None

Available: As Needed

This course provides an analytical study of the works of several women authors. Emphasis is placed on the historical and cultural contexts, themes and aesthetic features of individual works, and biographical backgrounds of the authors. Upon completion, students should be able to interpret, analyze, and discuss selected works. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

ENG 275 Science Fiction**3 0 3**

Prerequisites: Select one: ENG 112, ENG 113, ENG 114

Corequisites: None

Available: Alternating Spring semesters

This course covers the relationships between science and literature through analysis of short stories and novels. Emphasis is placed on scientific discoveries that shaped Western culture and our changing view of the universe as reflected in science fiction literature. Upon completion, students should be able to trace major themes and ideas and illustrate relationships between science, worldview, and science fiction literature. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

Environmental Science**ENV 110 Environmental Science****3 0 3**

Prerequisites: None

Corequisites: ENV 110A

Available: Fall

This course covers the environmental problems facing society today. Topics include population, natural resources, air and water pollution, and waste disposal problems. Upon completion, students should be able to demonstrate insight into the role the individual plays in shaping the environment.

ENV 110A Environmental Science Lab**0 2 1**

Prerequisites: None

Corequisites: ENV 110

Available: Fall

This course provides a laboratory component to complement ENV 110. Emphasis is placed on laboratory and field experience. Upon completion, students should be able to demonstrate a practical understanding of environmental relationships and of contemporary environmental issues.

Entrepreneurship**ETR 210 Intro to Entrepreneurship****3 0 3**

Prerequisites: None

Corequisites: None

Available: Fall

This course provides a survey of the starting and operating of an entrepreneurial venture. Topics include new venture creation, the business plan, economics of the business, determining resource needs and acquiring resources, marketing, technology, leadership skills, and business ethics. Upon completion, students should be able to demonstrate an understanding of entrepreneurship concepts and how to use the entrepreneurial mindset to succeed in their careers.

ETR 215 Law for Entrepreneurs**3 0 3**

Prerequisites: None

Corequisites: None

Available: Fall

This course introduces students to basic legal concepts specifically relevant to a business start-up venture. Topics include bailments and documents of title, nature and form of sales, risk and property rights, obligations and performance, business organizations, and agency and employment. Upon completion, students should be able to assess the legal responsibilities of a business start-up.

ETR 220 Innovation and Creativity**3 0 3**

Prerequisites: None

Corequisites: None

Available: Spring

This course provides a study of developing and enhancing individual and organizational creativity and innovation. Topics include that innovation needs to be applied to products, services, and processes to increase competitive advantages and add value to businesses. Upon completion, students should be able to apply innovation and creativity principles in the work place.

ETR 230 Entrepreneur Marketing**3 0 3**

Prerequisites: None

Corequisites: None

Available: Fall

This course covers the techniques to correctly research and define the target market to increase sales for start up businesses or to expand current businesses. Topics include how to target market and meet customers' needs with a limited budget in the early stages of the life of a start up business. Upon completion, students should be able to demonstrate an understanding of how to correctly target market for a start up business with limited resources.

ETR 240 Funding for Entrepreneurs**3 0 3**

Prerequisites: ACC 120

Corequisites: None

Available: Fall

This course provides a focus on the financial issues and needs confronting entrepreneurs attempting to grow their businesses by attracting startup and growth capital. Topics include sources of funding, including: angel investors, venture capital, IPOs, private placement, banks, suppliers, buyers, partners, and the government. Upon completion, students should be able to demonstrate an understanding of how to effectively finance a business venture.

ETR 270 Entrepreneurship Issues**3 0 3**

Prerequisites: None

Corequisites: None

Available: Spring

This course introduces current and emerging entrepreneurship issues and opportunities. Topics include franchising, import/export, small business taxes, legal structures, negotiations, contract management, and time management. Upon completion, students should be able to apply a variety of analytical and decision-making requirements to start a new business.

Fire Protection Technology**FIP 120 Introduction to Fire Protection****3 0 3**

Prerequisites: None

Corequisites: None

Available: Fall

This course provides an overview of the history, development, methods, systems, and regulations as they apply to the fire protection field. Topics include history, evolution, statistics, suppression, organizations, careers, curriculum, and other related topics. Upon completion, students should be able to demonstrate a broad understanding of the fire protection field.

FIP 124 Fire Prevention & Public Education**3 0 3**

Prerequisites: None

Corequisites: None

Available: Spring

This course introduces fire prevention concepts as they relate to community and industrial operations. Topics include the development and maintenance of fire prevention programs, educational programs, and inspection programs. Upon completion, students should be able to research, develop, and present a fire safety program to a citizens or industrial group.

FIP 128 Detection and Investigation**3 0 3**

Prerequisites: None

Corequisites: None

Available: Spring

This course covers procedures for determining the origin and cause of accidental and incendiary fires. Topics include collection and preservation of evidence, detection and determination of accelerants, courtroom procedure and testimony, and documentation of the fire scene. Upon completion, students should be able to conduct a competent fire investigation and present those findings to appropriate officials or equivalent.

FIP 132 Building Construction**3 0 3**

Prerequisites: None

Corequisites: None

Available: Fall

This course covers the principles and practices related to various types of building construction, including residential and commercial, as impacted by fire conditions. Topics include types of construction and related elements, fire resistive aspects of construction materials, building codes, collapse, and other related topics. Upon completion, students should be able to understand and recognize various types of construction and their positive or negative aspects as related to fire conditions.

FIP 136 Inspections & Codes**3 0 3**

Prerequisites: None

Corequisites: None

Available: Spring

This course covers the fundamentals of fire and building codes and procedures to conduct an inspection. Topics include review of fire and building codes, writing inspection reports, identifying hazards, plan reviews, site sketches, and other related topics. Upon completion, students should be able to conduct a fire code compliance inspection and produce a written report.

FIP 140 Industrial Fire Protection**3 0 3**

Prerequisites: None

Corequisites: None

Available: Summer

This course covers fire protection systems in industrial facilities. Topics include applicable health and safety standards, insurance carrier regulations, other regulatory agencies, hazards of local industries, fire brigade operation, and loss prevention programs. Upon completion, students should be able to prepare a procedure to plan, organize, and evaluate an industrial facility's fire protection.

FIP 152 Fire Protection Law**3 0 3**

Prerequisites: None

Corequisites: None

Available: Spring

This course covers fire protection law. Topics include torts, legal terms, contracts, liability, review of case histories, and other related topics. Upon completion, students should be able to discuss laws, codes, and ordinances as they relate to fire protection.

FIP 220 Fire Fighting Strategies 3 0 3 Prerequisites: None Corequisites: None Available: Spring This course provides preparation for command of initial incident operations involving emergencies within both the public and private sector. Topics include incident management, fire-ground tactics and strategies, incident safety, and command/control of emergency operations. Upon completion, students should be able to describe the initial incident system as it relates to operations involving various emergencies in fire and non-fire situations.	FIP 240 Fire Service Supervision 3 0 3 Prerequisites: None Corequisites: None Available: Fall This course covers supervisory skills and practices in the fire protection field. Topics include the supervisor's job, supervision skills, the changing work environment, managing change, organizing for results, discipline and grievances, and loss control. Upon completion, students should be able to demonstrate an understanding of the roles and responsibilities of the effective fire service supervisor.
FIP 224 Instructional Methodology 4 0 4 Prerequisites: None Corequisites: None Available: Fall This course covers the knowledge, skills, and abilities needed to train others in fire service operations. Topics include planning, presenting, and evaluating lesson plans, learning styles, use of media, communication, and other related topics. Upon completion, students should be able to meet all requirements of NFPA 1041 Fire Service Instructor Level Two.	FIP 260 Fire Protection Planning 3 0 3 Prerequisites: None Corequisites: None Available: Spring This course covers the need for a comprehensive approach to fire protection planning. Topics include the planning process, using an advisory committee, establishing goals and objectives, and techniques used to approve and implement a plan. Upon completion, students should be able to demonstrate a working knowledge of the concepts and principles of planning as it relates to fire protection.
FIP 228 Local Government Finance 3 0 3 Prerequisites: None Corequisites: None Available: Summer This course introduces local governmental financial principles and practices. Topics include budget preparation and justification, revenue policies, statutory requirements, taxation, audits, and the economic climate. Upon completion, students should be able to comprehend the importance of finance as it applies to the operation of a department.	FIP 276 Managing Fire Services 3 0 3 Prerequisites: None Corequisites: None Available: Spring This course provides an overview of fire department operative services. Topics include finance, staffing, equipment, code enforcement, management information, specialized services, legal issues, planning, and other related topics. Upon completion, students should be able to understand concepts and apply fire department management and operations principles.
FIP 230 Chemistry of Hazardous Materials I 5 0 5 Prerequisites: None Corequisites: None Available: Fall This course covers the evaluation of hazardous materials. Topics include use of the periodic table, hydrocarbon derivatives, placards and labels, parameters of combustion, and spill and leak mitigation. Upon completion, students should be able to demonstrate knowledge of the chemical behavior of hazardous materials.	French FRE 111 Elementary French I 3 0 3 Prerequisites: None Corequisites: FRE 181 Available: Fall, Spring This course introduces the fundamental elements of the French language within a cultural context. Emphasis is placed on the development of basic listening, speaking, reading, and writing skills. Upon completion, students should be able to comprehend and respond with grammatical accuracy to spoken and written French and demonstrate cultural awareness. Lab practice is expected of students. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.
FIP 232 Hydraulics & Water Distribution 2 2 3 Prerequisites: MAT 115, MAT 120, MAT 121, MAT 140, MAT 151, MAT 161, MAT 171, or MAT 175 Corequisites: None Available: Summer This course covers the flow of fluids through fire hoses, nozzles, appliances, pumps, standpipes, water mains, and other devices. Emphasis is placed on supply and delivery systems, fire flow testing, hydraulic calculations, and other related topics. Upon completion, students should be able to perform hydraulic calculations, conduct water availability tests, and demonstrate knowledge of water distribution systems.	FRE 112 Elementary French II 3 0 3 Prerequisites: FRE 111 Corequisites: FRE 182 Available: Fall, Spring This course is a continuation of FRE 111 focusing on the fundamental elements of the French language within a cultural context. Emphasis is placed on the progressive development of listening, speaking, reading, and writing skills. Upon completion, students should be able to comprehend and respond with increasing proficiency to spoken and written French and demonstrate further cultural awareness. Lab practice is expected of students. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.
FIP 236 Emergency Management 3 0 3 Prerequisites: None Corequisites: None Available: Summer This course covers the four phases of emergency management: mitigation, preparedness, response, and recovery. Topics include organizing for emergency management, coordinating for community resources, public sector liability, and the roles of government agencies at all levels. Upon completion, students should be able to demonstrate an understanding of comprehensive emergency management and the integrated emergency management system.	

FRE 181 French Lab 1**0 2 1**

Prerequisites: None

Corequisites: FRE 111

Available: Fall, Spring

This course provides an opportunity to enhance acquisition of the fundamental elements of the French language. Emphasis is placed on the progressive development of basic listening, speaking, reading, and writing skills through the use of supplementary learning media and materials. Upon completion, students should be able to comprehend and respond with grammatical accuracy to spoken and written French and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

FRE 182 French Lab 2**0 2 1**

Prerequisites: FRE 181

Corequisites: FRE 112

Available: As Needed

This course provides an opportunity to enhance acquisition of the fundamental elements of the French language. Emphasis is placed on the progressive development of basic listening, speaking, reading, and writing skills through the use of supplementary learning media and materials. Upon completion, students should be able to comprehend and respond with increasing proficiency to spoken and written French and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

FRE 211 Intermediate French I**3 0 3**

Prerequisites: FRE 112

Corequisites: None

Available: As Needed

This course provides a review and expansion of the essential skills of the French language. Emphasis is placed on the study of authentic and representative literary and cultural texts. Upon completion, students should be able to communicate effectively, accurately, and creatively about the past, present, and future. Lab practice is expected of students. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

FRE 212 Intermediate French II**3 0 3**

Prerequisites: FRE 211

Corequisites: None

Available: As Needed

This course is a continuation of FRE 211. Emphasis is placed on the continuing study of authentic and representative literary and cultural texts. Upon completion, students should be able to communicate spontaneously and accurately with increasing complexity and sophistication. Lab practice is expected of students. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

Film and Video Production**FVP 250 Production Specialties I****1 6 3**

Prerequisites: None

Corequisites: None

Available: Spring

This course provides education and training through contextual learning in the film production areas of art department, camera, sound, grip, electric, locations, script, and continuity. Emphasis is placed on successful professional level interaction with other students and industry professionals through pre-production and initial production of an actual film/video project. Upon completion, students should demonstrate an understanding of the film/video pre-production and initial production process, and the relationship among the departments in these areas. Students will complete projects from the pre-production through post-production phase.

Geology**GEL 111 Introductory Geology****3 2 4**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course introduces basic landforms and geological processes. Topics include rocks, minerals, volcanoes, fluvial processes, geological history, plate tectonics, glaciers, and coastal dynamics. Upon completion, students should be able to describe basic geological processes that shape the earth. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.

GEL 113 Historical Geology**3 2 4**

Prerequisites: GEL 111 or GEL 120

Corequisites: None

Available: Fall

This course covers the geological history of the earth and its life forms. Emphasis is placed on the study of rock strata, fossil groups, and geological time. Upon completion, students should be able to identify major fossil groups and associated rock strata and approximate ages of geological formations. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.

GEL 230 Environmental Geology**3 2 4**

Prerequisites: GEL 111, GEL 120 or PHS 130

Corequisites: None

Available: Spring

This course provides insights into geologic forces that cause environmental changes influencing man's activities. Emphasis is placed on natural hazards and disasters caused by geologic forces. Upon completion, students should be able to relate major hazards and disasters to the geologic forces responsible for their occurrence. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.

Geography

GEO 111 World Regional Geography 3 0 3

Prerequisites: None

Corequisites: None

Available: Fall

This course introduces the regional concept which emphasizes the spatial association of people and their environment. Emphasis is placed on the physical, cultural, and economic systems that interact to produce the distinct regions of the earth. Upon completion, students should be able to describe variations in physical and cultural features of a region and demonstrate an understanding of their functional relationships. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

*GEO 112 Cultural Geography 3 0 3

Prerequisites: None

Corequisites: None

Available: Spring

This course is designed to explore the diversity of human cultures and to describe their shared characteristics. Emphasis is placed on the characteristics, distribution, and complexity of earth's cultural patterns. Upon completion, students should be able to demonstrate an understanding of the differences and similarities in human cultural groups. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

German

GER 111 Elementary German I 3 0 3

Prerequisites: None

Corequisites: GER 181

Available: As Needed

This course introduces the fundamental elements of the German language within a cultural context. Emphasis is placed on the development of basic listening, speaking, reading, and writing skills. Upon completion, students should be able to comprehend and respond with grammatical accuracy to spoken and written German and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

GER 112 Elementary German II 3 0 3

Prerequisites: GER 111

Corequisites: GER 182

Available: As Needed

This course is a continuation of GER 111 focusing on the fundamental elements of the German language within a cultural context. Emphasis is placed on the progressive development of listening, speaking, reading, and writing skills. Upon completion, students should be able to comprehend and respond with increasing proficiency to spoken and written German and demonstrate further cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

GER 141 Culture and Civilization 3 0 3

Prerequisites: GER 111

Corequisites: None

Available: As Needed

This course, taught in English, provides an opportunity to explore issues related to the German-speaking world. Topics include historical and current events, geography, and customs. Upon completion, students should be able to identify and discuss selected topics and cultural differences related to the German-speaking world. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

GER 181 German Lab 1 0 2 1

Prerequisites: None

Corequisites: GER 111

Available: As Needed

This course provides an opportunity to enhance acquisition of the fundamental elements of the German language. Emphasis is placed on the progressive development of basic listening, speaking, reading, and writing skills through the use of supplementary learning media and materials. Upon completion, students should be able to comprehend and respond with grammatical accuracy to spoken and written German and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

GER 182 German Lab 2 0 2 1

Prerequisites: GER 181

Corequisites: GER 112

Available: As Needed

This course provides an opportunity to enhance acquisition of the fundamental elements of the German language. Emphasis is placed on the progressive development of basic listening, speaking, reading, and writing skills through the use of supplementary learning media and materials. Upon completion, students should be able to comprehend and respond with increasing proficiency to spoken and written German and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

GER 211 Intermediate German I 3 0 3

Prerequisites: GER 112

Corequisites: None

Available: As Needed

This course provides a review and expansion of the essential skills of the German language. Emphasis is placed on the study of authentic and representative literary and cultural texts. Upon completion, students should be able to communicate effectively, accurately, and creatively about the past, present, and future. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

GER 212 Intermediate German II 3 0 3

Prerequisites: GER 211

Corequisites: None

Available: As Needed

This course is a continuation of GER 211. Emphasis is placed on the continuing study of authentic and representative literary and cultural texts. Upon completion, students should be able to communicate spontaneously and accurately with increasing complexity and sophistication. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

GER 221 German Conversation**3 0 3**

Prerequisites: GER 212

Corequisites: None

Available: As Needed

This course provides an opportunity for intensive communication in spoken German. Emphasis is placed on vocabulary acquisition and interactive communication through the discussion of media materials and authentic texts. Upon completion, students should be able to discuss selected topics, express ideas and opinions clearly, and engage in formal and informal conversations. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

GIS 215 GIS Data Models**2 2 3**

Prerequisites: GIS 111

Corequisites: None

Available: Fall, Spring

This course covers interpreting and understanding of a variety of 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.

GIS 222 Internet Mapping GIS**2 2 3**

Prerequisites: GIS115, WEB115 and GIS121

Corequisites: None

Available: As Needed

This course is designed as an introduction to multimedia, interactive, animated, and Web cartography. Topics include the principles of effective cartographic communication, and stressing the new and important roles digital cartography is coming to play in cyberspace. Upon completion, students should be able to demonstrate the ability to evaluate digital cartographic information and create effective internet maps.

GIS 232 Spatial Databases**2 2 3**

Prerequisites: DBA110 and GIS215

Corequisites: None

Available: As Needed

This course covers various stages of spatial database design and implementation, including conceptual models and query languages. Topics include spatial networks, spatial data mining, indexing, and query processing. Upon completion, students should be able to demonstrate a comprehensive knowledge of spatial databases management systems.

Geographic Information Systems**GIS 111 Introduction to GIS****2 2 3**

Prerequisites: None

Corequisites: None

Available: Fall, Spring, Summer

This course introduces the hardware and software components of a Geographic Information System and reviews GIS applications. Topics include data structures and basic functions, methods of data capture and sources of data, and the nature and characteristics of spatial data and objects. Upon completion, students should be able to identify GIS hardware components, typical operations, products/applications, and differences between database models and between raster and vector systems. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

GIS 112 Introduction to GPS**2 2 3**

Prerequisites: SRV 110

Corequisites: None

Available: Fall, Spring

This course provides an overview of Global Positioning Systems (GPS). Topics include the theory, implementation, and operations of GPS, as well as alternate data source remote sensing. Upon completion, students should be able to demonstrate an understanding of the fundamentals of GPS.

GIS 121 Georeferencing and Mapping**2 2 3**

Prerequisites: GIS 111

Corequisites: None

Available: Fall, Spring

This course introduces coordinate systems, fundamentals of surveying, and cartography. Topics include the theory, acquisition, and use of locational data using both continuous and discrete georeferencing methods. Upon completion, students should be able to identify appropriate coordinate systems for a situation and translate data into correct map form.

GIS 125 CAD for GIS**2 2 3**

Prerequisites: None

Corequisites: None

Available: As Needed

This course introduces the concepts of Computer Aided Drafting (CAD) as well as software that is used for building geographic data for a GIS. Emphasis is placed on the learning of basic commands used in building spatial data. Upon completion, students will be able to operate within a CAD environment.

Health**HEA 110 Personal Health/Wellness****3 0 3**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course provides an introduction to basic personal health and wellness. Emphasis is placed on current health issues such as nutrition, mental health, and fitness. Upon completion, students should be able to demonstrate an understanding of the factors necessary to the maintenance of health and wellness. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

HEA 112 First Aid and CPR**1 2 2**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course introduces the basics of emergency first aid treatment. Topics include rescue breathing, CPR, first aid for choking and bleeding, and other first aid procedures. Upon completion, students should be able to demonstrate skills in providing emergency care for the sick and injured until medical help can be obtained. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

Heavy Equipment and Transport Technology

*HET 110 Diesel Engines 3 9 6

Prerequisites: None

Corequisites: None

Available: Fall

This course introduces theory, design, terminology, and operating adjustments for diesel engines. Emphasis is placed on safety, theory of operation, inspection, measuring, and rebuilding diesel engines according to factory specifications. Upon completion, students should be able to measure, diagnose problems, and repair diesel engines.

*HET 112 Diesel Electrical Systems 3 6 5

Prerequisites: None

Corequisites: None

Available: Spring

This course introduces electrical theory and applications as they relate to diesel powered equipment. Topics include lighting, accessories, safety, starting, charging, instrumentation, and gauges. Upon completion, students should be able to follow schematics to identify, repair, and test electrical circuits and components.

*HET 114 Power Trains 3 6 5

Prerequisites: None

Corequisites: None

Available: As Needed

Available: Spring

This course introduces power transmission devices. Topics include function and operation of gears, chains, clutches, planetary gears, drive lines, differentials, and transmissions. Upon completion, students should be able to identify, research specifications, repair, and adjust power train components.

*HET 115 Electronic Engines 2 3 3

Prerequisites: None

Corequisites: HET 112

Available: Spring

This course introduces the principles of electronically controlled diesel engines. Emphasis is placed on testing and adjusting diesel engines in accordance with manufacturers' specifications. Upon completion, students should be able to diagnose, test, and calibrate electronically controlled diesel engines.

*HET 116 Air Conditioning/Diesel Equipment 1 2 2

Prerequisites: None

Corequisites: None

Available: Summer

This course provides a study of the design, theory, and operation of heating and air conditioning systems in newer models of medium and heavy duty vehicles. Topics include component function, refrigerant recovery, and environmental regulations. Upon completion, students should be able to use proper techniques and equipment to diagnose and repair heating/air conditioning systems according to industry standards.

*HET 118 Mechanical Orientation 2 0 2

Prerequisites: None

Corequisites: None

Available: Fall

This course introduces the care and safe use of power and hand tools. Topics include micrometers, dial indicators, torque wrenches, drills, taps, dies, screw extractors, thread restorers, and fasteners. Upon completion, students should be able to select and properly use tools for various operations.

*HET 119 Mechanical Transmissions 2 2 3

Prerequisites: None

Corequisites: None

Available: Spring

This course introduces the operating principles of mechanical medium and heavy duty truck transmissions. Topics include multiple counter shafts, power take-offs, sliding idler clutches, and friction clutches. Upon completion, students should be able to diagnose, inspect, and repair mechanical transmissions.

*HET 125 Preventive Maintenance 1 3 2

Prerequisites: None

Corequisites: None

Available: Fall

This course introduces preventive maintenance practices used on medium and heavy duty vehicles and rolling assemblies. Topics include preventive maintenance schedules, services, DOT rules and regulations, and roadability. Upon completion, students should be able to set up and follow a preventive maintenance schedule as directed by manufacturers.

*HET 128 Medium/Heavy Duty Tune-Up 1 2 2

Prerequisites: None

Corequisites: None

Available: Fall

This course introduces tune-up and troubleshooting according to manufacturers' specifications. Topics include troubleshooting engine systems, tune-up procedures, and use and care of special test tools and equipment. Upon completion, students should be able to troubleshoot, diagnose, and repair engines and components using appropriate diagnostic equipment.

*HET 231 Medium/Heavy Duty Brake Systems 1 3 2

Prerequisites: None

Corequisites: None

Available: Summer

This course covers the theory and repair of braking systems used in medium and heavy duty vehicles. Topics include air, hydraulic, and ABS system diagnosis and repair. Upon completion, students should be able to troubleshoot, adjust, and repair braking systems on medium and heavy duty vehicles.

*HET 233 Suspension and Steering 2 4 4

Prerequisites: None

Corequisites: None

Available: Summer

This course introduces the theory and principles of medium and heavy duty steering and suspension systems. Topics include wheel and tire problems, frame members, fifth wheel, bearings, and coupling systems. Upon completion, students should be able to troubleshoot, adjust, and repair suspension and steering components on medium and heavy duty vehicles.

History

HIS 111 World Civilizations I 3 0 3

Prerequisites: None

Corequisites: None

Available: Fall, Spring, Summer

This course introduces world history from the dawn of civilization to the early modern era. Topics include Eurasian, African, American, and Greco-Roman civilizations and Christian, Islamic and Byzantine cultures. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in pre-modern world civilizations. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

HIS 112 World Civilizations II**3 0 3**

Prerequisites: None

Corequisites: None

Available: Fall, Spring, Summer

This course introduces world history from the early modern era to the present. Topics include the cultures of Africa, Europe, India, China, Japan, and the Americas. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in modern world civilizations. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

HIS 115 Introduction to Global History**3 0 3**

Prerequisites: None

Corequisites: None

Available: As Needed

This course introduces the study of global history. Emphasis is placed on topics such as colonialism, industrialism, and nationalism. Upon completion, students should be able to analyze significant global historical issues. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

HIS 131 American History I**3 0 3**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course is a survey of American history from pre-history through the Civil War era. Topics include the migrations to the Americas, the colonial and revolutionary periods, the development of the Republic, and the Civil War. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in early American history. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

HIS 132 American History II**3 0 3**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course is a survey of American history from the Civil War era to the present. Topics include industrialization, immigration, the Great Depression, the major wars, the Cold War, and social conflict. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in American history since the Civil War. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

HIS 162 Women and History**3 0 3**

Prerequisites: None

Corequisites: None

Available: Fall, Spring, Summer

This course surveys the experience of women in historical perspective. Topics include the experiences and contributions of women in culture, politics, economics, science, and religion. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural contributions of women in history. This course covers American women from colonial times to the present. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

HIS 212 Medieval History**3 0 3**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course traces the cultural, political, economic, social, religious, and intellectual history of Europe during the Middle Ages. Topics include the decline of the Roman Empire, the Frankish Kingdoms, the medieval church, feudalism, the rise of national monarchies, urbanization, and the rise of universities. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in medieval Europe. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

HIS 221 African-American History**3 0 3**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course covers African-American history from the Colonial period to the present. Topics include African origins, the slave trade, the Civil War, Reconstruction, the Jim Crow era, the civil rights movement, and contributions of African Americans. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in the history of African Americans. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

HIS 226 The Civil War**3 0 3**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course examines the social, political, economic, and ideological forces that led to the Civil War and Reconstruction. Topics include regional conflicts and sectionalism, dissolution of the Union, military campaigns, and the War's socioeconomic impact, aftermath, and consequences. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in the United States during the era of the Civil War. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

HIS 227 Native American History**3 0 3**

Prerequisites: None

Corequisites: None

Available: As Needed

This course surveys the history and cultures of Native Americans from pre-history to the present. Topics include Native American civilizations, relations with Europeans, and the continuing evolution of Native American cultures. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments among Native Americans. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

HIS 236 North Carolina History**3 0 3**

Prerequisites: None

Corequisites: None

Available: Summer

This course is a study of geographical, political, economic, and social conditions existing in North Carolina from America's discovery to the present. Topics include native and immigrant backgrounds; colonial, antebellum, and Reconstruction periods; party politics; race relations; and the transition from an agrarian to an industrial economy. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in North Carolina. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

Hotel and Restaurant Management

HRM 110 Introduction to Hospitality**2 0 2**

Prerequisites: None

Corequisites: None

Available: Fall

This course covers the growth and progress of the hospitality industry. Topics include financing, hotels, restaurants, and clubs. Upon completion, students should be able to demonstrate an understanding of the background, context, and career opportunities that exist in the hospitality industry.

HRM 120 Front Office Procedures*3 0 3**

Prerequisites: None

Corequisites: HRM 120A

Available: Spring

This course provides a systematic approach to hotel front office procedures. Topics include reservations, registration, guest satisfaction, occupancy and rate management, security, interdepartmental communications, and related guest services. Upon completion, students should be able to demonstrate a basic understanding of current front office operating systems, including efficient and courteous guest service. This course will also examine the housekeeping department of the hotel, its operation and management, and its working relationship with the front office.

HRM 120A Front Office Procedures Lab*0 2 1**

Prerequisites: None

Corequisites: HRM 120

Available: Spring

This course is laboratory to accompany HRM 120. Emphasis is placed on practical computer applications of theory covered in HRM 120. Upon completion, students should be able to demonstrate a basic proficiency in computer-based, front office applications.

HRM 124 Introduction to Service Mgt.**2 2 3**

Prerequisites: None

Corequisites: CUL 142

Available: Fall

This course is designed to provide an introduction to the culture of dining room service management. Emphasis is placed on dignity of service work, psychology of service, dining room organization, service delivery and modeling management roles in a dining room environment. Upon completion, students should be able to demonstrate an understanding of the guest/server dynamic and apply these principles in a dining room setting.

HRM 130 Bed & Breakfast Management*2 0 2**

Prerequisites: None

Corequisites: None

Available: Spring

This course provides an overview of the management of bed and breakfast facilities. Emphasis is placed on lifestyle commitment, property needs, computer operations, business and marketing plans, customer service and facility management. Upon completion, students should be able to describe and apply the principles of management unique to the bed and breakfast industry.

HRM 135 Facilities Management*2 0 2**

Prerequisites: None

Corequisites: None

Available: Fall

This course introduces the basic elements of planning and designing hospitality facilities, including their maintenance and upkeep. Topics include equipment and plant preventive maintenance, engineering, interior design, space utilization, remodeling and expansion, and traffic and workflow patterns. Upon completion, students should be able to demonstrate an understanding of the planning, design, and maintenance of hospitality physical plants and equipment.

HRM 140 Hospitality Tourism Law*3 0 3**

Prerequisites: None

Corequisites: None

Available: Spring

This course covers the rights and responsibilities that the law grants to or imposes upon the hospitality industry. Topics include federal and state regulations, historical and current practices, safety and security, risk management, loss prevention, torts, and contracts. Upon completion, students should be able to demonstrate an understanding of the legal system to prevent or minimize organizational liability.

HRM 210 Meetings and Conventions*3 0 3**

Prerequisites: None

Corequisites: None

Available: Spring

This course introduces organization, arrangement, and operation of conventions, trade shows, professional meetings, and food functions. Emphasis is placed on the methods of marketing, selling, and servicing conventions and trade shows and the division of administrative responsibilities in their operation. Upon completion, students should be able to describe and apply the principles of management to multi-function, multi-day conferences and events.

HRM 215 Restaurant Management*3 0 3**

Prerequisites: CUL 135, CUL 135A and HRM 124

Corequisites: HRM 215A

Available: Fall

This course provides an overview of the various challenges and responsibilities encountered in managing food and beverage operation. Topics include planning, administration, organization, accounting, marketing, and human resources from an integrated managerial viewpoint. Upon completion, students should be able to demonstrate an understanding of the operation of a restaurant.

***HRM215A Restaurant Management Lab**

0 2 1

Prerequisites: CUL 135, CUL 135A and HRM 124

Corequisites: HRM 215

Available: Fall

This course is a laboratory to accompany HRM 215. Emphasis is placed on practical applications of restaurant management principles. Upon completion, students should be able to demonstrate a basic proficiency in restaurant management applications.

***HRM 220 Food and Beverage Control**

3 0 3

Prerequisites: None

Corequisites: None

Available: Spring, Summer

This course introduces controls and accounting procedures used in the hospitality industry. Topics include analysis of financial statements, reports, and costs. Upon completion, students should be able to understand and apply food, beverage, and labor cost control systems.

HRM 225 Beverage Management

2 0 2

Prerequisites: None

Corequisites: None

Available: Spring

This course introduces the management of beverage operations in a hospitality operation. Topics include history, service, procurement, storage, and control of wines, fermented and distilled beverages, sparkling waters, coffees, and teas. Upon completion, students should be able to demonstrate knowledge of the beverages consumed in a hospitality operation.

***HRM 240 Hospitality Marketing**

3 0 3

Prerequisites: None

Corequisites: None

Available: Fall

This course covers planning, organizing, directing, and analyzing the results of marketing programs in the hospitality industry. Emphasis is placed on market segmentation and analysis, product and image development, sales planning, advertising, public relations, and collateral materials. Upon completion, students should be able to prepare a marketing plan applicable to the hospitality industry.

***HRM 245 Hosp Human Resource Mgt**

3 0 3

Prerequisites: None

Corequisites: None

Available: Fall

This course presents a systematic approach to human resource management in the hospitality industry. Topics include labor regulations and laws, hiring, development, discipline, motivation, separation, productivity, and organizational culture. Upon completion, students should be able to apply sound human resource management skills to the hospitality industry.

***HRM 280 Hospitality Management Problems**

3 0 3

Prerequisites: ACC 120, CIS 110, COE 112, CUL 142, HRM 110, HRM 120, HRM 135, HRM 215, HRM 225, HRM 240, HRM 245

Corequisites: HRM 210

Available: Spring

This course addresses timely issues in the hospitality industry and is intended to move students into managerial thinking. Emphasis is placed on problem-solving skills using currently available resources. Upon completion, students should be able to apply hospitality management principles to real challenges facing industry managers.

Human Services***HSE 110 Introduction to Human Services**

2 2 0 3

Prerequisites: None

Corequisites: None

Available: Fall

This course introduces the human services field, including the history, agencies, roles, and careers. Topics include personal/professional characteristics, diverse populations, community resources, disciplines in the field, systems, ethical standards, and major theoretical and treatment approaches. Upon completion, students should be able to identify the knowledge, skills, and roles of the human services worker. This course has been approved by the North Carolina Substance Abuse Professional Practice Board (NCSAPPB) for training/education credit for substance abuse certification/recertification.

***HSE 112 Group Process I**

1 2 0 2

Prerequisites: None

Corequisites: None

Available: Fall

This course introduces interpersonal concepts and group dynamics. Emphasis is placed on self-awareness facilitated by experiential learning in small groups with analysis of personal experiences and the behavior of others. Upon completion, students should be able to show competence in identifying and explaining how people are influenced by their interactions in group settings. This course has been approved by the North Carolina Substance Abuse Professional Practice Board (NCSAPPB) for training/education credit for substance abuse certification/recertification.

***HSE 123 Interviewing Techniques**

2 2 0 3

Prerequisites: None

Corequisites: None

Available: Fall

This course covers the purpose, structure, focus, and techniques employed in effective interviewing. Emphasis is placed on observing, attending, listening, responding, recording, and summarizing of personal histories with instructor supervision. Upon completion, students should be able to perform the basic interviewing skills needed to function in the helping relationship. This course has been approved by the North Carolina Substance Abuse Professional Practice Board (NCSAPPB) for training/education credit for substance abuse certification/recertification.

***HSE 125 Counseling**

2 2 0 3

Prerequisites: None

Corequisites: None

Available: Spring

This course covers the major approaches to psychotherapy and counseling, including theory, characteristics, and techniques. Emphasis is placed on facilitation of self-exploration, problem-solving, decision-making, and personal growth. Upon completion, students should be able to understand various theories of counseling and demonstrate counseling techniques. This course has been approved by the North Carolina Substance Abuse Professional Practice Board (NCSAPPB) for training/education credit for substance abuse certification/recertification.

HSE 210 Human Services Issues*2 0 0 2**

Prerequisites: None

Corequisites: None

Available: Spring

This course covers current issues and trends in the field of human services. Emphasis is placed on contemporary topics with relevance to special issues in a multifaceted field. Upon completion, students should be able to integrate the knowledge, skills, and experiences gained in classroom and clinical experiences with emerging trends in the field. This course has been approved by the North Carolina Substance Abuse Professional Practice Board (NCSAPPB) for training/education credit for substance abuse certification/recertification.

HSE 220 Case Management*2 2 0 3**

Prerequisites: HSE 110

Corequisites: None

Available: Summer

This course covers the variety of tasks associated with professional case management. Topics include treatment planning, needs assessment, referral procedures, and follow-up and integration of services. Upon completion, students should be able to effectively manage the care of the whole person from initial contact through termination of services. This course has been approved by the North Carolina Substance Abuse Professional Practice Board (NCSAPPB) for training/education credit for substance abuse certification/recertification.

HSE 225 Crisis Intervention*3 0 0 3**

Prerequisites: None

Corequisites: None

Available: Fall

This course introduces the basic theories and principles of crisis intervention. Emphasis is placed on identifying and demonstrating appropriate and differential techniques for intervening in various crisis situations. Upon completion, students should be able to assess crisis situations and respond appropriately. This course has been approved by the North Carolina Substance Abuse Professional Practice Board (NCSAPPB) for training/education credit for substance abuse certification/recertification.

HSE 240 Issues in Client Services**3 0 0 3**

Prerequisites: None

Corequisites: None

Available: Fall

This course introduces systems of professional standards, values, and issues in the helping professions. Topics include confidentiality, assessment of personal values, professional responsibilities, competencies, and ethics relative to multicultural counseling and research. Upon completion, students should be able to understand and discuss multiple ethical issues applicable to counseling and apply various decision-making models to current issues.

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.

ART

- ART 111 Art Appreciation
- ART 114 Art History Survey I
- ART 115 Art History Survey II
- ART 117 Non-Western Art History

COMMUNICATIONS

- COM 140 Intro to Intercultural Communications

DRAMA

- DRA 111 Theatre Appreciation
- DRA 112 Literature of the Theatre
- DRA 122 Oral Interpretation
- DRA 124 Readers Theatre
- DRA 211 Theatre History I
- DRA 212 Theatre History II

ENGLISH*

- ENG 131 Introduction to Literature
- ENG 231 American Literature I
- ENG 232 American Literature II
- ENG 241 British Literature I
- ENG 242 British Literature II
- ENG 243 Major British Writers
- ENG 261 World Literature I
- ENG 262 World Literature II

**English literature courses may be taken with advisor's approval. All prerequisites must be met.*

HUMANITIES

- HUM 110 Technology and Society
- HUM 115 Critical Thinking
- HUM 120 Cultural Studies
- HUM 122 Southern Culture
- HUM 123 Appalachian Culture
- HUM 130 Myth and Human Culture
- HUM 150 American Women's Studies
- HUM 160 Introduction to Film
- HUM 211 Humanities I
- HUM 212 Humanities II
- HUM 220 Human Values and Meaning

MUSIC

- MUS 110 Music Appreciation
- MUS 112 Introduction to Jazz
- MUS 113 American Music
- MUS 114 Non-Western Music

PHILOSOPHY

- PHI 210 History of Philosophy
- PHI 215 Philosophical Issues
- PHI 230 Introduction to Logic
- PHI 240 Introduction to Ethics

RELIGION

- REL 110 World Religions
- REL 211 Intro to Old Testament
- REL 212 Intro to New Testament

Humanities

HUM 110 Technology and Society

3 0 3

Prerequisites: None

Corequisites: None

Available: As Needed

This course considers technological change from historical, artistic, and philosophical perspectives and its effect on human needs and concerns. Emphasis is placed on the causes and consequences of technological change. Upon completion, students should be able to critically evaluate the implications of technology. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

HUM 115 Critical Thinking

3 0 3

Prerequisites: ENG 095 or ENG 090 and RED 090

Corequisites: None

Available: Fall, Spring, Summer

This course introduces the use of critical thinking skills in the context of human conflict. Emphasis is placed on evaluating information, problem solving, approaching cross-cultural perspectives, and resolving controversies and dilemmas. Upon completion, students should be able to demonstrate orally and in writing the use of critical thinking skills in the analysis of appropriate texts. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

HUM 120 Cultural Studies

3 0 3

Prerequisites: None

Corequisites: None

Available: As Needed

This course introduces the distinctive features of a particular culture. Topics include art, history, music, literature, politics, philosophy, and religion. Upon completion, students should be able to appreciate the unique character of the study culture. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

HUM 121 The Nature of America

3 0 3

Prerequisites: None

Corequisites: None

Available: As Needed

This course provides an interdisciplinary survey of the American cultural, social, and political experience. Emphasis is placed on the multicultural character of American society, distinctive qualities of various regions, and the American political system. Upon completion, students should be able to analyze significant cultural, social, and political aspects of American life. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

HUM 122 Southern Culture

3 0 3

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course explores the major qualities that make the South a distinct region. Topics include music, politics, literature, art, religion, race relations, and the role of social class in historical and contemporary contexts. Upon completion, students should be able to identify the characteristics that distinguish Southern culture. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

HUM 123 Appalachian Culture

3 0 3

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course provides an interdisciplinary study of the unique features of Appalachian culture. Topics include historical, political, sociological, psychological, and artistic features which distinguish this region. Upon completion, students should be able to demonstrate a broad-based awareness and appreciation of Appalachian culture. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

HUM 130 Myth in Human Culture

3 0 3

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course provides an in-depth study of myths and legends. Topics include the varied sources of myths and their influence on the individual and society within diverse cultural contexts. Upon completion, students should be able to demonstrate a general familiarity with myths and a broad-based understanding of the influence of myths and legends on modern culture. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

HUM 150 American Women's Studies

3 0 3

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course provides an inter-disciplinary study of the history, literature, and social roles of American women from Colonial times to the present. Emphasis is placed on women's roles as reflected in American language usage, education, law, the workplace, and mainstream culture. Upon completion, students should be able to identify and analyze the roles of women as reflected in various cultural forms. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

HUM 160 Introduction to Film

2 2 3

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course introduces the fundamental elements of film artistry and production. Topics include film styles, history, and production techniques, as well as the social values reflected in film art. Attendance at five film showings and an in-depth written analysis of one film are required. Upon completion, students should be able to critically analyze the elements covered in relation to selected films. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

HUM 211 Humanities I

3 0 3

Prerequisites: ENG 111

Corequisites: None

Available: Fall

This course introduces the humanities as a record in literature, music, art, history, religion, and philosophy of humankind's answers to the fundamental questions of existence. Emphasis is placed on the interconnectedness of various aspects of cultures from ancient through early modern times. Upon completion, students should be able to identify significant figures and cultural contributions of the periods studied. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

HUM 212 Humanities II Prerequisites: ENG 111 Corequisites: None Available: Spring This course introduces the humanities as a record in literature, music, art, history, religion, and philosophy of humankind's answers to the fundamental questions of existence. Emphasis is placed on the interconnectedness of various aspects of cultures from early modern times to the present. Upon completion, students should be able to identify significant figures and cultural contributions of the periods studied. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.	3	0	3	*ISC 132 Mfg Quality Control Prerequisites: None Corequisites: None Available: As Needed This course introduces quality concepts and techniques used in industry. Topics include elementary statistics and probability, process control, process capability, and quality improvement tools. Upon completion, students should be able to demonstrate an understanding of the concepts and principles of quality and apply them to the work environment. Proficiency using spreadsheet software required for success in this course.
HUM 220 Human Values and Meaning Prerequisites: ENG 111 Corequisites: None Available: Fall, Spring, Summer This course presents some major dimensions of human experience as reflected in art, music, literature, philosophy, and history. Topics include the search for identity, the quest for knowledge, the need for love, the individual and society, and the meaning of life. Upon completion, students should be able to recognize interdisciplinary connections and distinguish between open and closed questions and between narrative and scientific models of understanding. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.	3	0	3	*ISC 278 cGMP Quality Systems Prerequisites: None Corequisites: None Available: As Needed This course focuses on the development, implementation, and on-going maintenance of a quality system in a cGMP environment. Topics include the cGMP standard, components of cGMP quality systems, quality function roles and training, development of documentation such as SOPs, and system review procedures. Upon completion, the student should be able to identify the components of a quality system and develop a quality system manual utilizing the cGMP standard.
Hydraulics *HYD 110 Hydraulics/Pneumatics I Prerequisites: MAT 070 or Placement Test Corequisites: None Available: Spring, Summer This course introduces the basic components and functions of hydraulic and pneumatic systems. Topics include standard symbols, pumps, control valves, control assemblies, actuators, FRL, maintenance procedures, and switching and control devices. Upon completion, students should be able to understand the operation of a fluid power system, including design, application, and troubleshooting.	2	3	3	*ISC 279 Auditing for cGMP Prerequisites: None Corequisites: None Available: As Needed This course provides basic knowledge in internal audit planning, implementation, and reporting utilizing cGMP as the standard. Topics include auditing basics and types, phases of the audit process, regulatory requirements, auditing tools, auditor qualifications and skills, and behaviors while being audited. Upon completion, students should be able to identify the components of an audit program, develop a plan based on cGMP standards, and demonstrate reporting techniques.
HYD 112 Hydraulics/Medium/Heavy Duty Prerequisites: None Corequisites: None Available: Fall This course introduces hydraulic theory and applications as applied to mobile equipment. Topics include component studies such as pumps, motors, valves, cylinders, filters, reservoirs, lines, and fittings. Upon completion, students should be able to identify, diagnose, test, and repair hydraulic systems using schematics and technical manuals.	1	2	2	*ISC 280 Validation Fundamentals Prerequisites: None Corequisites: None Available: As Needed This course covers the fundamental concepts and components of a validation program in a cGMP environment. Emphasis is placed on FDA requirements concerning validation, types of validation, documentation, procedures, and the QA role. Upon completion, students should be able to discuss the purpose of validation, identify the steps in the validation process and effectively utilize sample documentation.
Industrial Science *ISC 121 Environmental Health and Safety Prerequisites: None Corequisites: None Available: Fall This course covers workplace environmental health and safety concepts. Emphasis is placed on managing the implementation and enforcement of environmental health and safety regulations and on preventing accidents, injuries, and illnesses. Upon completion, students should be able to demonstrate an understanding of basic concepts of environmental health and safety.	3	0	3	Landscape Architecture LAR 210 Prin of Landscape Arch Prerequisites: DFT 151 Corequisites: None Available: Summer This course introduces the overall principles of landscape design. Topics include principles of landscape design; installation, maintenance, and cost estimates; landscape plans, elevations, and sections; plant selection/lists; and other related topics. Upon completion, students should be able to prepare a simple set of landscape working drawings which are within accepted architectural standards.

LAR 230 Prin of Exterior Planting**3 3 4**

Prerequisites: None

Corequisites: None

Available: Fall

This course introduces the identification, selection, and installation of landscape plants. Topics include ornamental plant selection, sun and shade plants, fertilization, pruning, pest and disease control, and other related topics. Upon completion, students should be able to select plants for different landscape situations.

LAR 242 Planning and Environment**2 2 3**

Prerequisites: None

Corequisites: None

Available: Fall

This course covers the historical development of urban and rural environmental problems and issues. Emphasis is placed on governmental response to environmental issues, built and natural environments, historical conflicts, and attempts to produce planning compatibility. Upon completion, students should be able to demonstrate an understanding of the importance of considering natural resources when making political and planning decisions; and when designing buildings and landscapes.

Machining**MAC 111 Machining Technology I****2 12 6**

Prerequisites: None

Corequisites: None

Available: Fall

This course introduces machining operations as they relate to the metalworking industry. Topics include machine shop safety, measuring tools, lathes, drilling machines, saws, milling machines, bench grinders, and layout instruments. Upon completion, students should be able to safely perform the basic operations of measuring, layout, drilling, sawing, turning, and milling.

MAC 112 Machining Technology II**2 12 6**

Prerequisites: MAC 111

Corequisites: None

Available: Spring, Summer

This course provides additional instruction and practice in the use of precision measuring tools, lathes, milling machines, and grinders. Emphasis is placed on setup and operation of machine tools including the selection and use of work holding devices, speeds, feeds, cutting tools, and coolants. Upon completion, students should be able to perform basic procedures on precision grinders and advanced operations of measuring, layout, drilling, sawing, turning, and milling.

MAC 113 Machining Technology III**2 12 6**

Prerequisites: MAC 112

Corequisites: None

Available: Spring, Summer

This course provides an introduction to advanced and special machining operations. Emphasis is placed on working to specified tolerances with special and advanced setups. Upon completion, students should be able to produce a part to specifications.

MAC 114 Intro to Metrology**2 0 2**

Prerequisites: None

Corequisites: None

Available: As Needed

This course introduces the care and use of precision measuring instruments. Emphasis is placed on the inspection of machine parts and use of a wide variety of measuring instruments. Upon completion, students should be able to demonstrate the correct use of measuring instruments.

MAC 118 Machine Shop Basic**1 3 2**

Prerequisites: None

Corequisites: None

Available: Summer

This course will introduce the fundamentals of measuring tools, tolerances, and the basic set up and operations of drill presses, lathes, and milling machines. Emphasis is placed on manufacturing standards and procedures used in welding, automotive, and engineering environments. Upon completion, students should be able to use measuring tools, perform basic machining operations, and apply manufacturing standards.

MAC 121 Introduction to CNC**2 0 2**

Prerequisites: None

Corequisites: None

Available: Fall, Summer

This course introduces the concepts and capabilities of computer numerical control machine tools. Topics include setup, operation, and basic applications. Students will learn computer skills necessary for machinists. Upon completion, students should be able to explain operator safety, machine protection, data input, program preparation, and program storage.

MAC 122 CNC Turning**1 3 2**

Prerequisites: BPR 111

Corequisites: None

Available: Spring

This course introduces the programming, setup, and operation of CNC turning centers. Topics include programming formats, control functions, program editing, part production, and inspection. Upon completion, students should be able to manufacture simple parts using CNC turning centers.

MAC 124 CNC Milling**1 3 2**

Prerequisites: BPR 111

Corequisites: None

Available: Fall, Spring

This course introduces the manual programming, setup, and operation of CNC machining centers. Topics include programming formats, control functions, program editing, part production, and inspection. Upon completion, students should be able to manufacture simple parts using CNC machining centers.

MAC 151 Machining Calculations**1 2 2**

Prerequisites: None

Corequisites: None

Available: Fall

This course introduces basic calculations as they relate to machining occupations. Emphasis is placed on basic calculations and their applications in the machine shop. Upon completion, students should be able to perform basic shop calculations.

MAC 152 Advanced Machining Calculations 1 2 2 Prerequisites: None Corequisites: None Available: Fall, Summer This course combines mathematical functions with practical machine shop applications and problems. Emphasis is placed on gear ratios, lead screws, indexing problems, and their applications in the machine shop. Upon completion, students should be able to calculate solutions to machining problems.	MAC 231 CNC Graphics Prog: Turning 1 4 3 Prerequisites: MAC 121 or MAC 122 Corequisites: None Available: As Needed This course introduces Computer Numerical Control graphics programming and concepts for turning center applications. Emphasis is placed on the interaction of menus to develop a shape file in a graphics CAM system and to develop tool path geometry and part geometry. Upon completion, students should be able to develop a job plan using CAM software, include machine selection, tool selection, operational sequence, speed, feed, and cutting depth.
MAC 222 Advanced CNC Turning 1 3 2 Prerequisites: MAC 122 Corequisites: None Available: Spring, Summer This course covers advanced methods in setup and operation of CNC turning centers. Emphasis is placed on programming and production of complex parts. Upon completion, students should be able to demonstrate skills in programming, operations, and setup of CNC turning centers.	MAC 234 Adv Four/Five-Axis Machin 3 9 6 Prerequisites: None Corequisites: None Available: As Needed This course specializes in four- and five-axis machining using machining centers with full four- and five-axis capabilities. Emphasis is placed on generation of machining center output with a CAM system and setup and operation of pallet changer and rotary system for five-axis machining. Upon completion, students should be able to convert CAD to output for four- and five-axis machining centers, including tooling, setup, and debugging processes.
MAC 224 Advanced CNC Milling 1 3 2 Prerequisites: MAC 124 Corequisites: None Available: Spring, Summer This course covers advanced methods in setup and operation of CNC machining centers. Emphasis is placed on programming and production of complex parts. Upon completion, students should be able to demonstrate skills in programming, operations, and setup of CNC machining centers.	MAC 241 Jigs and Fixtures I 2 6 4 Prerequisites: MAC 112 Corequisites: None Available: Summer This course introduces the application and use of jigs and fixtures. Emphasis is placed on design and manufacture of simple jigs and fixtures. Upon completion, students should be able to design and build simple jigs and fixtures.
MAC 226 CNC EDM Machining 1 3 2 Prerequisites: None Corequisites: None Available: Fall, Spring This course introduces the programming, setup, and operation of CNC electrical discharge machines. Topics include programming formats, control functions, program editing, production of parts, and inspection. Upon completion, students should be able to manufacture simple parts using CNC electrical discharge machines.	MAC 245 Mold Construction I 2 6 4 Prerequisites: MAC 112 Corequisites: None Available: Fall, Spring This course introduces the principles of mold making. Topics include types, construction, and application of molds. Upon completion, students should be able to design and build simple molds.
MAC 228 Advanced CNC Processes 2 3 3 Prerequisites: None Corequisites: None Available: As Needed This course covers advanced programming, setup, and operation of CNC turning centers and CNC milling centers. Topics include advanced programming formats, control functions, program editing, and part production and inspection. Upon completion, students should be able to manufacture complex parts using CNC turning and milling centers.	MAC 247 Production Tooling 2 0 2 Prerequisites: MAC 111 Corequisites: None Available: Fall, Summer This course provides advanced study in tooling currently utilized in the production of metal parts. Emphasis is placed on the proper use of tooling used on CNC and other production machine tools. Upon completion, students should be able to choose proper tool grades based on manufacturing requirements and troubleshoot carbide tooling problems.
MAC 229 CNC Programming 2 0 2 Prerequisites: Select one: MAC 121, MAC 122, MAC 124, MAC 226 Corequisites: None Available: As Needed This course provides concentrated study in advanced programming techniques for working with modern CNC machine tools. Topics include custom macros and subroutines, canned cycles, and automatic machining cycles currently employed by the machine tool industry. Upon completion, students should be able to program advanced CNC functions while conserving machine memory.	

Mathematics

MAT 060 Essential Mathematics 3 2 4

Prerequisites: MAT 050 or placement

Corequisites: RED 080 or placement

Available: Fall, Spring, Summer

This course is a comprehensive study of mathematical skills which should provide a strong mathematical foundation to pursue further study. Topics include principles and applications of decimals, fractions, percents, ratio and proportion, order of operations, geometry, measurement, and elements of algebra and statistics. Upon completion, students should be able to perform basic computations and solve relevant, multi-step mathematical problems using technology where appropriate. The operation of a scientific calculator is an essential part of the instructional methodology, and all students are expected to have one.

MAT 070 Introductory Algebra 3 2 4

Prerequisites: MAT 060 or placement

Corequisites: RED 080 or ENG 085 or placement

Available: Fall, Spring, Summer

This course establishes a foundation in algebraic concepts and problem solving. Topics include signed numbers, exponents, order of operations, simplifying expressions, solving linear equations and inequalities, graphing, formulas, polynomials, factoring, and elements of geometry. Upon completion, students should be able to apply the above concepts in problem solving using appropriate technology. The operation of a graphing calculator is an essential part of the instructional methodology, and all students are expected to have one.

MAT 080 Intermediate Algebra 3 2 4

Prerequisites: MAT 070 or placement

Corequisites: RED 080 or ENG 085 or placement

Available: Fall, Spring, Summer

This course continues the study of algebraic concepts with emphasis on applications. Topics include factoring; rational expressions; rational exponents; rational, radical, and quadratic equations; systems of equations; inequalities; graphing; functions; variations; complex numbers; and elements of geometry. Upon completion, students should be able to apply the above concepts in problem solving using appropriate technology. The operation of a graphing calculator is an essential part of the instructional methodology, and all students are expected to have one.

MAT 090 Accelerated Algebra 3 2 4

Prerequisites: MAT 060

Corequisites: RED 080 or ENG 085

Available: Fall, Spring, Summer

This course covers algebraic concepts with emphasis on applications. Topics include those covered in MAT 070 and MAT 080. Upon completion, students should be able to apply algebraic concepts in problem solving using appropriate technology.

MAT 110 Mathematical Measurement 2 2 3

Prerequisites: MAT 070, MAT 080, MAT 090, MAT 095, MAT 120,

MAT 121, MAT 161, MAT 171, or MAT 175

Corequisites: None

Available: Spring

This course provides an activity-based approach to utilizing, interpreting, and communicating data in a variety of measurement systems. Topics include accuracy, precision, conversion, and estimation within metric, apothecary, and avoirdupois systems; ratio and proportion; measures of central tendency and dispersion; and charting of data. Upon completion, students should be able to apply proper techniques to gathering, recording, manipulating, analyzing, and communicating data.

MAT 115 Mathematical Models 2 2 3

Prerequisites: Select one: MAT 070, MAT 080, MAT 090, MAT 095, MAT 120, MAT 121, MAT 161, MAT 171, MAT 175

Corequisites: None

Available: Fall, Spring, Summer

This course develops the ability to utilize mathematical skills and technology to solve problems at a level found in non-mathematics-intensive programs. Topics include applications to percent, ratio and proportion, formulas, statistics, functional notation, linear functions, probability, sampling techniques, scatter plots, and modeling. Upon completion, students should be able to solve practical problems, reason and communicate with mathematics, and work confidently, collaboratively, and independently.

MAT 121 Algebra/Trigonometry I 2 2 3

Prerequisites: Select one: MAT 070, MAT 080, MAT 090, MAT 095

Corequisites: None

Available: Fall, Spring as needed

This course provides an integrated approach to technology and the skills required to manipulate, display, and interpret mathematical functions and formulas used in problem solving. Topics include simplification, evaluation, and solving of algebraic and radical functions; complex numbers; right triangle trigonometry; systems of equation; and the use of technology. Upon completion, students should be able to demonstrate an understanding of the use of mathematics and technology to solve problems and analyze and communicate results.

MAT 122 Algebra/Trigonometry II 2 2 3

Prerequisites: Select one: MAT 121, MAT 161, MAT 171, MAT 175

Corequisites: None

Available: Fall as needed, Spring

This course extends the concepts covered in MAT 121 to include additional topics in algebra, function analysis, and trigonometry. Topics include exponential and logarithmic functions, translation and scaling of functions, Sine Law, Cosine Law, vectors, and statistics. Upon completion, students should be able to demonstrate an understanding of the use of technology to solve problems and to analyze and communicate results.

MAT 140 Survey of Mathematics 3 0 3

Prerequisites: Select one: MAT 070, MAT 080, MAT 090, MAT 095, MAT 120, MAT 121, MAT 161, MAT 171, MAT 175

Corequisites: None

Available: Summer

This course provides an introduction in a non-technical setting to selected topics in mathematics. Topics may include, but are not limited to, sets, logic, probability, statistics, matrices, mathematical systems, geometry, topology, mathematics of finance, and modeling. Upon completion, students should be able to understand a variety of mathematical applications, think logically, and be able to work collaboratively and independently. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

MAT 151 Statistics I 3 0 3 Prerequisites: Select one: MAT 080, MAT 090, MAT 095, MAT 120, MAT 121, MAT 161, MAT 171, MAT 175 Corequisites: MAT 151A Available: Fall, Spring, Summer This course provides a project-based approach to the study of basic probability, descriptive and inferential statistics, and decision making. Emphasis is placed on measures of central tendency and dispersion, correlation, regression, discrete and continuous probability distributions, quality control, population parameter estimation, and hypothesis testing. Upon completion, students should be able to describe important characteristics of a set of data and draw inferences about a population from sample data. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics (Quantitative option).	MAT 171 Precalculus Algebra 3 0 3 Prerequisites: Select one: MAT 080, MAT 090, MAT 095, MAT 161 Corequisites: MAT 171A Available: Fall, Spring This is the first of two courses designed to emphasize topics which are fundamental to the study of calculus. Emphasis is placed on equations and inequalities, functions (linear, polynomial, rational), systems of equations and inequalities, and parametric equations. Upon completion, students should be able to solve practical problems and use appropriate models for analysis and predictions. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.
MAT 151A Statistics I Lab 0 2 1 Prerequisites: Select one: MAT 080, MAT 090, MAT 095, MAT 120, MAT 121, MAT 161, MAT 171, MAT 175 Corequisites: MAT 151 Available: Fall, Spring, Summer This course is a laboratory for MAT 151. Emphasis is placed on experiences that enhance the materials presented in the class. Upon completion, students should be able to solve problems, apply critical thinking, work in teams, and communicate effectively. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.	MAT 171APrecalculus Algebra Lab 0 2 1 Prerequisites: Select one: MAT 080, MAT 090, MAT 095, MAT 161 Corequisites: MAT 171 Available: Fall, Spring This course is a laboratory for MAT 171. Emphasis is placed on experiences that enhance the materials presented in the class. Upon completion, students should be able to solve problems, apply critical thinking, work in teams, and communicate effectively. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.
MAT 161 College Algebra 3 0 3 Prerequisites: Select one: MAT 080, MAT 090, MAT 095 Corequisites: MAT 161A Available: Fall, Spring, Summer 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 172 Precalculus Trigonometry 3 0 3 Prerequisites: MAT 171 Corequisites: MAT 172A Available: Fall, Spring, Summer This is the second of two courses designed to emphasize topics which are fundamental to the study of calculus. Emphasis is placed on properties and applications of transcendental functions and their graphs, right and oblique triangle trigonometry, conic sections, vectors, and polar coordinates. Upon completion, students should be able to solve practical problems and use appropriate models for analysis and prediction. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.
MAT 161ACollege Algebra Lab 0 2 1 Prerequisites: Select one: MAT 080, MAT 090, MAT 095 Corequisites: MAT 161 Available: Fall, Spring, Summer This course is a laboratory for MAT 161. Emphasis is placed on experiences that enhance the materials presented in the class. Upon completion, students should be able to solve problems, apply critical thinking, work in teams, and communicate effectively. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.	MAT 172APrecalculus Trigonometry Lab 0 2 1 Prerequisites: MAT 171 Corequisites: MAT 172 Available: Fall, Spring, Summer This course is a laboratory for MAT 172. Emphasis is placed on experiences that enhance the materials presented in the class. Upon completion, students should be able to solve problems, apply critical thinking, work in teams, and communicate effectively. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.
MAT 167 Discrete Mathematics 3 0 3 Prerequisites: Select one: MAT 121, MAT 161, MAT 171, MAT 280 Corequisites: None Available: As Needed This course is a study of discrete mathematics with emphasis on applications. Topics include number systems, combinations/permutations, mathematical logic/proofs, sets/counting, Boolean algebra, mathematical induction, trees/graphs, and algorithms. Upon completion, students should be able to demonstrate competence in the topics covered. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.	MAT 175 Precalculus 4 0 4 Prerequisites: Select one: MAT 080, MAT 090, MAT 095, MAT 121, MAT 161, MAT 171 Corequisites: None Available: Fall, Madison Campus Huskins Class Only This course provides an intense study of the topics which are fundamental to the study of calculus. Emphasis is placed on functions and their graphs with special attention to polynomial, rational, exponential, logarithmic and trigonometric functions, and analytic trigonometry. Upon completion, students should be able to solve practical problems and use appropriate models for analysis and prediction. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

MAT 223 Applied Calculus**2 2 3**

Prerequisites: MAT 122

Corequisites: None

Available: As Needed

This course provides an introduction to the calculus concepts of differentiation and integration by way of application and is designed for engineering technology students. Topics include limits, slope, derivatives, related rates, areas, integrals, and applications. Upon completion, students should be able to demonstrate an understanding of the use of calculus and technology to solve problems and to analyze and communicate results.

MAT 271 Calculus I**3 2 4**

Prerequisites: MAT 172 or MAT 175

Corequisites: None

Available: Fall, Spring, Summer

This course covers in depth the differential calculus portion of a three-course calculus sequence. Topics include limits, continuity, derivatives, and integrals of algebraic and transcendental functions of one variable, with applications. Upon completion, students should be able to apply differentiation and integration techniques to algebraic and transcendental functions. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

MAT 272 Calculus II**3 2 4**

Prerequisites: MAT 271

Corequisites: None

Available: Fall, Spring

This course provides a rigorous treatment of integration and is the second calculus course in a three-course sequence. Topics include applications of definite integrals, techniques of integration, indeterminate forms, improper integrals, infinite series, conic sections, parametric equations, polar coordinates, and differential equations. Upon completion, students should be able to use integration and approximation techniques to solve application problems. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

MAT 273 Calculus III**3 2 4**

Prerequisites: MAT 272

Corequisites: None

Available: Fall, Spring

This course covers the calculus of several variables and is third calculus course in a three-course sequence. Topics include functions of several variables, partial derivatives, multiple integrals, solid analytical geometry, vector-valued functions, and line and surface integrals. Upon completion, students should be able to solve problems involving vectors and functions of several variables. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

MAT 280 Linear Algebra**3 0 3**

Prerequisites: MAT 271

Corequisites: None

Available: Fall, Spring

This course provides a study of linear algebra topics with emphasis on the development of both abstract concepts and applications. Topics include vectors, systems of equations, matrices, determinants, vector spaces, linear transformations in two or three dimensions, eigenvectors, eigenvalues, diagonalization and orthogonality. Upon completion, students should be able to demonstrate both an understanding of the theoretical concepts and appropriate use of linear algebra models to solve application problems. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

MAT 285 Differential Equations**3 0 3**

Prerequisites: MAT 272

Corequisites: None

Available: Summer

This course provides an introduction to ordinary differential equations with an emphasis on applications. Topics include first order, linear higher-order, and systems of differential equations; numerical methods; series solutions; eigenvalues and eigenvectors; Laplace transforms; and Fourier series. Upon completion, students should be able to use differential equations to model physical phenomena, solve the equations, and use the solutions to analyze the phenomena. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

Mechanical**MEC 110 Introduction to CAD/CAM****1 2 2**

Prerequisites: None

Corequisites: None

Available: Summer

This course introduces CAD/CAM. Emphasis is placed on transferring part geometry from CAD to CAM for the development of a CNC-ready program. Upon completion, students should be able to use CAD/CAM software to produce a CNC program.

MEC 111 Machine Processes I*1 4 3**

Prerequisites: None

Corequisites: None

Available: Spring, Summer

This course introduces shop safety, hand tools, machine processes, measuring instruments, and the operation of machine shop equipment. Topics include use and care of tools, safety, measuring tools, and the basic setup and operation of common machine tools. Upon completion, students should be able to safely machine simple parts to specified tolerances.

MEC 155 Env Benign Manufacturing*2 2 3**

Prerequisites: None

Corequisites: None

Available: Spring

This course introduces environmental issues involving the generation and management of hazardous materials and wastes in manufacturing operations. Topics include the analysis of manufacturing trends, pollution minimization strategies, and the advantages of incorporating a sustainable approach to manufacturing. Upon completion, students should be able to discuss analysis and modification of industrial processes in manufacturing facilities toward a sustainable end.

MEC 161 Manufacturing Processes I*3 0 3**

Prerequisites: None

Corequisites: None

Available: Summer

This course provides the fundamental principles of value-added processing of materials into usable forms for the customer. Topics include material properties and traditional and non-traditional manufacturing processes. Upon completion, students should be able to specify appropriate manufacturing processing for common engineering materials.

*MEC 180 Engineering Materials 2 3 3 Prerequisites: None Corequisites: None Available: Fall This course covers the physical and mechanical properties of materials. Topics include testing, heat treating, ferrous and non-ferrous metals, plastics, composites, and material selection. Upon completion, students should be able to specify basic tests and properties and select appropriate materials on the basis of specific properties.	MED 118 Medical Law and Ethics 2 0 0 2 Prerequisites: None Corequisites: None Available: Spring This course covers legal relationships of physicians and patients, contractual agreements, professional liability, malpractice, medical practice acts, informed, consent, and bioethical issues. Emphasis is placed on legal terms, professional attitudes, and the principles and basic concepts of ethics and laws involved in providing medical services. Upon completion, students should be able to meet the legal and ethical responsibilities of a multi-skilled health professional.
*MEC 181 Introduction to CIM 2 0 2 Prerequisites: EGR 125 Corequisites: None Availability: Summer This course introduces the elements of computer-integrated manufacturing (CIM). Topics include statistical process control, computer-aided design and manufacturing, numeric control, and flexible systems. Upon completion, students should be able to explain the major components of computer-integrated manufacturing.	MED 120 Survey of Medical Terminology 2 0 0 2 Prerequisites: None Corequisites: None Available: Fall This course introduces the vocabulary, abbreviations, and symbols used in the language of medicine. Emphasis is placed on building medical terms using prefixes, suffixes, and word roots. Upon completion, students should be able to pronounce, spell, and define accepted medical terms.
*MEC 231 Computer-Aided Manufacturing I 1 4 3 Prerequisites: None Corequisites: None Available: Fall This course introduces computer-aided manufacturing (CAM) applications and concepts. Emphasis is placed on developing/defining part geometry and the processing information needed to manufacture parts. Upon completion, students should be able to demonstrate skills in defining part geometry, program development, and code generation using CAM software.	MED 121 Medical Terminology I 3 0 0 3 Prerequisites: None Corequisites: None Available: Fall 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.
*MEC 232 Computer-Aided Manufacturing II 1 4 3 Prerequisites: MEC 231 Corequisites: None Available: Spring This course provides an in-depth study of CAM applications and concepts. Emphasis is placed on the manufacturing of complex parts using computer-aided manufacturing software. Upon completion, students should be able to manufacture complex parts using CAM software.	MED 122 Medical Terminology II 3 0 0 3 Prerequisites: MED 121 Corequisites: None Available: Spring 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.
*MEC 260 Fundamentals of Machine Design 2 3 3 Prerequisites: CIV 110 Corequisites: None Available: Spring This course introduces the fundamental principles of machine design. Topics include simple analysis of forces, moments, stresses, strains, friction, kinematics, and other considerations for designing machine elements. Upon completion, students should be able to analyze machine components and make component selections from manufacturers' catalogs.	MED 130 Admin Office Proc I 1 2 0 2 Prerequisites: Enrollment in Medical Assisting program. Corequisites: None Available: Fall This course introduces medical office administrative procedures. Topics include appointment processing, written and oral communications, medical records, patient orientation, and safety. Upon completion, students should be able to perform basic administrative skills within the medical environment.
Medical Assisting	
MED 110 Orientation to Med Assist 1 0 0 1 Prerequisites: None Corequisites: None Available: Fall This course covers the history of medicine and the role of the medical assistant in the health care setting. Emphasis is placed on professionalism, communication, attitude, behaviors, and duties in the medical environment. Upon completion, students should be able to project a positive attitude and promote the profession of medical assisting.	MED 131 Admin Office Proc II 1 2 0 2 Prerequisites: MED 130 Corequisites: None Available: Spring This course provides medical office procedures in both economic and management skills. Topics include physical plant maintenance, equipment and supplies, liability coverage, medical economics, and introductory insurance procedures. Upon completion, students should be able to manage the economics of the medical office and supervise personnel.

MED 138 Infection/Hazard Control**2 0 0 2**

Prerequisites: None

Corequisites: None

Available: Fall

This course introduces the student to infection and hazard control procedures necessary for the healthcare worker. Topics include introduction to microbiology, practical infection control, sterilization and monitoring, chemical disinfectants, aseptic technique, infectious diseases, OSH standards, and applicable North Carolina laws. Upon completion, students should be able to: understand infectious diseases, disease transmission, infection control procedures, biohazard management, OSH standards, and applicable North Carolina laws.

MED 140 Exam Room Procedures I**3 4 0 5**

Prerequisites: Enrollment in the Medical Assisting program, MED 110, MED 138

Corequisites: None

Available: Spring

This course provides instruction in clinical examining room procedures. Topics include asepsis, infection control, assisting with exams and treatment, patient education, preparation and administration of medications, EKG, vital signs, and medical emergencies. Upon completion, students should be able to demonstrate competence in exam room procedures.

MED 150 Laboratory Procedures I**3 4 0 5**

Prerequisites: Enrollment in the Medical Assisting program, MED 122, MED 138

Corequisites: None

Available: Fall

This course provides instruction in basic lab techniques used by the medical assistant. Topics include lab safety, quality control, collecting and processing specimens, performing selective tests, phlebotomy, screening and follow-up of test results, and OSHA/CLIA regulations. Upon completion, students should be able to perform basic lab tests/skills based on course topics.

MED 180 CPR Certification**0 2 0 1**

Prerequisites: None

Corequisites: None

Available: As Needed

This course provides the basic knowledge and skills necessary to perform infant, child, and adult CPR and to manage foreign body airway obstruction. Emphasis is placed on triage, assessment, and proper management of emergency care. Upon completion, students should be able to perform the infant, child, and adult CPR.

MED 182 CPR First Aid & Emergency**1 2 0 2**

Prerequisites: None

Corequisites: None

Available: As Needed

This course provides the basic knowledge and skills necessary to perform basic CPR, first aid, and medical emergency care related to the clinical, home, office, and recreational setting. Emphasis is placed on triage, assessment, and proper management of emergency care. Upon completion, students should be able to demonstrate basic CPR, first aid, and medical emergency care.

MED 240 Exam Room Procedures II**3 4 0 5**

Prerequisites: MED 140

Corequisites: None

Available: Fall

This course is designed to expand and build upon skills presented in MED 140. Emphasis is placed on advanced exam room procedures. Upon completion, students should be able to demonstrate enhanced competence in selected exam room procedures.

MED 260 MED Clinical Externship**0 1 5 5**

Prerequisites: MED 150 and MED 240

Corequisites: None

Available: Spring

This course provides the opportunity to apply clinical, laboratory, and administrative skills in a medical facility. Emphasis is placed on enhancing competence in clinical and administrative skills necessary for comprehensive patient care and strengthening professional communications and interactions. Upon completion, students should be able to function as an entry-level health care professional.

MED 262 Clinical Perspectives**1 0 0 1**

Prerequisites: None

Corequisites: MED 260

Available: Spring

This course is designed to explore personal and occupational responsibilities of the practicing medical assistant. Emphasis is placed on problems encountered during externships and development of problem-solving skills. Upon completion, students should be able to demonstrate courteous and diplomatic behavior when solving problems in the medical facility.

MED 264 Med Assisting Overview**2 0 0 2**

Prerequisites: None

Corequisites: None

Available: As Needed

This course provides an overview of the complete medical assisting curriculum. Emphasis is placed on all facets of medical assisting pertinent to administrative, laboratory, and clinical procedures performed in the medical environment. Upon completion, students should be able to demonstrate competence in the areas covered on the national certification examination for medical assistants.

MED 270 Symptomatology**2 2 0 3**

Prerequisites: MED 131 and MED 140

Corequisites: None

Available: Summer

This course covers the study of disease symptoms and the appropriate actions taken by medical assistants in a medical facility in relation to these symptoms. Emphasis is placed on interviewing skills and appropriate triage, preparing patients for procedures, and screening test results. Upon completion, students should be able to recognize how certain symptoms relate to specific diseases, recognize emergency situations, and take appropriate actions.

MED 272 Drug Therapy**3 0 0 3**

Prerequisites: MED 131 and MED 140

Corequisites: None

Available: Summer

This course focuses on major drug groups, including their side effects, interactions, methods of administration, and proper documentation. Emphasis is placed on the theory of drug administration. Upon completion, students should be able to identify, spell, recognize side effects of, and document the most commonly used medications in a physician's office.

MED 274 Diet Therapy/Nutrition 3 0 0 3
 Prerequisites: Enrollment in the Medical Assisting program
 Corequisites: None
 Available: Spring
 This course introduces the basic principles of nutrition as they relate to health and disease. Topics include basic nutrients, physiology, dietary deficiencies, weight management, and therapeutic nutrition in wellness and disease. Upon completion, students should be able to interpret clinical and dietary data and provide patient counseling and education.

MED 276 Patient Education 1 2 0 2
 Prerequisites: MED 150 and MED 240
 Corequisites: None
 Available: Spring
 This course is designed to provide communication skills, basic education principles, and knowledge of available community resources and to apply this knowledge to the clinical setting. Emphasis is placed on identifying appropriate community resources, developing patient education materials, and perfecting written and oral communication skills. Upon completion, students should be able to instruct, communicate effectively, and act as a liaison between the patient and community agencies.

Mental Health

MHA 238 Psychopathology 3 0 0 3
 Prerequisites: PSY 281
 Corequisites: None
 Available: Spring
 This course examines the development and use of the DSM/ICD in the mental health setting to establish a common language. Emphasis is placed on history, terminology, and assessment practices associated with the DSMIV/ICD in the treatment of psychological disorders. Upon completion, students should be able to explain the core vocabulary of treatment approaches and their applications. This course has been approved by the North Carolina Substance Abuse Professional Practice Board (NCSAPPB) for training/education credit for substance abuse certification/recertification.

Marketing and Retailing

MKT 120 Principles of Marketing 3 0 3
 Prerequisites: None
 Corequisites: None
 Available: Spring
 This course introduces principles and problems of marketing goods and services. Topics include promotion, placement, and pricing strategies for products. Upon completion, students should be able to apply marketing principles in organizational decision making.

MKT 121 Retailing 3 0 3
 Prerequisites: None
 Corequisites: None
 Available: Fall
 This course examines the role of retailing in the economy. Topics include the development of present retail structure, functions performed, effective operations, and managerial problems resulting from current economic and social trends. Upon completion, students should be able to demonstrate an understanding of the basic principles of retailing.

MKT 122 Visual Merchandising 3 0 3
 Prerequisites: None
 Corequisites: None
 Available: Summer
 This course introduces basic layout design and commercial display in retail and service organizations. Topics include an analysis of display as a visual merchandising medium and an examination of the principles and applications of display and design. Upon completion, students should be able to plan, build, and evaluate designs and displays. This course is a unique concentration requirement of the Marketing and Retailing concentration in the Business Administration program.

MKT 123 Fundamentals of Selling 3 0 3
 Prerequisites: None
 Corequisites: None
 Available: Fall
 This course is designed to emphasize the necessity of selling skills in a modern business environment. Emphasis is placed on sales techniques involved in various types of selling situations. Upon completion, students should be able to demonstrate an understanding of the techniques covered.

MKT 220 Advertising and Sales Promotion 3 0 3
 Prerequisites: None
 Corequisites: None
 Available: Spring
 This course covers the elements of advertising and sales promotion in the business environment. Topics include advertising and sales promotion appeals, selection of media, use of advertising and sales promotion as a marketing tool, and means of testing effectiveness. Upon completion, students should be able to demonstrate an understanding of the concepts covered through application.

MKT 221 Consumer Behavior 3 0 3
 Prerequisites: None
 Corequisites: None
 Available: Summer
 This course is designed to describe consumer behavior as applied to the exchange processes involved in acquiring, consuming, and disposing of goods and services. Topics include an analysis of basic and environmental determinants of consumer behavior with emphasis on the decision-making process. Upon completion, students should be able to analyze concepts related to the study of the individual consumer.

MKT 224 International Marketing 3 0 3
 Prerequisites: None
 Corequisites: None
 Available: Fall
 This course covers the basic concepts of international marketing activity and theory. Topics include product promotion, placement, and pricing strategies in the international marketing environment. Upon completion, students should be able to demonstrate a basic understanding of the concepts covered.

MKT 225 Marketing Research 3 0 3
 Prerequisites: MKT 120
 Corequisites: None
 Available: Spring
 This course provides information for decision making by providing guidance in developing, analyzing, and using data. Emphasis is placed on marketing research as a tool in decision making. Upon completion, students should be able to design and conduct a marketing research project and interpret the results. This course is a unique concentration requirement of the Marketing and Retailing concentration in the Business Administration program.

MKT 227 Marketing Applications**3 0 3**

Prerequisites: MKT 120 and MKT 123

Corequisites: None

Available: Spring

This course extends the study of diverse marketing strategies. Emphasis is placed on case studies and small group projects involving research or planning. Upon completion, students should be able to effectively participate in the formulation of a marketing strategy. This course is a unique concentration requirement of the Marketing and Retailing concentration in the Business Administration program.

MKT 229 Special Events Production**2 0 2**

Prerequisites: None

Corequisites: None

Available: Spring

This course introduces the different objectives of various special events and the procedures and elements necessary for successful promotional activity. Emphasis is placed on planning, budgeting, promoting, and coordinating activities. Upon completion, students should be able to utilize the elements studied in the production of special events.

Medical Laboratory Technology**MLT 110 Introduction to MLT****2 3 0 3**

Prerequisites: Enrollment in the Medical Laboratory Technology program

Corequisites: None

Available: Fall

This course is designed to introduce all aspects of the medical laboratory profession. Topics include health care/laboratory organization, professional ethics, basic laboratory techniques, safety, quality assurance, and specimen collection. Upon completion, students should be able to demonstrate a basic understanding of laboratory operations and be able to perform basic laboratory skills.

MLT 111 Urinalysis & Body Fluids**1 3 0 2**

Prerequisites: Enrollment in the Medical Laboratory Technology program, MLT 110 and BIO 163

Corequisites: None

Available: Summer

This course introduces the laboratory analysis of urine and body fluids. Topics include physical, chemical, and microscopic examination of the urine and body fluids. Upon completion, students should be able to demonstrate theoretical comprehension in performing and interpreting urinalysis and body fluid tests.

MLT 120 Hematology/Hemostasis**3 3 0 4**

Prerequisites: Enrollment in the Medical Laboratory Technology program, MLT 110 and BIO 163

Corequisites: None

Available: Spring

This course introduces the theory and technology used in analyzing blood cells and the study of hemostasis. Topics include hematology, hemostasis, and related laboratory testing. Upon completion, students should be able to demonstrate theoretical comprehension of hematology/hemostasis, perform diagnostic techniques, and correlate laboratory findings with disorders.

MLT 126 Immunology and Serology**1 2 0 2**

Prerequisites: Enrollment in the Medical Laboratory Technology program, MLT 110 and BIO 163

Corequisites: None

Available: Spring

This course introduces the immune system and response and basic concepts of antigens, antibodies, and their reactions. Emphasis is placed on basic principles of immunologic and serodiagnostic techniques and concepts of cellular and humoral immunity in health and disease. Upon completion, students should be able to demonstrate theoretical comprehension and application in performing and interpreting routine immunologic and serodiagnostic procedures.

MLT 127 Transfusion Medicine**2 3 0 3**

Prerequisites: Enrollment in the Medical Laboratory Technology program and MLT 126

Corequisites: None

Available: Summer

This course introduces the blood group systems and their applications in transfusion medicine. Emphasis is placed on blood bank techniques including blood grouping and typing, pre-transfusion testing, donor selection and processing, and blood component preparation and therapy. Upon completion, students should be able to demonstrate theoretical comprehension and application in performing/interpreting routine blood bank procedures and recognizing/resolving common problems.

MLT 130 Clinical Chemistry**3 3 0 4**

Prerequisites: Enrollment in the Medical Laboratory Technology program, CHM 130, and CHM 130A

Corequisites: None

Available: Spring

This course introduces the quantitative analysis of blood and body fluids and their variations in health and disease. Topics include clinical biochemistry, methodologies, instrumentation, and quality control. Upon completion, students should be able to demonstrate theoretical comprehension of clinical chemistry, perform diagnostic techniques, and correlate laboratory findings with disorders.

MLT 140 Introduction to Microbiology**2 3 0 3**

Prerequisites: Enrollment in the Medical Laboratory Technology program

Corequisites: None

Available: Fall

This course is designed to introduce basic techniques and safety procedures in clinical microbiology. Emphasis is placed on the morphology and identification of common pathogenic organisms, aseptic technique, staining techniques, and usage of common media. Upon completion, students should be able to demonstrate theoretical comprehension in performing and interpreting basic clinical microbiology procedures.

MLT 215 Professional Issues**1 0 0 1**

Prerequisites: Enrollment in the Medical Laboratory Technology program

Corequisites: None

Available: Spring

This course surveys professional issues in preparation for career entry. Emphasis is placed on work readiness and theoretical concepts in microbiology, immunohematology, hematology, and clinical chemistry. Upon completion, students should be able to demonstrate competence in career entry-level areas and be prepared for the national certification examination.

MLT 240 Special Clinic Microbiology**2 3 0 3**

Prerequisites: MLT 140

Corequisites: None

Available: Spring

This course is designed to introduce special techniques in clinical microbiology. Emphasis is placed on advanced areas in microbiology. Upon completion, students should be able to demonstrate theoretical comprehension in performing and interpreting specialized clinical microbiology procedures.

MLT 252 MLT Practicum I***0 0 6 2**

Prerequisites: Enrollment in the Medical Laboratory Technology program, MLT 120, MLT 126, MLT 130, MLT 240, BIO 163, CHM 130, and CHM 130A

Corequisites: MLT 111 and MLT 127

Available: Summer

This course provides entry-level clinical laboratory experience. Emphasis is placed on technique, accuracy, and precision. Upon completion, students should be able to demonstrate entry-level competence on final clinical evaluations. Concentration will be in the area of Phlebotomy.

MLT 254 MLT Practicum I***0 0 12 4**

Prerequisites: Enrollment in the Medical Laboratory Technology program and MLT 252

Corequisites: None

Available: Fall

This course provides entry-level clinical laboratory experience. Emphasis is placed on technique, accuracy, and precision. Upon completion, students should be able to demonstrate entry-level competence on final clinical evaluations. Concentration will be in the area of blood banking.

MLT 255 MLT Practicum I***0 0 15 5**

Prerequisites: Enrollment in the Medical Laboratory Technology program and MLT 252

Corequisites: None

Available: Fall

This course provides entry-level clinical laboratory experience. Emphasis is placed on technique, accuracy, and precision. Upon completion, students should be able to demonstrate entry-level competence on final clinical evaluations. Concentration will be in the area of microbiology.

MLT 261 MLT Practicum II***0 0 3 1**

Prerequisites: Enrollment in the Medical Laboratory Technology program and MLT 252

Corequisites: None

Available: Fall

This course provides entry-level clinical laboratory experience. Emphasis is placed on technique, accuracy, and precision. Upon completion, students should be able to demonstrate entry-level competence on final clinical evaluations. Concentration will be in the area of donors and component therapy.

MLT 265 MLT Practicum II***0 0 15 5**

Prerequisites: Enrollment in the Medical Laboratory Technology program and MLT 252

Corequisites: None

Available: Spring

This course provides entry-level clinical laboratory experience. Emphasis is placed on technique, accuracy, and precision. Upon completion, students should be able to demonstrate entry-level competence on final clinical evaluations. Concentration will be in the area of hematology.

MLT 275 MLT Practicum III***0 0 15 5**

Prerequisites: Enrollment in the Medical Laboratory Technology program and MLT 252

Corequisites: None

Available: Spring

This course provides entry-level clinical laboratory experience. Emphasis is placed on technique, accuracy, and precision. Upon completion, students should be able to demonstrate entry-level competence on final clinical evaluations. Concentration will be in the area of clinical chemistry. ** MLT 252, 254, 255, 261, 265, 275 Because of clinical space restrictions, students will have individual schedules for MLT Practicums. Students will register for these courses as assigned by the department chairperson. During each student's first clinical experience course, general hospital orientation will be covered.

Maintenance***MNT 110 Intro to Maint Procedures****1 3 2**

Prerequisites: None

Corequisites: None

Available: Fall

This course covers basic maintenance fundamentals for power transmission equipment. Topics include equipment inspection, lubrication, alignment, and other scheduled maintenance procedures. Upon completion, students should be able to demonstrate knowledge of accepted maintenance procedures and practices according to current industry standards.

MNT 111 Maintenance Practices*2 2 3**

Prerequisites: None

Corequisites: None

Available: Spring

This course provides in-depth theory and practical applications relating to predictive and preventive maintenance programs. Emphasis is placed on equipment failure analysis, maintenance management software, and techniques such as vibration and infrared analysis. Upon completion, students should be able to demonstrate an understanding of modern analytical and documentation methods.

Magnetic Resonance Imaging**MRI 210 MRI Physics and Equipment****3 0 0 3**

Prerequisites: Enrollment in CT/MRI diploma or MRI certificate programs

Corequisites: None

Available: Spring

This course covers the physical principles of image formation, data acquisition, and image processing in magnetic resonance imaging. Emphasis is placed on instrumentation, fundamentals, pulse sequences, data manipulation, imaging parameters, options, and their effects on image quality. Upon completion, students should be able to understand the principles behind image formation, data acquisition, and image processing in magnetic resonance imaging.

MRI 211 MRI Procedures**4 0 0 4**

Prerequisites: None

Corequisites: None

Available: Spring

This course covers patient care, magnetic field safety, cross-sectional anatomy, contrast media, and scanning procedures in magnetic resonance imaging. Emphasis is placed on patient assessment and monitoring, safety precautions, contrast agents' use, methods of data acquisition, and identification of cross-sectional anatomy. Upon completion, students should be able to integrate all facets of image processing in magnetic resonance imaging.

MRI 225 MRI Clinical Practicum
0 0 15 5

Prerequisites: Enrollment in CT/MRI diploma or MRI certificate programs

Corequisites: None

Available: Spring

This course provides experience in the computed tomography clinical setting. Emphasis is placed on patient care and positioning, scanning procedures, and image production in magnetic resonance imaging. Upon completion, students should be able to assume a variety of duties and responsibilities within the magnetic resonance clinical environment.

MRI 226 MRI Clinical Practicum
0 0 18 6

Prerequisites: Enrollment in CT/MRI diploma or MRI certificate programs

Corequisites: None

Available: Fall, Spring

This course provides experience in the computed tomography clinical setting. Emphasis is placed on patient care and positioning, scanning procedures, and image production in magnetic resonance imaging. Upon completion, students should be able to assume a variety of duties and responsibilities within the magnetic resonance clinical environment.

Therapeutic Massage

MTH 110 Fundamentals of Massage
6 9 3 10

Prerequisites: None

Corequisites: None

Available: Fall

This course introduces concepts basic to the role of the massage therapist in a variety of clinical settings. Emphasis is placed on beginning theory and techniques of body work as well as skill in therapeutic touch. Upon completion of the course, the student should be able to apply basic practical massage therapy skills.

MTH 120 Therapeutic Massage Applications
6 9 3 10

Prerequisites: MTH 110

Corequisites: None

Available: Spring, Summer

This course provides an expanded knowledge and skill base for the massage therapist in a variety of clinical settings. Emphasis is placed on selected therapeutic approaches throughout the lifespan. Upon completion, students should be able to perform entry level therapeutic massage on various populations.

MTH 121 Clinical Supplement I
0 0 3 1

Prerequisites: None

Corequisites: MTH 110, MTH 120, MTH 125, MTH 210 or MTH 220

Available: Spring, Summer

This course is designed to introduce the student to a variety of clinical experiences. Emphasis is placed on applying the therapeutic massage process across the lifespan. Upon completion, students should be able to demonstrate delivery of massage techniques in a clinical setting.

MTH 125 Ethics of Massage
2 0 0 2

Prerequisites: None

Corequisites: None

Available: Spring, Summer

This course is designed to explore issues related to the practice of massage therapy. Emphasis is placed on ethical, legal, professional, and political issues. Upon completion students should be able to discuss issues relating to the practice of massage therapy, client/therapist relationships as well as ethical issues.

MTH 210 Advanced Skills of Massage
4 9 3 8

Prerequisites: MTH 120 or MTH 121

Corequisites: None

Available: Fall, Summer

This course provides knowledge and skills in diverse body work modalities in a variety of clinical settings. Emphasis is placed on selected techniques such as Neuromuscular Therapy, Sports Massage, Soft Tissue Release, Spa Approaches, Oriental Therapies, and energy techniques. Upon completion, students should be able to perform basic skills in techniques covered.

MTH 220 Outcome-Based Massage
4 6 3 7

Prerequisites: MTH 120, MTH 121, or MTH 221

Corequisites: None

Available: Fall, Spring

This course provides knowledge and skills in more complex body works modalities in a variety of clinical settings. Emphasis is placed on developing advanced skills in outcome-based Massage. Upon completion, students should be able to perform basic skills in techniques covered.

MTH 221 Clinical Supplement II
0 0 6 2

Prerequisites: MTH 110

Corequisites: MTH 120, MTH 125, MTH 210, or MTH 220

Available: Fall

This course is designed to be offered as an advanced clinical experience. Emphasis is placed on applying an advanced therapeutic massage process across the lifespan. Upon completion, students should be able to demonstrate delivery of massage at an advanced level in a clinical setting.

Music

MUS 110 Music Appreciation
3 0 3

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course is a basic survey of the music of the Western world. Emphasis is placed on the elements of music, terminology, composers, form, and style within a historical perspective. Upon completion, students should be able to demonstrate skills in basic listening and understanding of the art of music. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

MUS 112 Introduction to Jazz
3 0 3

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course introduces the origins and musical components of jazz and the contributions of its major artists. Emphasis is placed on the development of discriminating listening habits, as well as the investigation of the styles and structural forms of the jazz idiom. Upon completion, students should be able to demonstrate skills in listening and understanding this form of American music. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts

MUS 113 American Music 3 0 3 Prerequisites: None Corequisites: None Available: Fall, Spring This course introduces various musical styles, influences, and composers of the United States from pre-Colonial times to the present. Emphasis is placed on the broad variety of music particular to American culture. Upon completion, students should be able to demonstrate skills in basic listening and understanding of American music. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.	MUS 132 Chorus II 0 2 1 Prerequisites: MUS 131 Corequisites: None Available: Spring This course provides a continuation of studies begun in MUS 131. Emphasis is placed on vocal techniques and the study and performance of a variety of styles and periods of choral literature. Upon completion, students should be able to demonstrate skills needed to participate in choral singing leading to performance. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.
MUS 114 Non-Western Music 3 0 3 Prerequisites: None Corequisites: None Available: Fall, Spring This course provides a basic survey of the music of the non-Western world. Emphasis is placed on nontraditional instruments, sources, and performing practices. Upon completion, students should be able to demonstrate skills in basic listening and understanding of the art of non-Western music. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.	MUS 210 History of Rock Music 3 0 3 Prerequisites: MUS 110 Corequisites: None Available: As Needed This course is a survey of Rock music from the early 1950's to the present. Emphasis is placed on musical groups, soloists, and styles related to the evolution of this idiom and on related historical and social events. Upon completion, students should be able to identify specific styles and to explain the influence of selected performers within their respective eras.
MUS 121 Music Theory I 3 2 4 Prerequisites: None Corequisites: None Available: Fall This course provides an in-depth introduction to melody, rhythm, and harmony. Emphasis is placed on fundamental melodic, rhythmic, and harmonic analysis, introduction to part writing, ear-training, and sight-singing. Upon completion, students should be able to demonstrate proficiency in the recognition and application of the above. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.	MUS 221 Music Theory III 3 2 4 Prerequisites: MUS 122 Corequisites: None Available: As Needed This course is a continuation of MUS 122. Emphasis is placed on altered and chromatic harmony, common practice era compositional techniques and forms, and continued studies in part-writing, ear-training, and sight-singing. Upon completion, students should be able to demonstrate proficiency in the recognition and application of the above. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.
MUS 122 Music Theory II 3 2 4 Prerequisites: MUS 121 Corequisites: None Available: Spring This course is a continuation of studies begun in MUS 121. Emphasis is placed on advanced melodic, rhythmic, and harmonic analysis and continued studies in part-writing, ear-training, and sight-singing. Upon completion, students should be able to demonstrate proficiency in the recognition and application of the above. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.	MUS 222 Music Theory IV 3 2 4 Prerequisites: MUS 221 Corequisites: None Available: As Needed This course is a continuation of studies begun in MUS 221. Emphasis is placed on continued study of common practice era compositional techniques and forms, 20th century practices, ear-training, and sight-singing. Upon completion, students should be able to demonstrate proficiency in the recognition and application of the above. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.
MUS 131 Chorus I 0 2 1 Prerequisites: None Corequisites: None Available: Fall This course provides an opportunity to gain experience singing in a chorus. Emphasis is placed on vocal techniques and the study and performance of a variety of styles and periods of choral literature. Upon completion, students should be able to demonstrate skills needed to participate in choral singing leading to performance. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.	MUS 231 Chorus III 0 2 1 Prerequisites: MUS 132 Corequisites: None Available: As Needed This course is a continuation of MUS 132. Emphasis is placed on vocal techniques and the study and performance of a variety of styles and periods of choral literature. Upon completion, students should be able to demonstrate skills needed to participate in choral singing leading to performance. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

MUS 232 Chorus IV**0 2 1**

Prerequisites: MUS 231

Corequisites: None

Available: As Needed

This course is a continuation of MUS 231. Emphasis is placed on vocal techniques and the study of styles and periods of choral literature. Upon completion, students should be able to demonstrate skills needed to participate in choral singing leading to performance. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

Networking Technology**NET 110 Networking Concepts****2 2 3**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course introduces students to the networking field. Topics include network terminology and protocols, local-area networks, wide-area networks, OSI model, cabling, router programming, Ethernet, IP addressing, and network standards. Upon completion, students should be able to perform tasks related to networking mathematics, terminology, and models, media, Ethernet, subnetting, and TCP/IP Protocols. This course is also available through the Virtual Learning Community (VLC).

NET 125 Networking Basics**1 4 3**

Prerequisites: None

Corequisites: None

Available: Fall

This course introduces the networking field. Emphasis is placed on network terminology and protocols, local-area networks, wide-area networks, OSI model, cabling, router programming, Ethernet, IP addressing, and network standards. Upon completion, students should be able to perform tasks related to networking mathematics, terminology, and models, media, Ethernet, subnetting, and TCP/IP Protocols. This is the first course in the Cisco Networking Academy's CCNA sequence.

NET 126 Routing Basics**1 4 3**

Prerequisites: NET 125

Corequisites: None

Available: Spring

This course focuses on initial router configuration, router software management, routing protocol configuration, TCP/IP, and access control lists (ACLs). Emphasis will be placed on the fundamentals of router configuration, managing router software, routing protocol, and access lists. Upon completion, students should have an understanding of routers and their role in WANs, router configuration, routing protocols, TCP/IP, troubleshooting, and ACLs. This is the second course in the Cisco Networking Academy's CCNA sequence.

NET 175 Wireless Technology**2 2 3**

Prerequisites: NET 110 or NET 125 and NET 126

Corequisites: None

Available: Fall, Spring

This course introduces the student to wireless technology and interoperability with different communication protocols. Topics include Wireless Application Protocol (WAP), Wireless Mark-up language (WML), link manager, service discovery protocol, transport layer and frequency band. Upon completion, students should be able to discuss in written and oral form protocols and procedures required for different wireless applications.

NET 225 Routing and Switching I**1 4 3**

Prerequisites: NET 126

Corequisites: None

Available: Fall, Summer

This course focuses on advanced IP addressing techniques, intermediate routing protocols, command-line interface configuration of switches, Ethernet switching, VLANs, STP, and VTP. Emphasis will be placed on application and demonstration of skills acquired in pre-requisite courses. Upon completion, students should be able to perform tasks related to VLSM, routing protocols, switching concepts and configuration, STP, VLANs, and VTP. This is the third course in the Cisco Networking Academy's CCNA sequence.

NET 226 Routing and Switching II**1 4 3**

Prerequisites: NET 225

Corequisites: None

Available: Fall, Spring

This course introduces WAN theory and design, WAN technology, PPP, Frame Relay, ISDN, and additional case studies. Topics include network congestion problems, TCP/IP transport and network layer protocols, advanced routing and switching configuration, ISDN protocols, PPP encapsulation operations on a router. Upon completion, students should be able to provide solutions for network routing problems, identify ISDN protocols, and describe the Spanning Tree protocol. This is the fourth course in the Cisco Networking Academy's CCNA sequence.

NET 270 Building Scalable Networks**1 4 3**

Prerequisites: NET 226

Corequisites: None

Available: As Needed

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 a Cisco Networking Academy course.

NET 272 Multi-Layer Networks**1 4 3**

Prerequisites: NET 226

Corequisites: None

Available: As Needed

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.

NET 289 Networking Project**1 4 3**

Prerequisites: NOS 220 and NOS 230

Corequisites: NET 226

Available: Summer

This course provides an opportunity to complete a significant networking project from the design phase through implementation with minimal instructor support. Emphasis is placed on project definition, documentation, installation, testing, presentation, and training. Upon completion, students should be able to complete a project from the definition phase through implementation.

Networking Operating Systems

NOS 110 Operating Systems Concepts

2 3 3

Prerequisites: None

Corequisites: None

Available: Fall, Spring, Summer

This course introduces students to a broad range of operating system concepts, including installation and maintenance. Emphasis is placed on operating system concepts, management, maintenance, and resources required. Upon completion of this course, students will have an understanding of OS concepts, installation, management, maintenance, using a variety of operating systems. The course will include file management and simple user creation under at least two operating systems.

NOS 120 Linux/UNIX Single User

2 2 3

Prerequisites: NOS 110

Corequisites: None

Available: Spring, Summer

This course develops the necessary skills for students to develop both GUI and command line skills for using and customizing a Linux workstation. Topics include Linux file system and access permissions, GNOME Interface, VI editor, X Window System expression pattern matching, I/O redirection, network and printing utilities. Upon completion, students should be able to customize and use Linux systems for command line requirements and desktop productivity roles.

NOS 130 Windows Single User

2 2 3

Prerequisites: NOS 110

Corequisites: None

Available: Fall, Spring, Summer

This course introduces operating system concepts for single-user systems. Topics include hardware management, file and memory management, system configuration/optimization, and utilities. Upon completion, students should be able to perform operating systems functions at the support level in a single-user environment.

NOS 220 Linux/UNIX Admin I

2 2 3

Prerequisites: NOS 120

Corequisites: None

Available: Fall, Summer

This course introduces the Linux file system, group administration, and system hardware controls. Topics include installation, creation and maintaining file systems, NIS client and DHCP client configuration, NFS, SMB/Samba, Configure X, Gnome, KDE, basic memory, processes, and security. Upon completion, students should be able to perform system administration tasks including installation, configuring and attaching a new Linux workstation to an existing network.

NOS 221 Linux/UNIX Admin II

2 2 3

Prerequisites: NOS 220

Corequisites: None

Available: Fall

This course includes skill-building in configuring common network services and security administration using Linux. Topics include server-side setup, configuration, basic administration of common networking services, and security administration using Linux. Upon completion, students should be able to setup a Linux server and configure common network services including security requirements.

NOS 222 Linux/UNIX Admin III

2 2 3

Prerequisites: NOS 221

Corequisites: None

Available: As Needed

This course includes technical topics in preparing an enterprise Linux system for common uses. Topics include advanced study of hardware, installation, boot process, file system administration, software administration, user administration, system administration, kernel services, configuration, securing services, and troubleshooting. Upon completion, students should be able to administer an enterprise Linux system.

NOS 230 Windows Admin I

2 2 3

Prerequisites: NOS 130

Corequisites: None

Available: Fall

This course covers the installation and administration of a Windows Server network operating system. Topics include managing and maintaining physical and logical devices, access to resources, the server environment, managing users, computers, and groups, and Managing/Implementing Disaster Recovery. Upon completion, students should be able to manage and maintain a Windows Server environment.

NOS 231 Windows Admin II

2 2 3

Prerequisites: NOS 230

Corequisites: None

Available: Fall

This course covers implementing, managing, and maintaining a Windows Server network infrastructure. Topics include implementing, managing, and maintaining IP addressing, name resolution, network security, routing and remote access, and managing a network infrastructure. Upon completion, students should be able to manage and maintain a Windows Server environment.

NOS 232 Windows Admin III

2 2 3

Prerequisites: NOS 231

Corequisites: None

Available: As Needed

This course covers implementing and administering security in a Windows Server network. Topics include implementing, managing, and trouble shooting security policies, patch management infrastructure, security for network communications, authentication, authorization, and PKI. Upon completion, students should be able to implement, manage, and maintain a Windows Server network infrastructure.

Nursing

*NUR 101 Practical Nursing I

7 6 6 11

Prerequisites: Admission into the Practical Nursing program

Corequisites: BIO 168 and PSY 150

Available: Fall

This course introduces concepts as related to the practical nurse's care-giver and discipline-specific roles. Emphasis is placed on the nursing process, legal/ethical/professional issues, wellness/illness patterns, and basic nursing skills. Upon completion, students should be able to demonstrate beginning understanding of nursing process to promote/maintain/restore optimum health for diverse clients throughout the life span. This is a diploma-level course.

NUR 102 Practical Nursing II*8 0 12 12**

Prerequisites: BIO 168 and NUR 101

Corequisites: ENG 111 and BIO 169

Available: Spring

This course includes more advanced concepts as related to the practical nurse's care-giver and discipline-specific roles. Emphasis is placed on the nursing process, delegation, cost effectiveness, legal/ethical/professional issues, and wellness/illness patterns. Upon completion, students should be able to begin participating in the nursing process to promote/maintain/restore optimum health for diverse clients throughout the life span. This is a diploma-level course.

NUR 103 Practical Nursing III*6 0 12 10**

Prerequisites: BIO 169, PSY 150, ENG 111, and NUR 102

Corequisites: None

Available: Summer

This course focuses on use of nursing/related concepts by practical nurses as providers of care/members of discipline in collaboration with health team members. Emphasis is placed on the nursing process, wellness/illness patterns, entry level issues, accountability, advocacy, professional development, evolving technology, and changing health care delivery systems. Upon completion, students should be able to use the nursing process to promote/maintain/restore optimum health for diverse clients throughout the life span. This is a diploma-level course.

NUR 111 Intro to Health Concepts*4 6 6 8**

Prerequisites: Admission into the Associate Degree Nursing Program

Corequisites: BIO 168

Available: Fall

This course introduces the concepts within the three domains of the individual, healthcare, and nursing. Emphasis is placed on the concepts within each domain including medication administration, assessment, nutrition, ethics, interdisciplinary teams, informatics, evidence-based practice, individual-centered care, and quality improvement. Upon completion, students should be able to provide safe nursing care incorporating the concepts identified in this course.

NUR 112 Health-Illness Concepts*3 0 6 5**

Prerequisites: NUR 111, BIO 168

Corequisites: BIO 169

Available: Spring

This course is designed to further develop the concepts within the three domains of the individual, healthcare, and nursing. Emphasis is placed on the concepts of acid-base, metabolism, cellular regulation, oxygenation, infection, stress/coping, health-wellness-illness, communication, caring interventions, managing care, safety, quality improvement, and informatics. Upon completion, students should be able to provide safe nursing care incorporating the concepts identified in this course.

NUR 113 Family Health Concepts*3 0 6 5**

Prerequisites: NUR 111, NUR 112, NUR 114; BIO 169

Corequisites: PSY 241

Available: Fall and Summer

This course is designed to further develop the concepts within the three domains of the individual, healthcare, and nursing. Emphasis is placed on the concepts of oxygenation, sexuality, reproduction, grief/loss, mood/affect, behaviors, development, family, health-wellness-illness, communication, caring interventions, managing care, safety, and advocacy. Upon completion, students should be able to provide safe nursing care incorporating the concepts identified in this course.

NUR 114 Holistic Health Concepts*3 0 6 5**

Prerequisites: NUR 111, BIO 168

Corequisites: BIO 169

Available: Spring

This course is designed to further develop the concepts within the three domains of the individual, healthcare, and nursing. Emphasis is placed on the concepts of cellular regulation, perfusion, inflammation, sensory perception, stress/coping, mood/affect, cognition, self, violence, health-wellness-illness, professional behaviors, caring interventions, and safety. Upon completion, students should be able to provide safe nursing care incorporating the concepts identified in this course.

NUR 211 Health Care Concepts*3 0 6 5**

Prerequisites: NUR 111, NUR 112, NUR 114, BIO 169

Corequisites: None

Available: Fall and Summer

This course is designed to further develop the concepts within the three domains of the individual, healthcare, and nursing. Emphasis is placed on the concepts of cellular regulation, perfusion, infection, immunity, mobility, comfort, behaviors, health-wellness-illness, clinical decision-making, caring interventions, managing care, and safety. Upon completion, students should be able to provide safe nursing care incorporating the concepts identified in this course.

NUR 212 Health System Concepts*3 0 6 5**

Prerequisites: NUR 111, NUR 112, NUR 114, BIO 169

Corequisites: None

Available: Fall and Summer

This course is designed to further develop the concepts within the three domains of the individual, healthcare, and nursing. Emphasis is placed on the concepts of grief/loss, violence, health-wellness-illness, collaboration, managing care, safety, advocacy, legal issues, policy, healthcare systems, ethics, accountability, and evidence-based practice. Upon completion, students should be able to provide safe nursing care incorporating the concepts identified in this course.

NUR 213 Complex Health Concepts*4 3 15 10**

Prerequisites: NUR 111, NUR 112, NUR 113, NUR 114, NUR 211, and NUR 212

Corequisites: None

Available: Spring 2012

This course is designed to assimilate the concepts within the three domains of the individual, healthcare, and nursing. Emphasis is placed on the concepts of fluid/electrolytes, metabolism, perfusion, mobility, stress/coping, violence, health-wellness-illness, professional behaviors, caring interventions, managing care, healthcare systems, and quality improvement. Upon completion, students should be able to demonstrate the knowledge, skills, and attitudes necessary to provide quality, individualized, entry level nursing care.

Office Administration**OST 131 Keyboarding****1 2 2**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course covers basic keyboarding skills. Emphasis is placed on the touch system, correct techniques, and development of speed and accuracy. Upon completion, students should be able to key at an acceptable speed and accuracy level using the touch system. Students should be able to complete timed writing competencies consisting of three timed writings at 25 nwam for three minutes with three or fewer errors and 160 keystrokes per minute for two minutes with two or less errors on the numeric keypad using the touch system.

OST 132 Keyboard Skill Building 1 2 2 Prerequisites: OST 134 Corequisites: None Available: Spring, Summer This course is designed to increase speed and improve accuracy in keyboarding. Emphasis is placed on diagnostic tests to identify accuracy and speed deficiencies followed by corrective drills. Upon completion, students should be able to keyboard rhythmically with greater accuracy and speed. Students should be able to complete timed writing competencies consisting of three timed writings at 50 nwm for five minutes with five or fewer errors using the touch system.	OST 142 Med Terms II-Med Office 3 0 3 Prerequisites: OST 141 Corequisites: None Available: Spring, Summer This course is a continuation of OST 141 and continues the study, using a language-structure approach, of medical office terminology and vocabulary. Topics include word parts that relate to systemic components, conditions, pathology, and disorder remediation in the remaining systems of the human body. Upon completion, students should be able to relate words to systems, pluralize, define, pronounce, and construct sentences with the included terms.
OST 134 Text Entry and Formatting 2 2 3 Prerequisites: None Corequisites: None Available: Fall, Spring This course is designed to provide skills needed to increase speed, improve accuracy, and format documents. Topics include letters, memos, tables, and business reports. Upon completion, students should be able to produce documents and key timed writings at speeds commensurate with employability. Students should be able to complete timed writing competencies consisting of three timed writings at 40 nwm for five minutes with five or fewer errors using the touch system.	OST 148 Med Coding Billing & Insu 3 0 3 Prerequisites: CIS 110 and MED 121 Corequisites: None Available: Fall, Spring This course introduces fundamentals of medical coding, billing, and insurance. Emphasis is placed on the medical billing cycle to include third party payers, coding concepts, and form preparation. Upon completion, students should be able to explain the life cycle of and accurately complete a medical insurance claim.
OST 136 Word Processing 2 2 3 Prerequisites: None Corequisites: None Available: Fall, Spring This course is designed to introduce word processing concepts and applications. Topics include preparation of a variety of documents and mastery of specialized software functions. Upon completion, students should be able to work effectively in a computerized word processing environment. Upon course entrance, a keyboarding proficiency test requiring 25 gwam at 98 percent accuracy using the touch system will be administered.	*OST 149 Medical Legal Issues 3 0 3 Prerequisites: None Corequisites: None Available: Spring, Summer This course introduces the complex legal, moral, and ethical issues involved in providing health-care services. Emphasis is placed on the legal requirements of medical practices; the relationship of physician, patient, and office personnel; professional liabilities; and medical practice liability. Upon completion, students should be able to demonstrate a working knowledge of current medical law and accepted ethical behavior.
OST 137 Office Software Applications 2 2 3 Prerequisites: None Corequisites: None Available: Fall This course introduces the concepts and functions of software that meets the changing needs of the community. Emphasis is placed on the terminology and use of software through a hands-on approach. Upon completion, students should be able to use software in a business environment.	OST 164 Text Editing Applications 3 0 3 Prerequisites: None Corequisites: None Available: Fall, Spring This course provides a comprehensive study of editing skills needed in the workplace. Emphasis is placed on grammar, punctuation, sentence structure, proofreading, and editing. Upon completion, students should be able to use reference materials to compose and edit text.
OST 141 Med Terms I-Med Office 3 0 3 Prerequisites: None Corequisites: None Available: Fall, Spring This course uses a language-structure approach to present the terminology and vocabulary that will be encountered in medical office settings. Topics include word parts that relate to systemic components, conditions, pathology, and disorder remediation in approximately one-half of the systems of the human body. Upon completion, students should be able to relate words to systems, pluralize, define, pronounce, and construct sentences with the included terms.	OST 184 Records Management 2 2 3 Prerequisites: None Corequisites: None Available: Fall, Spring, Summer This course includes the creation, maintenance, protection, security, and disposition of records stored in a variety of media forms. Topics include alphabetic, geographic, subject, and numeric filing methods. Upon completion, students should be able to set up and maintain a records management system.
	OST 201 Medical Transcription I 3 2 4 Prerequisites: OST 136 and OST 164 Corequisites: MED 122 or OST 142; and OST 164 Available: Fall, Spring This course introduces dictating equipment and typical medical dictation. Emphasis is placed on efficient use of equipment, dictionaries, PDRs, and other reference materials. Upon completion, students should be able to efficiently operate dictating equipment and to accurately transcribe a variety of medical documents in a specified time.

OST 202 Medical Transcription II*3 2 4**

Prerequisites: OST 201

Corequisites: None

Available: Summer

This course provides additional practice in transcribing documents from various medical specialties. Emphasis is placed on increasing transcription speed and accuracy and understanding medical procedures and terminology. Upon completion, students should be able to accurately transcribe a variety of medical documents in a specified time.

OST 233 Office Publications Design**2 2 3**

Prerequisites: OST 136

Corequisites: None

Available: Spring

This course provides entry-level skills in using software with desktop publishing capabilities. Topics include principles of page layout, desktop publishing terminology and applications, and legal and ethical considerations of software use. Upon completion, students should be able to design and produce professional business documents and publications.

OST 243 Med Office Simulation**2 2 3**

Prerequisites: OST 148

Corequisites: None

Available: Spring, Summer

This course introduces medical systems used to process information in the automated office. Topics include traditional and electronic information resources, storing and retrieving information, and the billing cycle. Upon completion, students should be able to use the computer accurately to schedule, bill, update, and make corrections.

OST 247 Procedure Coding**1 2 2**

Prerequisites: MED 121 or OST 141

Corequisites: None

Available: Summer

This course provides in-depth coverage of procedural coding. Emphasis is placed on CPT and HCPCS coding systems. Upon completion, students should be able to properly code procedures and services performed in a medical facility.

OST 248 Diagnostic Coding**1 2 2**

Prerequisites: MED 121 or OST 141

Corequisites: None

Available: Summer

This course provides an in-depth study of diagnostic coding. Emphasis is placed on ICD-9-CM coding systems. Upon completion, students should be able to apply the principles of diagnostic coding in the physician's office.

OST 286 Professional Development*3 0 3**

Prerequisites: None

Corequisites: None

Available: Fall, Summer

This course covers the personal competencies and qualities needed to project a professional image in the office. Topics include interpersonal skills, healthy life-styles, appearance, attitude, personal and professional growth, multicultural awareness, and professional etiquette. Upon completion, students should be able to demonstrate these attributes in the classroom, office, and society.

OST 289 Administrative Office Mgt*2 2 3**

Prerequisites: OST 164 and either OST 134 or OST 136

Corequisites: None

Available: Spring, Summer

This course is designed to be a capstone course for the office professional and provides a working knowledge of modern office procedures. Emphasis is placed on scheduling, telephone procedures, travel arrangements, event planning, office design, and ergonomics. Upon completion, students should be able to adapt in an office environment.

Phlebotomy***PBT 100 Phlebotomy Technology****5 2 0 6**

Prerequisites: Enrollment in the Phlebotomy Technology program and RED 090

Corequisites: PBT 101

Available: Fall, Spring

This course provides instruction in the skills needed for the proper collection of blood and other specimens used for diagnostic testing. Emphasis is placed on ethics, legalities, medical terminology, safety and universal precautions, health care delivery systems, patient relations, anatomy and physiology, and specimen collection. Upon completion, students should be able to demonstrate competence in the theoretical comprehension of phlebotomy techniques. This is a certificate-level course.

PBT 101 Phlebotomy Practicum*0 0 9 3**

Prerequisites: Enrollment in the Phlebotomy Technology program

Corequisites: PBT 100

Available: Fall, Spring

This course provides supervised experience in the performance of venipuncture and microcollection techniques in a clinical facility. Emphasis is placed on patient interaction and application of universal precautions, proper collection techniques, special procedures, specimen handling, and data management. Upon completion, students should be able to safely perform procedures necessary for specimen collections on patients in various health care settings. This is a certificate-level course.

Professional Crafts: Sculpture**PCS 110 Intro to Metal Sculpture****2 9 5**

Prerequisites: PCS 112

Corequisites: None

Available: Fall

This course introduces the process and design of metal sculpture for the crafts-man. Topics include design of metal sculpture, layout, construction, and finishing. Upon completion, students should be able to demonstrate the ability to design and construct metal sculptures.

PCS 112 Beg. Welding for Artists**1 4 3**

Prerequisites: None

Corequisites: None

Available: Spring

This course is an introduction to the proper equipment and tools of the metal shop and welding methods for the artist. Topics include welding, cutting, forging, fabricating and finishing, and studio safety. Upon completion, students will be able to demonstrate efficient and safe use of metal shop tools and equipment.

Professional Crafts: Jewelry

PCJ 262 Hand Wrought Metals 1 3 2

Prerequisites: None

Corequisites: None

Available: Fall

This course covers the fundamental processes, techniques and tools for heating and forging ferrous and non-ferrous metals. Topics include fire control, use of hammers, tools and traditional techniques for metal shaping. Upon completion, students should be able to heat and use a variety of metals to create tools and shape basic metal projects.

Physical Education

PED 110 Fit and Well for Life 1 2 2

Prerequisites: None

Corequisites: None

Available: Fall, Spring, Summer

This course is designed to investigate and apply the basic concepts and principles of lifetime physical fitness and other health-related factors. Emphasis is placed on wellness through the study of nutrition, weight control, stress management, and consumer facts on exercise and fitness. Upon completion, students should be able to plan a personal, lifelong fitness program based on individual needs, abilities, and interests. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 113 Aerobics I 0 3 1

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course introduces a program of cardiovascular fitness involving continuous, rhythmic exercise. Emphasis is placed on developing cardiovascular efficiency, strength, and flexibility and on safety precautions. Upon completion, students should be able to select and implement a rhythmic aerobic exercise program. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 114 Aerobics II 0 3 1

Prerequisites: PED 113

Corequisites: None

Available: Fall, Spring

This course provides a continuation of a program of cardiovascular fitness involving rhythmic exercise. Emphasis is placed on a wide variety of aerobic activities which include cardiovascular efficiency, strength, and flexibility. Upon completion, students should be able to participate in and design a rhythmic aerobic exercise routine. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 117 Weight Training I 0 3 1

Prerequisites: None

Corequisites: None

Available: Fall, Spring, Summer

This course introduces the basics of weight training. Emphasis is placed on developing muscular strength, muscular endurance, and muscle tone. Upon completion, students should be able to establish and implement a personal weight training program. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 118 Weight Training II 0 3 1

Prerequisites: PED 117

Corequisites: None

Available: Fall, Spring, Summer

This course covers advanced levels of weight training. Emphasis is placed on meeting individual training goals and addressing weight training needs and interests. Upon completion, students should be able to establish and implement an individualized advanced weight training program. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 119 Circuit Training 0 3 1

Prerequisites: None

Corequisites: None

Available: As Needed

This course covers the skills necessary to participate in a developmental fitness program. Emphasis is placed on the circuit training method which involves a series of conditioning timed stations arranged for maximum benefit and variety. Upon completion, students should be able to understand and appreciate the role of circuit training as a means to develop fitness. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

PED 120 Walking for Fitness 0 3 1

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course introduces fitness through walking. Emphasis is placed on stretching, conditioning exercises, proper clothing, fluid needs, and injury prevention. Upon completion, students should be able to participate in a recreational walking program. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 122 Yoga I 0 2 1

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course introduces the basic discipline of yoga. Topics include proper breathing, relaxation techniques, and correct body positions. Upon completion, students should be able to demonstrate the procedures of yoga. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 123 Yoga II 0 2 1

Prerequisites: PED 122

Corequisites: None

Available: As Needed

This course introduces more detailed aspects of the discipline of yoga. Topics include breathing and physical postures, relaxation, and mental concentration. Upon completion, students should be able to demonstrate advanced procedures of yoga. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 125 Self-Defense - Beginning**0 2 1**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course is designed to aid students in developing rudimentary skills in self-defense. Emphasis is placed on stances, blocks, punches, and kicks as well as non-physical means of self-defense. Upon completion, students should be able to demonstrate basic self-defense techniques of a physical and non-physical nature. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 126 Self-Defense - Intermediate**0 2 1**

Prerequisites: PED 125

Corequisites: None

Available: As Needed

This course is designed to aid students in building on the techniques and skills developed in PED 125. Emphasis is placed on the appropriate psychological and physiological responses to various encounters. Upon completion, students should be able to demonstrate intermediate skills in self-defense stances, blocks, punches, and kick combinations. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

PED 128 Golf - Beginning**0 2 1**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course emphasizes the fundamentals of golf. Topics include the proper grips, stance, alignment, swings for the short and long game, putting, and the rules and etiquette of golf. Upon completion, students should be able to perform the basic golf shots and demonstrate a knowledge of the rules and etiquette of golf. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 130 Tennis - Beginning**0 2 1**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course emphasizes the fundamentals of tennis. Topics include basic strokes, rules, etiquette, and court play. Upon completion, students should be able to play recreational tennis. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 142 Lifetime Sports**0 2 1**

Prerequisites: None

Corequisites: None

Available: As Needed

This course is designed to give an overview of a variety of sports activities. Emphasis is placed on the skills and rules necessary to participate in a variety of lifetime sports. Upon completion, students should be able to demonstrate an awareness of the importance of participating in lifetime sports activities. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 143 Volleyball - Beginning**0 2 1**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course covers the fundamentals of volleyball. Emphasis is placed on the basics of serving, passing, setting, spiking, blocking, and the rules and etiquette of volleyball. Upon completion, students should be able to participate in recreational volleyball. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 145 Basketball - Beginning**0 2 1**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course covers the fundamentals of basketball. Emphasis is placed on skill development, knowledge of the rules, and basic game strategy. Upon completion, students should be able to participate in recreational basketball. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 170 Backpacking**0 2 1**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course covers the proper techniques for establishing a campsite, navigating in the wilderness, and planning for an overnight trip. Topics include planning for meals, proper use of maps and compass, and packing and dressing for extended periods in the outdoors. Upon completion, students should be able to identify quality backpacking equipment, identify the principles of no-trace camping, and successfully complete a backpacking experience. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 171 Nature Hiking**0 2 1**

Prerequisites: None

Corequisites: None

Available: Summer

This course provides instruction on how to equip and care for oneself on the trail. Topics include clothing, hygiene, trail ethics, and necessary equipment. Upon completion, students should be able to successfully participate in nature trail hikes. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 186 Dancing for Fitness**0 2 1**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course is designed to develop movement and recreational dance skills, safety, fitness, coordination, and techniques used to teach various groups. Emphasis is placed on participation and practice with adapting dances for ages and ability levels. Upon completion, students should be able to demonstrate knowledge of fitness through social, folk, and square dance participation and instruction. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

PED 215 Outdoor Cycling 0 2 1 Prerequisites: None Corequisites: None Available: Fall This course is designed to promote physical fitness through cycling. Emphasis is placed on selection and maintenance of the bicycle, gear shifting, pedaling techniques, safety procedures, and conditioning exercises necessary for cycling. Upon completion, students should be able to demonstrate safe handling of a bicycle for recreational use. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.	PED 240 Advanced PE Skills 0 2 1 Prerequisites: Instructor Consent Required Corequisites: None Available: As Needed This course provides those who have mastered skills in a particular physical education area the opportunity to assist with instruction. Emphasis is placed on methods of instruction, class organization, and progressive skill development. Upon completion, students should be able to design, develop, and implement a unit lesson plan for a skill they have mastered. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.
PED 217 Pilates I 0 2 1 Prerequisites: None Corequisites: None Available: Fall, Spring This course provides an introduction to the Pilates method of body conditioning exercise. Topics include instruction in beginning and intermediate Pilates exercises using a mat or equipment, history of the Pilates method, and relevant anatomy and physiology. Upon completion, students should be able to perform beginning and intermediate exercises, and 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.	Philosophy PHI 210 History of Philosophy 3 0 3 Prerequisites: ENG 111 Corequisites: None Available: As Needed This course introduces fundamental philosophical issues through an historical perspective. Emphasis is placed on such figures as Plato, Aristotle, Lao-Tzu, Confucius, Augustine, Aquinas, Descartes, Locke, Kant, Wollstonecraft, Nietzsche, and Sartre. Upon completion, students should be able to identify and distinguish among the key positions of the philosophers studied. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.
PED 218 Pilates II 0 2 1 Prerequisites: PED 217 Corequisites: None Available: As Needed This course provides continued instruction to the Pilates method of body conditioning exercise. Topics include instruction in intermediate and advanced Pilates exercises using a mat or equipment, relevant anatomy and physiology, and further discussion of related concepts. Upon completion, students should be able to perform intermediate and advanced exercises, and possess the autonomy to maintain their own personal Pilates practice. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.	PHI 215 Philosophical Issues 3 0 3 Prerequisites: ENG 111 Corequisites: None Available: Fall, Spring This course introduces fundamental issues in philosophy considering the views of classical and contemporary philosophers. Emphasis is placed on knowledge and belief, appearance and reality, determinism and free will, faith and reason, and justice and inequality. Upon completion, students should be able to identify, analyze, and critique the philosophical components of an issue. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.
PED 220 Exercise for Physically Challenged 0 2 1 Prerequisites: None Corequisites: None Available: As Needed This course is designed to improve physical strength, endurance, and range of motion while focusing on individual needs. Emphasis is placed on exercises which are designed and adapted to serve those with special needs. Upon completion, students should be able to show improved physical fitness, body awareness, and an appreciation for their physical well-being. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.	PHI 230 Introduction to Logic 3 0 3 Prerequisites: ENG 111 Corequisites: None Available: Fall, Spring, Summer This course introduces basic concepts and techniques for distinguishing between good and bad reasoning. Emphasis is placed on deduction, induction, validity, soundness, syllogisms, truth functions, predicate logic, analogical inference, common fallacies, and scientific methods. Upon completion, students should be able to analyze arguments, distinguish between deductive and inductive arguments, test validity, and appraise inductive reasoning. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.
PED 230 Shotokan Karate 0 3 1 Prerequisites: None Corequisites: None Available: Fall, Spring This course introduces martial arts using the Shotokan Karate form. Topics include proper conditioning exercises, proper terminology, historical foundations, etiquette and drills. Upon completion, students should be able to perform skills and techniques related to this form of martial arts. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.	

PHI 240 Introduction to Ethics**3 0 3**

Prerequisites: ENG 111

Corequisites: None

Available: Fall, Spring, Summer

This course introduces theories about the nature and foundations of moral judgments and applications to contemporary moral issues. Emphasis is placed on utilitarianism, rule-based ethics, existentialism, relativism versus objectivism, and egoism. Upon completion, students should be able to apply various ethical theories to individual moral issues such as euthanasia, abortion, crime and punishment, and justice. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

Physical Science**PHS 140 Weather and Climate****3 0 3**

Prerequisites: None

Corequisites: None

Available: Spring

This course introduces the nature, origin, processes, and dynamics of the earth's atmospheric environment. Topics include general weather patterns, climate, and ecological influences on the atmosphere. Upon completion, students should be able to demonstrate an understanding of weather formation, precipitation, storm patterns, and processes of atmospheric pollution. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

Physics**PHY 110 Conceptual Physics****3 0 3**

Prerequisites: None

Corequisites: PHY 110A

Available: Fall, Spring, Summer

This course provides a conceptually-based exposure to the fundamental principles and processes of the physical world. Topics include basic concepts of motion, forces, energy, heat, electricity, magnetism, and the structure of matter and the universe. Upon completion, students should be able to describe examples and applications of the principles studied. Nonmathematical discussions of concepts and practical applications will be stressed. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

PHY 110A Conceptual Physics Lab**0 2 1**

Prerequisites: None

Corequisites: PHY 110

Available: Fall, Spring, Summer

This course is a laboratory for PHY 110. Emphasis is placed on laboratory experiences that enhance materials presented in PHY 110. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in PHY 110. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

PHY 121 Applied Physics I**3 2 4**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This algebra-based course introduces fundamental physical concepts as applied to industrial and service technology fields. Topics include systems of units, problem-solving methods, graphical analyses, vectors, motion, forces, Newton's laws of motion, work, energy, power, momentum, and properties of matter. Upon completion, students should be able to demonstrate an understanding of the principles studied as applied in industrial and service fields.

PHY 125 Health Sciences Physics**3 2 4**

Prerequisites: None

Corequisites: None

Available: Fall

This course introduces fundamental physical principles as they apply to health technologies. Topics include motion, force, work, power, simple machines, and other topics as required by the student's area of study. Upon completion, students should be able to demonstrate an understanding of the fundamental principles covered as they relate to practical applications in the health sciences.

PHY 131 Physics - Mechanics**3 2 4**

Prerequisites: MAT 121, MAT 161, MAT 171, or MAT 175

Corequisites: None

Available: As Needed

This algebra/trigonometry-based course introduces fundamental physical concepts as applied to engineering technology fields. Topics include systems of units, problem-solving methods, graphical analysis, vectors, motion, forces, Newton's laws of motion, work, energy, power, momentum, and properties of matter. Upon completion, students should be able to apply the principles studied to applications in engineering technology fields.

PHY 151 College Physics I**3 2 4**

Prerequisites: MAT 161 or MAT 171

Corequisites: None

Available: Fall, Spring, Summer

This course uses algebra- and trigonometry-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include units and measurement, vectors, linear kinematics and dynamics, energy, power, momentum, fluid mechanics, and heat. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

PHY 152 College Physics II**3 2 4**

Prerequisites: PHY 151

Corequisites: None

Available: Spring, Summer

This course uses algebra- and trigonometry-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include electrostatic forces, electric fields, electric potentials, direct-current circuits, magnetostatic forces, magnetic fields, electromagnetic induction, alternating-current circuits, and light. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

PHY 251 General Physics I*3 3 4**

Prerequisites: MAT 271

Corequisites: MAT 272

Available: Fall

This course uses calculus-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include units and measurement, vector operations, linear kinematics and dynamics, energy, power, momentum, rotational mechanics, periodic motion, fluid mechanics, and heat. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

PHY 252 General Physics II*3 3 4**

Prerequisites: MAT 272 and PHY 251

Corequisites: None

Available: Spring

This course uses calculus-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include electrostatic forces, electric fields, electric potentials, direct-current circuits, magnetostatic forces, magnetic fields, electromagnetic induction, alternating-current circuits, and light. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

Plastics***PLA 110 Introduction to Plastics****2 0 2**

Prerequisites: None

Corequisites: None

Available: Summer

This course introduces the plastics processing industry, including thermoplastics and thermosets. Emphasis is placed on the description, classification, and properties of common plastics and processes and current trends in the industry. Upon completion, students should be able to describe the differences between thermoplastics and thermosets and recognize the basics of the different plastic processes.

PLA 120 Injection Molding*2 3 3**

Prerequisites: None

Corequisites: None

Available: Fall

This course provides theory and processing experience with the injection molding process. Topics include machine type, molds, controls, machine-polymer part relationship, molding factors, troubleshooting, and molding problems/solutions. Upon completion, students should be able to demonstrate an understanding of machine setup and operation and be able to optimize common injection molding machines.

Political Science**POL 110 Introduction to Political Science****3 0 3**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course introduces basic political concepts used by governments and addresses a wide range of political issues. Topics include political theory, ideologies, legitimacy, and sovereignty in democratic and non-democratic systems. Upon completion, students should be able to discuss a variety of issues inherent in all political systems and draw logical conclusions in evaluating these systems. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral science.

POL 120 American Government**3 0 3**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course is a study of the origins, development, structure, and functions of American national government. Topics include the constitutional framework, federalism, the three branches of government including the bureaucracy, civil rights and liberties, political participation and behavior, and policy formation. Upon completion, students should be able to demonstrate an understanding of the basic concepts and participatory processes of the American political system. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral science.

POL 130 State & Local Government**3 0 3**

Prerequisites: None

Corequisites: None

This course includes state and local political institutions and practices in the context of American federalism. Emphasis is placed on procedural and policy differences as well as political issues in state, regional, and local governments of North Carolina. Upon completion, students should be able to identify and discuss various problems associated with intergovernmental politics and their effect on the community and the individual. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

POL 210 Comparative Government**3 0 3**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course provides a cross-national perspective on the government and politics of contemporary nations such as Great Britain, France, Germany, and Russia. Topics include each country's historical uniqueness, key institutions, attitudes and ideologies, patterns of interaction, and current political problems. Upon completion, students should be able to identify and compare various nations' governmental structures, processes, ideologies, and capacity to resolve major problems. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral science.

POL 220 International Relations 3 0 3
 Prerequisites: None
 Corequisites: None
 This course provides a study of the effects of ideologies, trade, armaments, and alliances on relations among nation-states. Emphasis is placed on regional and global cooperation and conflict, economic development, trade, non-governmental organizations, and international institutions such as the World Court and UN. Upon completion, students should be able to identify and discuss major international relationships, institutions, and problems. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

Psychology

PSY 118 Interpersonal Psychology 3 0 3
 Prerequisites: None
 Corequisites: None
 Available: As Needed
 This course introduces the basic principles of psychology as they relate to personal and professional development. Emphasis is placed on personality traits, communication/leadership styles, effective problem solving, and cultural diversity as they apply to personal and work environments. Upon completion, students should be able to demonstrate an understanding of these principles of psychology as they apply to personal and professional development. This course is intended for certificate, diploma, and A.A.S. degree programs.

PSY 150 General Psychology 3 0 3
 Prerequisites: None
 Corequisites: None
 Available: Fall, Spring, Summer
 This course provides an overview of the scientific study of human behavior. Topics include history, methodology, biopsychology, sensation, perception, learning, motivation, cognition, abnormal behavior, personality theory, social psychology, and other relevant topics. Upon completion, students should be able to demonstrate a basic knowledge of the science of psychology. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral science.

PSY 215 Positive Psychology 3 0 3
 Prerequisites: PSY 150
 Corequisites: None
 Available: Fall, Spring
 This course is an overview of the scientific study of human strengths. Topics include resilience, optimism, vital engagement (flow), positive relationships, creativity, wisdom, happiness, empathy, emotional intelligence, and other relevant topics. Upon completion, students should be able to demonstrate an understanding of the psychological factors relevant to enhancing well being. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

PSY 231 Forensic Psychology 3 0 3
 Prerequisites: PSY 150
 Corequisites: None
 Available: Fall, Spring
 This course introduces students to concepts which unite psychology and the legal system. Topics include defining competency, insanity, involuntary commitment as well as introducing forensic assessment techniques, such as interviewing process, specialized assessments, and collecting collateral information. Upon completion, students should be able to demonstrate knowledge in areas of forensic psychology: risk assessment, criminal competencies, insanity, psychopathology, and mentally disordered offenders. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective

PSY 237 Social Psychology 3 0 3
 Prerequisites: PSY 150 or SOC 210
 Corequisites: None
 Available: Fall, Spring
 This course introduces the study of individual behavior within social contexts. Topics include affiliation, attitude formation and change, conformity, altruism, aggression, attribution, interpersonal attraction, and group behavior. Upon completion, students should be able to demonstrate an understanding of the basic principles of social influences on behavior. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

PSY 239 Psychology of Personality 3 0 3
 Prerequisites: PSY 150
 Corequisites: None
 Available: Fall, Spring
 This course covers major personality theories and personality research methods. Topics include psychoanalytic, behavioristic, social learning, cognitive, humanistic, and trait theories including supporting research. Upon completion, students should be able to compare and contrast traditional and contemporary approaches to the understanding of individual differences in human behavior. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

PSY 241 Developmental Psychology 3 0 3
 Prerequisites: PSY 150
 Corequisites: None
 Available: Fall, Spring, Summer
 This course is a study of human growth and development. Emphasis is placed on major theories and perspectives as they relate to the physical, cognitive, and psychosocial aspects of development from conception to death. Upon completion, students should be able to demonstrate knowledge of development across the life span. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral science.

PSY 243 Child Psychology**3 0 3**

Prerequisites: PSY 150

Corequisites: None

Available: As Needed

This course provides an overview of physical, cognitive, and psychosocial development from conception through adolescence. Topics include theories and research, interaction of biological and environmental factors, language development, learning and cognitive processes, social relations, and moral development. Upon completion, students should be able to identify typical and atypical childhood behavior patterns as well as appropriate strategies for interacting with children. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PSY 246 Adolescent Psychology**3 0 3**

Prerequisites: PSY 150

Corequisites: None

This course provides an overview of the behavior patterns, life changes, and social issues that accompany the developmental stage of adolescence. Topics include developmental theories; physical, cognitive and psychosocial growth; transitions to young adulthood; and sociocultural factors that influence adolescent roles in home, school and community. Upon completion, students should be able to identify typical and atypical adolescent behavior patterns as well as appropriate strategies for interacting with adolescents. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

PSY 259 Human Sexuality**3 0 3**

Prerequisites: PSY 150

Corequisites: None

Available: As Needed

This course provides the biological, psychological, and sociocultural aspects of human sexuality and related research. Topics include reproductive biology, sexual and psychosexual development, sexual orientation, contraception, sexually transmitted diseases, sexual disorders, theories of sexuality, and related issues. Upon completion, students should be able to demonstrate an overall knowledge and understanding of human sexuality. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

PSY 271 Sports Psychology**3 0 3**

Prerequisites: PSY 150

Corequisites: None

Available: Fall, Spring

This course provides an overview of the field of sports and exercise psychology. Topics include concentration, goal setting, arousal level, exercise psychology, mental imagery, confidence, and other issues related to sport and exercise performance. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

PSY 275 Health Psychology**3 0 3**

Prerequisites: PSY 150

Corequisites: None

Available: Fall, Spring

This course covers the biopsychological dynamics of stress and the maintenance of good health. Topics include enhancing health and well-being, stress management, lifestyle choices and attitudes, the mind-body relationship, nutrition, exercise and fitness. Upon completion, students should be able to demonstrate an understanding of the psychological factors related to health and well-being. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

PSY 281 Abnormal Psychology**3 0 3**

Prerequisites: PSY 150

Corequisites: None

Available: Fall, Spring, Summer

This course provides an examination of the various psychological disorders, as well as theoretical, clinical, and experimental perspectives of the study of psychopathology. Emphasis is placed on terminology, classification, etiology, assessment, and treatment of the major disorders. Upon completion, students should be able to distinguish between normal and abnormal behavior patterns as well as demonstrate knowledge of etiology, symptoms, and therapeutic techniques. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral science.

Radiography**RAD 110 Radiography Intro & Patient Care****2 3 0 3**

Prerequisites: Enrollment in Radiography program

Corequisites: BIO 163, RAD 111, RAD 151, and RAD 182

Available: Fall

This course provides an overview of the radiography profession and student responsibilities. Emphasis is placed on basic principles of patient care, radiation protection, technical factors, and medical terminology. Upon completion, students should be able to demonstrate basic skills in these areas.

RAD 111 RAD Procedures I**3 3 0 4**

Prerequisites: Enrollment in the Radiography program

Corequisites: BIO 163, RAD 110, RAD 151, and RAD 182

Available: Fall

This course provides the knowledge and skills necessary to perform standard radiographic procedures. Emphasis is placed on radiography of the chest, abdomen, extremities, spine, and pelvis. Upon completion, students should be able to demonstrate competence in these areas.

RAD 112 RAD Procedures II**3 3 0 4**

Prerequisites: BIO 163, RAD 110, RAD 111, RAD 151, and RAD 182

Corequisites: RAD 121 and RAD 161

Available: Spring

This course provides the knowledge and skills necessary to perform standard radiographic procedures. Emphasis is placed on radiography of the skull, bony thorax, and gastrointestinal, biliary, and urinary systems. Upon completion, students should be able to demonstrate competence in these areas.

RAD 121 Radiographic Imaging I**2 3 0 3**

Prerequisites: RAD 110, RAD 111, and RAD 151

Corequisites: RAD 112 and RAD 161

Available: Spring

This course provides the principles of conventional film-screen radiography. Emphasis is placed on the factors that impact density, contrast, recorded detail, and distortion. Upon completion, students should be able to demonstrate an understanding of conventional film-screen radiographic imaging.

RAD 122 Radiographic Imaging II**1 3 0 2**

Prerequisites: RAD 112, RAD 121, and RAD 161

Corequisites: RAD 131 and RAD 171

Available: Summer

This course provides advanced principles of imaging including digital radiography. Emphasis is placed on the factors that impact brightness, contrast, recorded detail, and distortion. Upon completion, students should be able to demonstrate an understanding of advanced principles of imaging.

RAD 131 Radiographic Physics I**1 3 0 2**

Prerequisites: RAD 112, RAD 121, and RAD 161

Corequisites: RAD 122 and RAD 171

Available: Summer

This course introduces the principles of radiation characteristics and production. Emphasis is placed on imaging equipment. Upon completion, students should be able to demonstrate basic understanding of radiation characteristics and production

RAD 151 RAD Clinical Education I*0 0 6 2**

Prerequisites: Enrollment in the Radiography program

Corequisites: RAD 110, RAD 111, and RAD 182

Available: Fall

This course introduces patient management and basic radiographic procedures in the clinical setting. Emphasis is placed on mastering positioning of the chest and extremities, manipulating equipment and applying principles of ALARA. Upon completion, students should be able to demonstrate successful completion of clinical objectives. This course is designed to be taken in conjunction with RAD 182, RAD Clinical Elective.

RAD 161 RAD Clinical Education II*0 0 15 5**

Prerequisites: RAD 110, RAD 111, RAD 151, and RAD 182

Corequisites: RAD 112 and RAD 121

Available: Spring

This course provides additional experience in patient management and in more complex radiographic procedures. Emphasis is placed on mastering positioning of the spine, pelvis, head and neck, and thorax, and adapting procedures to meet patient variations. Upon completion, students should be able to demonstrate successful completion of clinical objectives.

RAD 171 RAD Clinical Education III*0 0 12 4**

Prerequisites: RAD 112, RAD 121, and RAD 161

Corequisites: RAD 122 and RAD 131

Available: Summer

This course provides experience in patient management specific to fluoroscopic and advanced radiographic procedures. Emphasis is placed on applying appropriate technical factors to all studies and mastering positioning of gastrointestinal and urological studies. Upon completion, students should be able to demonstrate successful completion of clinical objectives.

RAD 182 RAD Clinical Elective*0 0 6 2**

Prerequisites: Enrollment in the Radiography program

Corequisites: RAD 110, RAD 111, and RAD 151

Available: Fall

This course provides advanced knowledge of clinical applications. Emphasis is placed on enhancing clinical skills. Upon completion, students should be able to successfully complete the clinical course objectives. This course is designed to be taken in conjunction with RAD 151, RAD Clinical Education I.

RAD 211 RAD Procedures III**2 3 0 3**

Prerequisites: RAD 112 and RAD 122

Corequisites: RAD 231, RAD 241, and RAD 251

Available: Fall

This course provides the knowledge and skills necessary to perform standard and specialty radiographic procedures. Emphasis is placed on radiographic specialty procedures, sectional anatomy and advanced imaging. Upon completion, students should be able to demonstrate an understanding of these areas.

RAD 231 Radiographic Physics II**1 3 0 2**

Prerequisites: RAD 122, RAD 131, and RAD 171

Corequisites: RAD 211, RAD 241, and RAD 251

Available: Fall

This course provides advanced principles of radiation characteristics and production including digital imaging and Computed Tomography (CT). Emphasis is placed on imaging equipment. Upon completion, students should be able to demonstrate an understanding of radiation characteristics and production.

RAD 241 Radiobiology/Protection**2 0 0 2**

Prerequisites: RAD 122, RAD 131, and RAD 171

Corequisites: RAD 211, RAD 231, and RAD 251

Available: Fall

This course covers the principles of radiation protection and radiobiology. Topics include the effects of ionizing radiation on body tissues, protective measures for limiting exposure to the patient and personnel, and radiation monitoring devices. Upon completion, students should be able to demonstrate an understanding of the effects and uses of radiation in diagnostic radiology.

RAD 245 Image Analysis**1 3 0 2**

Prerequisites: RAD 211, RAD 231, RAD 241, and RAD 251

Corequisites: RAD 261

Available: Spring

This course provides an overview of image analysis and introduces methods of quality management. Topics include image evaluation, pathology, quality control and quality assurance. Upon completion, students should be able to demonstrate a basic knowledge of image analysis and quality management of images.

RAD 251 RAD Clinical Education IV*0 0 21 7**

Prerequisites: RAD 122, RAD 131, and RAD 171

Corequisites: RAD 211, RAD 231, and RAD 241

Available: Fall

This course provides the opportunity to continue mastering all basic radiographic procedures and to attain experience in advanced areas. Emphasis is placed on equipment operation, pathological recognition, pediatric and geriatric variations, and a further awareness of radiation protection requirements. Upon completion, students should be able to demonstrate successful completion of clinical objectives.

RAD 261 RAD Clinical Education V*0 0 21 7**

Prerequisites: RAD 211, RAD 231, RAD 241, and RAD 251

Corequisites: RAD 245 and RAD 271

Available: Spring

This course is designed to enhance expertise in all radiographic procedures, patient management, radiation protection, and image production and evaluation. Emphasis is placed on developing an autonomous approach to the diversity of clinical situations and successfully adapting to those procedures. Upon completion, students should be able to demonstrate successful completion of clinical objectives.

RAD 271 Radiography Capstone**0 3 0 1**

Prerequisites: RAD 211, RAD 231, RAD 241, RAD 251

Corequisites: RAD 245 and RAD 261

Available: Spring

This course provides an opportunity to exhibit problem-solving skills required for certification. Emphasis is placed on critical thinking and integration of didactic and clinical components. Upon completion, students should be able to demonstrate the knowledge required of any entry-level radiographer.

Real Estate Appraisal

REA 210 Site Value Cost Approach

1 0 1

Prerequisites: REA 219

Corequisites: None

Available: Spring

This course teaches the concepts and methodology used for determining site value and the valuation of residential improvements using the cost approach. Topics include methods in site valuation, replacement/reproduction cost, estimating accrued depreciation, concepts/definitions, and case studies. Upon completion, students should be able to understand the concepts and applications of site valuation and cost approaches for residential properties.

REA 212 Sales Comparison & Income

2 0 2

Prerequisites: REA 219

Corequisites: None

Available: Fall

This course provides the concepts and methodology used for determining value using the sales comparison and income approaches. Topics include the sales comparison approach, income approach, finance and cash equivalency, financial calculators, derivation of adjustments, gross rent multipliers, partial interests, and case studies. Upon completion, students should be able to understand the concepts and applications of the sales comparison and income approaches for residential properties.

REA 213 Appraisal Report Writing

1 0 1

Prerequisites: REA 219

Corequisites: None

Available: Fall

This course covers the production of a completed appraisal report. Topics include writing and reasoning skills, common writing problems, form reports, reporting options, Uniform Standards of Professional Appraisal Practice (USPAP) compliance, and case studies. Upon completion, students should be able to demonstrate the writing and reasoning skills necessary to develop a USPAP compliant appraisal report.

REA 214 Basic Appraisal Principle

2 0 2

Prerequisites: None

Corequisites: None

Available: Fall

This course introduces the student to the entire concept of real estate appraisal and the valuation process. Topics include real property concepts and characteristics, legal considerations, influences on real estate value, types of values, and economic principles. Upon completion, students should be able to present an overview of real estate markets and analysis, and ethics, applying it to appraisal theory and practice.

REA 215 Basic Appraisal Procedure

2 0 2

Prerequisites: REA 214

Corequisites: None

Available: Fall

This course introduces procedures used to develop an estimate of value and how the various principles of value relate to the application of such procedures. Topics include an overview of approaches to value, valuation procedures, property description and residential applications. Upon completion, students should be able to identify and utilize the approaches to value for residential properties.

REA 217 National USPAP

1 0 1

Prerequisites: REA 215

Corequisites: None

Available: Spring

This course introduces all aspects of the appraisers' conduct, ethics and competency. Topics include appraisal standards, reviews, reports, and the confidentiality provisions as set forth by the Appraisal Standards Board. Upon completion, students should be able to sit for the national Uniform Standards of Professional Appraisal Practice (USPAP) examination.

REA 219 Residential Market Analysis

1 0 1

Prerequisites: REA 217

Corequisites: None

Available: Spring

This course introduces students to the components of a market analysis and how to test for and analyze highest and best use. Topics include market fundamentals, characteristics and definitions, supply/demand analysis, use of market analysis, test constraints and application of the highest/best use, special considerations and case studies. Upon completion, students should be able to analyze residential markets and know the test constraints for highest and best use.

REA 220 Statistics and Finance

1 0 1

Prerequisites: REA 219

Corequisites: None

Available: Fall

This course covers statistical analysis and its application to real estate valuation. Topics include statistics, valuation models, automated valuation models, mass appraisal and real estate finance. Upon completion, students should be able to understand the use of statistics, valuation models, and real estate finance in the valuation of real estate.

REA 240 Advanced Residential Apps

1 0 1

Prerequisites: REA 219

Corequisites: None

Available: Spring

This course covers topics necessary for appraisers to deal with advanced residential valuation issues. Topics include complex property ownership and market conditions, deriving and supporting adjustments, residential market analysis and advanced case studies. Upon completion, students should be able to understand how to deal with complex issues in the valuation of residential properties.

REA 280 Appraisal Emerging Issues

2 0 2

Prerequisites: REA 219

Corequisites: None

Available: Spring

This course provides students with the latest technologies and strategies in the field of Real Estate Appraisal. Emphasis is placed on the evaluation of developing appraisal issues and presenting those findings to the class. Upon completion, students should be able to critically analyze emerging appraisal issues and concerns and establish informed opinions.

Reading

RED 080 Introduction to College Reading 3 2 4

Prerequisites: ENG 075 or RED 070 or placement

Corequisites: None

Available: Fall, Spring, Summer

This course introduces effective reading and inferential thinking skills in preparation for RED 090. Emphasis is placed on vocabulary, comprehension, and reading strategies. Upon completion, students should be able to determine main ideas and supporting details, recognize basic patterns of organization, draw conclusions, and understand vocabulary in context. This course does not satisfy the developmental reading prerequisite for ENG 111.

RED 090 Improved College Reading 3 2 4

Prerequisites: ENG 085 or RED 080 or placement

Corequisites: None

Available: Fall, Spring, Summer

This course is designed to improve reading and critical thinking skills. Topics include vocabulary enhancement; extracting implied meaning; analyzing author's purpose, tone, and style; and drawing conclusions and responding to written material. Upon completion, students should be able to comprehend and analyze college-level reading material. This course satisfies the developmental reading prerequisite for ENG 111.

Religion

REL 110 World Religions 3 0 3

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course introduces the world's major religious traditions. Topics include Primal religions, Hinduism, Buddhism, Islam, Judaism, and Christianity. Upon completion, students should be able to identify the origins, history, beliefs, and practices of the religions studied. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

REL 111 Eastern Religions 3 0 3

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course introduces the major Asian religious traditions. Topics include Hinduism, Buddhism, Taoism, Confucianism, and Shinto. Upon completion, students should be able to identify the origins, history, beliefs, and practices of the religions studied. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

REL 112 Western Religions 3 0 3

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course introduces the major western religious traditions. Topics include Zoroastrianism, Islam, Judaism, and Christianity. Upon completion, students should be able to identify the origins, history, beliefs, and practices of the religions studied. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

REL 211 Intro to Old Testament 3 0 3

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course is a survey of the literature of the Hebrews with readings from the law, prophets, and other writings. Emphasis is placed on the use of literary, historical, archeological, and cultural analysis. Upon completion, students should be able to use the tools of critical analysis to read and understand Old Testament literature. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

REL 212 Intro to New Testament 3 0 3

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course is a survey of the literature of first-century Christianity with readings from the gospels, Acts, and the Pauline and pastoral letters. Topics include the literary structure, audience, and religious perspective of the writings, as well as the historical and cultural context of the early Christian community. Upon completion, students should be able to use the tools of critical analysis to read and understand New Testament literature. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

Real Estate

*RLS 112 Broker Prelicensing 5 0 5

Prerequisites: None

Corequisites: None

Available: As Needed

This course provides basic instruction in real estate principles and practices. Topics include law, finance, brokerage, closing, valuation, management, taxation, mathematics, construction, land use, property insurance, and NC License Law and Commission Rules. Upon completion, students should be able to demonstrate basic knowledge and skills necessary for real estate sales.

RLS 113 Real Estate Mathematics 2 0 2

Prerequisites: None

Corequisites: None

Available: As Needed

This course provides basic instruction in business mathematics applicable to real estate situations. Topics include area computations, percentage of profit/loss, bookkeeping and accounting methods, appreciation and depreciation, financial calculations and interest yields, property valuation, insurance, taxes, and commissions. Upon completion, students should be able to demonstrate proficiency in applied real estate mathematics.

RLS 120 Real Estate Practice 2 0 2

Prerequisites: None

Corequisites: None

Available: As Needed

This course emphasizes knowledge and skills necessary for successful real estate practice. Topics will include land use controls, proper method of measuring improvements, commercial real estate, property management, selling techniques, and other aspects of the real estate industry. Upon completion, students should be able to demonstrate an understanding of real world real estate practice.

RLS 121 Broker Relationships*2 0 2**

Prerequisites: RLS 112

Corequisites: None

Available: As Needed

This course provides post-licensing instruction in broker relationships and responsibilities when working with residential sellers and buyers. Topics include agency relationships and duties, agency contracts and disclosure, and the practical aspects of working with residential buyers and sellers. Upon completion, students should be able to demonstrate knowledge and skills necessary to effectively work with residential buyers/sellers according to law and prevailing practices.

RLS 122 Contracts and Closing*2 0 2**

Prerequisites: RLS 112

Corequisites: None

Available: As Needed

This course provides post-licensing instruction in broker responsibilities relating to real estate sales contracts, contract procedures, the Real Estate Settlement Procedures Act and closings. Topics include contract law concepts, residential sales contract preparation and procedures, closing procedures and closing statement preparation. Upon completion, students should be able to handle sales contract negotiations, prepare residential sales contracts, assist sellers/buyers prepare for closing and verify closing statements.

RLS 123 Select Real Estate Issues*2 0 2**

Prerequisites: RLS 112

Corequisites: None

Available: As Needed

This course provides post-licensing instruction in real estate on selected topics of special importance to licensees. Topics include commercial real estate brokerage, residential property management, land use controls, loan fraud, license law, fair housing, establishing a brokerage firm, and manufactured/modular homes. Upon completion, students should be able to demonstrate knowledge of commercial real estate brokerage, residential property management, and the other topics addressed in this course.

Resort and Spa Management**RSM 110 Intro to Resort & Spa Ind****3 0 3**

Prerequisites: None

Corequisites: None

Available: As Needed

This course introduces the basics types of resort and spa settings. Topics include day, resort, destination, amenity, medical spas, and other related topics. Upon completion, student should be able to identify the differences and requirements of different types of resort and spa settings.

RSM 240 Resort and Spa Marketing**3 0 3**

Prerequisites: None

Corequisites: None

Available: As Needed

This course covers planning, organizing, directing, and analyzing the results of marketing programs in the resort and spa industry. Emphasis is placed on market segmentation and analysis, product and image development, sales planning, advertising, public relations, and collateral materials. Upon completion, students should be able to prepare a marketing plan applicable to the resort and spa industry.

RSM 245 Resort and Spa Law**3 0 3**

Prerequisites: None

Corequisites: None

Available: As Needed

This course is designed to build greater awareness and understanding of the various laws encountered in the resort and spa industry. Topics include federal and state regulations, historical and current practices, safety and security, risk management, loss prevention, torts, employment and contracts. Upon completion, students should be able to demonstrate an understanding of the legal system to prevent or minimize organizational liability.

Substance Abuse***SAB 110 Substance Abuse Overview****3 0 0 3**

Prerequisites: None

Corequisites: None

Available: Spring

This course provides an overview of the core concepts in substance abuse and dependence. Topics include the history of drug use/abuse, effects on societal members, treatment of addiction, and preventative measures. Upon completion, students should be able to demonstrate knowledge of the etiology of drug abuse, addiction, prevention, and treatment. This course has been approved by the North Carolina Substance Abuse Professional Practice Board (NCSAPPB) for training/education credit for substance abuse certification/recertification.

Information Systems Security**SEC 110 Security Concepts****3 0 3**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course introduces the concepts and issues related to securing information systems and the development of policies to implement information security controls. Topics include the historical view of networking and security, security issues, trends, security resources, and the role of policy, people, and processes in information security. Upon completion, students should be able to identify information security risks, create an information security policy, and identify processes to implement and enforce policy.

SEC 150 Secure Communications**2 2 3**

Prerequisites: SEC 110, NET 110 or NET 125

Corequisites: None

Available: Fall, Spring

This course provides an overview of current technologies used to provide secure transport of information across networks. Topics include data integrity through encryption, Virtual Private Networks, SSL, SSH, and IPSec. Upon completion, students should be able to implement secure data transmission technologies. This is a Cisco Networking Academy course.

SEC 160 Secure Admin I**2 2 3**

Prerequisites: SEC 110, NET 110 or NET 125

Corequisites: None

Available: Fall

This course provides an overview of security administration and fundamentals of designing security architectures. Topics include networking technologies, TCP/IP concepts, protocols, network traffic analysis, monitoring, and security best practices. Upon completion, students should be able to identify normal network traffic using network analysis tools and design basic security defenses.

SEC 210 Intrusion Detection**2 2 3**

Prerequisites: SEC 160

Corequisites: None

Available: Fall, Summer

This course introduces the student to intrusion detection methods in use today. Topics include the types of intrusion detection products, traffic analysis, and planning and placement of intrusion detection solutions. Upon completion, students should be able to plan and implement intrusion detection solutions for networks and host based systems.

SEC 220 Defense-In-Depth**2 2 3**

Prerequisites: None

Corequisites: SEC 160

Available: Spring

This course introduces students to the concepts of defense in-depth, a security industry best practice. Topics include firewalls, backup systems, redundant systems, disaster recovery, and incident handling. Upon completion, students should be able to plan effective information security defenses, backup systems, and disaster recovery procedures. This is a Cisco Networking Academy course.

SEC 289 Security Capstone Project**1 4 3**

Prerequisites: SEC 220

Corequisites: None

Available: Summer

This course provides the student the opportunity to put into practice all the skills learned to this point. Emphasis is placed on security policy, process planning, procedure definition, business continuity, and systems security architecture. Upon completion, students should be able to design and implement comprehensive information security architecture from the planning and design phase through implementation.

A.A.S. Social / Behavioral Sciences General Education Electives

The following courses are classified as Social/Behavioral Sciences for A.A.S. degree programs. A.A.S. students may take any course on this list.

ANTHROPOLOGY

ANT 210 General Anthropology

ANT 220 Cultural Anthropology

ANT 240 Archaeology

ECONOMICS

ECO 151 Survey of Economics

ECO 251 Principles of Microeconomics

ECO 252 Principles of Macroeconomics

GEOGRAPHY

GEO 111 World Regional Geography

GEO 112 Cultural Geography

HISTORY

HIS 111 World Civilizations I

HIS 112 World Civilizations II

HIS 115 Introduction to Global History

HIS 131 American History I

HIS 132 American History II

HIS 162 Women and History

HIS 221 African American History

HIS 226 The Civil War

HIS 227 Native American History

HIS 236 North Carolina History

POLITICAL SCIENCE

POL 110 Introduction to Political Science

POL 120 American Government

POL 130 State and Local Government

POL 210 Comparative Government

POL 220 International Relations

PSYCHOLOGY

PSY 110 Life Span Development

PSY 118 Interpersonal Psychology

PSY 150 General Psychology

PSY 231 Forensic Psychology

PSY 237 Social Psychology

PSY 239 Psychology of Personality

PSY 241 Developmental Psychology

PSY 246 Adolescent Psychology

PSY 271 Sports Psychology

PSY 275 Health Psychology

PSY 281 Abnormal Psychology

SOCIOLOGY

SOC 210 Introduction to Sociology

SOC 213 Sociology of the Family

SOC 215 Group Processes

SOC 220 Social Problems

SOC 225 Social Diversity

SOC 232 Social Context of Aging

SOC 234 Sociology of Gender

SOC 240 Social Psychology

SOC 254 Rural and Urban Sociology

Sociology

SOC 210 Introduction to Sociology

3 0 3

Prerequisites: None

Corequisites: None

Available: Fall, Spring, Summer

This course introduces the scientific study of human society, culture, and social interactions. Topics include socialization, research methods, diversity and inequality, cooperation and conflict, social change, social institutions, and organizations. Upon completion, students should be able to demonstrate knowledge of sociological concepts as they apply to the interplay among individuals, groups, and societies. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral science.

SOC 213 Sociology of the Family

3 0 3

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course covers the institution of the family and other intimate relationships. Emphasis is placed on mate selection, gender roles, sexuality, communication, power and conflict, parenthood, diverse life-styles, divorce and remarriage, and economic issues. Upon completion, students should be able to analyze the family as a social institution and the social forces which influence its development and change. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral science.

SOC 215 Group Processes

3 0 3

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course introduces group processes and dynamics. Emphasis is placed on small group experiences, roles and relationships within groups, communication, cooperation and conflict resolution, and managing diversity within and among groups. Upon completion, students should be able to demonstrate the knowledge and skills essential to analyze group interaction and to work effectively in a group context. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

SOC 220 Social Problems

3 0 3

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course provides an in-depth study of current social problems. Emphasis is placed on causes, consequences, and possible solutions to problems associated with families, schools, workplaces, communities, and the environment. Upon completion, students should be able to recognize, define, analyze, and propose solutions to these problems. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral science.

SOC 225 Social Diversity

3 0 3

Prerequisites: None

Corequisites: None

Available: Fall, Spring, Summer

This course provides a comparison of diverse roles, interests, opportunities, contributions, and experiences in social life. Topics include race, ethnicity, gender, sexual orientation, class, and religion. Upon completion, students should be able to analyze how cultural and ethnic differences evolve and how they affect personality development, values, and tolerance. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral science.

SOC 232 Social Context of Aging

3 0 3

Prerequisites: None

Corequisites: None

Available: As Needed

This course provides an overview of the social implications of the aging process. Emphasis is placed on the roles of older adults within families, work and economics, politics, religion, education, and health care. Upon completion, students should be able to identify and analyze changing perceptions, diverse lifestyles, and social and cultural realities of older adults. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

SOC 234 Sociology of Gender

3 0 3

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course examines contemporary roles in society with special emphasis on recent changes. Topics include sex role specialization, myths and stereotypes, gender issues related to family, work, and power. Upon completion, students should be able to analyze modern relationships between men and women. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

SOC 240 Social Psychology

3 0 3

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course examines the influence of culture and social groups on individual behavior and personality. Emphasis is placed on the process of socialization, communication, conformity, deviance, interpersonal attraction, intimacy, race and ethnicity, small group experiences, and social movements. Upon completion, students should be able to identify and analyze cultural and social forces that influence the individual in a society. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral science.

SOC 244 Sociology of Death & Dying

3 0 3

Prerequisites: None

Corequisites: None

Available: As Needed

This course presents sociological perspectives on death and dying. Emphasis is placed on analyzing the different death rates among various groups, races, and societies, as well as various types of death. Upon completion, students should be able to discuss the rituals of death, both cultural and religious, and examine current issues relating to death and dying. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

SOC 254 Rural and Urban Sociology**3 0 3**

Prerequisites: None

Corequisites: None

Available: As Needed

This course applies sociological concepts to a comparative study of major social issues facing contemporary rural and urban America. Emphasis is placed on growth and development patterns, ecological factors, social organizations, social controls, and processes of change. Upon completion, students should be able to illustrate the differences and similarities that exist between urban and rural environments as they resolve contemporary issues. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

Medical Sonography**SON 110 Introduction to Sonography****1 3 3 3**

Prerequisites: Enrollment in Sonography Program

Corequisites: SON 130

Available: Fall

This course provides an introduction to medical sonography. Topics include applications, sonographic terminology, history, patient care, ethics, and basic skills. Upon completion, students should be able to define professionalism and sonographic applications and perform basic patient care skills and preliminary scanning techniques.

SON 111 Sonographic Physics**3 3 0 4**

Prerequisites: CVS 163 or SON 110

Corequisites: None

Available: Spring

This course introduces ultrasound physical principles, bioeffects, and sonographic instrumentation. Topics include sound wave mechanics, transducers, sonographic equipment, Doppler physics, bioeffects, and safety. Upon completion, students should be able to demonstrate knowledge of sound wave mechanics, transducers, sonography equipment, the Doppler effect, bioeffects, and safety.

SON 120 SON Clinical Ed I**0 0 15 5**

Prerequisites: SON 110

Corequisites: None

Available: Spring

This course provides active participation in clinical sonography. Emphasis is placed on imaging, processing, and technically evaluating sonographic examinations. Upon completion, students should be able to image, process, and evaluate sonographic examinations.

SON 121 SON Clinical Ed II**0 0 15 5**

Prerequisites: SON 120

Corequisites: None

Available: Summer

This course provides continued active participation in clinical sonography. Emphasis is placed on imaging, processing, and technically evaluating sonographic examinations. Upon completion, students should be able to image, process, and evaluate sonographic examinations.

SON 130 Abdominal Sonography I**2 3 0 3**

Prerequisites: Enrollment in Sonography Program

Corequisites: SON 110

Available: Fall

This course introduces abdominal and small parts sonography. Emphasis is placed on the sonographic anatomy of the abdomen and small parts with correlated laboratory exercises. Upon completion, students should be able to recognize and acquire basic abdominal and small parts images.

SON 131 Abdominal Sonography II**1 3 0 2**

Prerequisites: SON 130

Corequisites: None

Available: Spring

This course covers abdominal and small parts pathology recognizable on sonograms. Emphasis is placed on abnormal sonograms of the abdomen and small parts with correlated sonographic cases. Upon completion, students should be able to recognize abnormal pathological processes in the abdomen and on small parts sonographic examinations.

SON 140 Gynecological Sonography**2 0 0 2**

Prerequisites: SON 110

Corequisites: None

Available: Spring

This course is designed to relate gynecological anatomy and pathology to sonography. Emphasis is placed on gynecological relational anatomy, endovaginal anatomy, and gynecological pathology. Upon completion, students should be able to recognize normal and abnormal gynecological sonograms.

SON 220 SON Clinical Ed III**0 0 24 8**

Prerequisites: SON 121

Corequisites: None

Available: Fall

This course provides continued active participation in clinical sonography. Emphasis is placed on imaging, processing, and technically evaluating sonographic examinations. Upon completion, students should be able to image, process, and evaluate sonographic examinations.

SON 221 SON Clinical Ed IV**0 0 24 8**

Prerequisites: SON 220

Corequisites: None

Available: Spring

This course provides continued active participation off campus in clinical sonography. Emphasis is placed on imaging, processing, and technically evaluating sonographic examinations. Upon completion, students should be able to image, process, and evaluate sonographic examinations.

SON 225 Case Studies**0 3 0 1**

Prerequisites: SON 110 or CVS 163

Corequisites: None

Available: Spring

This course offers the opportunity to present interesting cases found during clinical education. Emphasis is placed on presentation methods which integrate patient history, laboratory results, and sonographic findings with reference to current literature. Upon completion, students should be able to correlate information necessary for complete presentation of case studies.

SON 241 Obstetrical Sonography I**2 0 0 2**

Prerequisites: SON 110

Corequisites: None

Available: Summer

This course covers normal obstetrical sonography techniques, the normal fetal environment, and abnormal first trimester pregnancy states. Topics include gestational dating, fetal anatomy, uterine environment, and first trimester complications. Upon completion, students should be able to produce gestational sonograms which document age, evaluate the uterine environment, and recognize first trimester complications.

SON 242 Obstetrical Sonography II**2 0 0 2**

Prerequisites: SON 241

Corequisites: None

Available: Fall

This course covers second and third trimester obstetrical complications and fetal anomalies. Topics include abnormal fetal anatomy and physiology and complications in the uterine environment. Upon completion, students should be able to identify fetal anomalies, fetal distress states, and uterine pathologies.

SON 250 Vascular Sonography**1 3 0 2**

Prerequisites: SON 111

Corequisites: None

Available: Fall

This course provides an in-depth study of the anatomy and pathology of the vascular system. Topics include peripheral arterial, peripheral venous, and cerebrovascular disease testing. Upon completion, students should be able to identify normal vascular anatomy and recognize pathology of the vascular system.

SON 289 Sonographic Topics**2 0 0 2**

Prerequisites: SON 110 and SON 220

Corequisites: SON 221

Available: Spring

This course provides an overview of sonographic topics in preparation for certification examinations. Emphasis is placed on registry preparation. Upon completion, students should be able to demonstrate a comprehensive knowledge of sonography and be prepared for the registry examinations.

Spanish**SPA 110 Introduction to Spanish****2 0 2**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course provides an introduction to understanding, speaking, reading, and writing Spanish. Emphasis is placed on pronunciation, parts of speech, communicative phrases, culture, and skills for language acquisition. Upon completion, students should be able to identify and apply basic grammar concepts, display cultural awareness, and communicate in simple phrases in Spanish.

SPA 111 Elementary Spanish I**3 0 3**

Prerequisites: RED 090

Corequisites: SPA 181

Available: Fall, Spring, Summer

This course introduces the fundamental elements of the Spanish language within a cultural context. Emphasis is placed on the development of basic listening, speaking, reading, and writing skills. Lab practice is expected of students. Upon completion, students should be able to comprehend and respond with grammatical accuracy to spoken and written Spanish and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

SPA 112 Elementary Spanish II**3 0 3**

Prerequisites: SPA 111

Corequisites: SPA 182

Available: Fall, Spring, Summer

This course is a continuation of SPA 111 focusing on the fundamental elements of the Spanish language within a cultural context. Emphasis is placed on the progressive development of listening, speaking, reading, and writing skills. Lab practice is expected of students. Upon completion, students should be able to comprehend and respond with increasing proficiency to spoken and written Spanish and demonstrate further cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

SPA 120 Spanish for the Workplace**3 0 3**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course offers applied Spanish for the workplace to facilitate basic communication with people whose native language is Spanish. Emphasis is placed on oral communication and career-specific vocabulary that targets health, business, and/or public service professions. Upon completion, students should be able to communicate at a functional level with native speakers and demonstrate cultural sensitivity.

SPA 141 Culture and Civilization**3 0 3**

Prerequisites: None

Corequisites: None

Available: Fall, Spring

This course provides an opportunity to explore issues related to the Hispanic world. Topics include historical and current events, geography, and customs. Upon completion, students should be able to identify and discuss selected topics and cultural differences related to the Hispanic world. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

SPA 181 Spanish Lab I**0 2 1**

Prerequisites: None

Corequisites: SPA 111

Available: Fall, Spring, Summer

This course provides an opportunity to enhance acquisition of the fundamental elements of the Spanish language. Emphasis is placed on the progressive development of basic listening, speaking, reading, and writing skills through the use of various supplementary learning media and materials. Upon completion, students should be able to comprehend and respond with grammatical accuracy to spoken and written Spanish and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

SPA 182 Spanish Lab II**0 2 1**

Prerequisites: SPA 181

Corequisites: SPA 112

Available: Fall, Spring, Summer

This course provides an opportunity to enhance acquisition of the fundamental elements of the Spanish language. Emphasis is placed on the progressive development of basic listening, speaking, reading, and writing skills through the use of various supplementary learning media and materials. Upon completion, students should be able to comprehend and respond with increasing proficiency to spoken and written Spanish and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

SPA 211 Intermediate Spanish I**3 0 3**

Prerequisites: SPA 112

Corequisites: None

Available: Fall, Spring

This course provides a review and expansion of the essential skills of the Spanish language. Emphasis is placed on the study of authentic and representative literary and cultural texts. Lab practice is expected of students. Upon completion, students should be able to communicate effectively, accurately, and creatively about the past, present, and future. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

SPA 212 Intermediate Spanish II**3 0 3**

Prerequisites: SPA 211

Corequisites: None

Available: Spring

This course provides a continuation of SPA 211. Emphasis is placed on the continuing study of authentic and representative literary and cultural texts. Lab practice is expected of students. Upon completion, students should be able to communicate spontaneously and accurately with increasing complexity and sophistication. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

SPA 221 Spanish Conversation**3 0 3**

Prerequisites: SPA 212

Corequisites: None

Available: As Needed

This course provides an opportunity for intensive communication in spoken Spanish. Emphasis is placed on vocabulary acquisition and interactive communication through the discussion of media materials and authentic texts. Upon completion, students should be able to discuss selected topics, express ideas and opinions clearly, and engage in formal and informal conversations. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

Surveying**SRV 110 Surveying I****2 6 4**

Prerequisites: EGR 115

Corequisites: MAT 121, MAT 161, MAT 171 or MAT 175

Available: Spring

This course introduces the theory and practice of plane surveying. Topics include measuring distances and angles, differential and profile leveling, compass applications, topography, and mapping. Upon completion, students should be able to use/care for surveying instruments, demonstrate field note techniques, and apply the theory and practice of plane surveying.

SRV 111 Surveying II**2 6 4**

Prerequisites: SRV 110

Corequisites: None

Available: Fall, Summer

This course introduces route surveying and roadway planning and layout. Topics include simple, compound, reverse, spiral, and vertical curves; geometric design and layout; planning of cross-section and grade line; drainage; earthwork calculations; and mass diagrams. Upon completion, students should be able to calculate and lay out highway curves; prepare roadway plans, profiles, and sections; and perform slope staking.

SRV 210 Surveying III**2 6 4**

Prerequisites: SRV 110

Corequisites: None

Available: Fall, Spring

This course introduces boundary surveying, land partitioning, and calculations of areas. Topics include advanced traverses and adjustments, preparation of survey documents, and other related topics. Upon completion, students should be able to research, survey, and map a boundary.

SRV 220 Surveying Law**2 2 3**

Prerequisites: SRV 110

Corequisites: None

Available: Fall

This course introduces the law as related to the practice of surveying. Topics include surveyors' responsibilities, deed descriptions, title searches, eminent domain, easements, weight of evidence, riparian rights, and other related topics. Upon completion, students should be able to identify and apply the basic legal aspects associated with the practice of land surveying.

SRV 230 Subdivision Planning**1 6 3**

Prerequisites: SRV 111, SRV 210, and CIV 211

Corequisites: None

Available: Fall, Spring

This course covers the planning aspects of residential subdivisions from analysis of owner and municipal requirements to plat layout and design. Topics include municipal codes, lot sizing, roads, incidental drainage, esthetic considerations, and other related topics. Upon completion, students should be able to prepare a set of subdivision plans.

SRV 240 Topographic/Site Surveying**2 6 4**

Prerequisites: SRV 110

Corequisites: SRV 210

Available: Fall, Spring

This course covers topographic, site, and construction surveying. Topics include topographic mapping, earthwork, site planning, construction staking, and other related topics. Upon completion, students should be able to prepare topographic maps and site plans and locate and stake out construction projects.

SRV 250 Advanced Surveying**2 6 4**

Prerequisites: SRV 111

Corequisites: None

Available: Fall, Spring

This course covers advanced topics in surveying. Topics include photogrammetry, astronomical observations, coordinate systems, error theory, GPS, GIS, Public Land System, and other related topics. Upon completion, students should be able to apply advanced techniques to the solution of complex surveying problems.

SRV 260 Field and Office Practices**1 3 2**

Prerequisites: Completion of three semesters of the Surveying Technology program

Corequisites: None

Available: Fall

This course covers surveying project management, estimating, and responsibilities of surveying personnel. Topics include record-keeping, starting and operating a surveying business, contracts, regulations, taxes, personnel management, and professional ethics. Upon completion, students should be able to understand the requirements of operating a professional land surveying business.

Surgical Technology

SUR 110 Introduction to Surgical Technology 3 0 0 3

Prerequisites: Enrollment in the Surgical Technology program

Corequisites: BIO 163 and SUR 111

Available: Fall

This course provides a comprehensive study of the operative environment, professional roles, moral/legal/ethical responsibilities, and medical communications used in surgical technology. Topics include professional behaviors, medical terminology, interdepartmental/peer/relationships, operating room environment/safety, pharmacology, anesthesia, incision sites, physiology of wound healing and biomedical sciences. Upon completion, students should be able to apply theoretical knowledge of the course topics to the operative environment.

SUR 111 Periop Patient Care 5 6 0 7

Prerequisites: Enrollment in the Surgical Technology program

Corequisites: BIO 163 and SUR 110

Available: Fall

This course provides theoretical knowledge for the application of essential operative skills during the perioperative phase. Topics include surgical asepsis, sterilization/disinfection, and perioperative patient care. Upon completion, students should be able to demonstrate the principles and practices of aseptic technique, sterile attire, basic case preparation, and other relevant skills.

SUR 122 Surgical Procedures I 5 3 0 6

Prerequisites: SUR 110 and SUR 111

Corequisites: SUR 123 or STP 101

Available: Spring

This course provides an introduction to selected basic and intermediate surgical specialties that students are exposed to the first clinical rotation. Emphasis is placed on related surgical anatomy, pathology, and procedures that enhance theoretical knowledge of patient care, instrumentation, supplies and equipment. Upon completion, students should be able to correlate, integrate, and apply theoretical knowledge of the course topics to the clinical operative environment.

SUR 123 SUR Clinical Practice I 0 0 21 7

Prerequisites: BIO 163, or BIO 168 and BIO 169, SUR 110 and SUR 111

Corequisites: BIO 175 and SUR 122

Available: Spring

This course provides clinical experience with a variety of perioperative assignments to build upon skills learned in SUR 111. Emphasis is placed on the scrub and circulating roles of the surgical technologist including aseptic technique and basic case preparation for selected surgical procedures. Upon completion, students should be able to prepare, assist with, and dismantle basic surgical cases in both the scrub and circulating roles.

SUR 134 Surgical Procedures II 5 0 0 5

Prerequisites: SUR 123 or STP 101

Corequisites: SUR 135 and SUR 137

Available: Summer

This course provides a comprehensive study of intermediate and advanced surgical specialties that students are exposed to in the second clinical rotation. Emphasis is placed on related surgical anatomy, pathology, and procedures that enhance theoretical knowledge of patient care, instrumentation, supplies, and equipment. Upon completion, students should be able to correlate, integrate, and apply theoretical knowledge of the course topics to the clinical operative environment.

SUR 135 SUR Clinical Practice II

0 0 12 4

Prerequisites: SUR 122 and SUR 123

Corequisites: SUR 134 and SUR 137

Available: Summer

This course provides clinical experience with a variety of perioperative assignments to build skills required for complex perioperative patient care. Emphasis is placed on greater technical skills, critical thinking, speed, efficiency, and autonomy in the operative setting. Upon completion, students should be able to function in the role of an entry-level surgical technologist.

SUR 137 Prof Success Prep

1 0 0 1

Prerequisites: SUR 122 and SUR 123

Corequisites: SUR 134 and SUR 135

Available: Summer

This course provides job-seeking skills and an overview of theoretical knowledge in preparation for certification. Topics include test-taking strategies, resume preparation, and interviewing techniques. Upon completion, students should be able to prepare a resume, demonstrate appropriate interview techniques, and identify strengths and weaknesses in preparation for certification.

SUR 210 Adv SUR Clinical Practice

0 0 6 2

Prerequisites: SUR 137

Corequisites: None

Available: Spring

This course is designed to provide individualized experience in advanced practice, education, circulating, and managerial skills. Emphasis is placed on developing and demonstrating proficiency in skills necessary for advanced practice. Upon completion, students should be able to assume leadership roles in a chosen specialty area. Current national certification in surgical technology from the NBSTSA, is required by students enrolling in this course.

SUR 211 Adv Theoretical Concepts

2 0 0 2

Prerequisites: SUR 137

Corequisites: None

Available: Fall

This course covers theoretical knowledge required for extension of the surgical technologist role. Emphasis is placed on advanced practice in complex surgical specialties, educational methodologies, and managerial skills. Upon completion, students should be able to assume leadership roles in a chosen specialty area.

Sustainability Technologies

SST 110 Intro to Sustainability

3 0 3

Prerequisites: None

Corequisites: None

Available: Fall

This course introduces sustainability issues and individual contributions toward environmental sustainability. Topics include management processes needed to maximize renewable/non-renewable energy resources, economics of sustainability, and reduction of environmental impacts. Upon completion, students should be able to discuss sustainability practices and demonstrate an understanding of their effectiveness and impacts.

SST 120 Energy Use Analysis**2 2 3**

Prerequisites: MAT 070

Corequisites: None

Available: As Needed

This course introduces the principles of analyzing energy use, energy auditing tools and techniques, conservation techniques, and calculating energy savings. Topics include building system control theory, calibrating digital controls, energy loss calculations, and applicable conservation techniques. Upon completion, students should be able to demonstrate an understanding of energy use, audits, and controls in the analysis of energy consumption.

SST 130 Modeling Renewable Energy**2 2 3**

Prerequisites: EGR 125, CIS 111, CIS 113, or CIS 110

Corequisites: None

Available: Spring, Fall

This course introduces software and other technologies used for modeling renewable energy systems. Topics include renewable energy modeling software applications, data analysis, renewable energy sources, and cost of renewable energy systems. Upon completion, students should be able to use appropriate technology to model the effectiveness of renewable energy systems.

SST 140 Green Building Concepts**1 3 2**

Prerequisites: None

Corequisites: None

Available: Summer

This course introduces green building design, LEED® (Leadership in Energy and Environmental Design) and comparable certifications, and their significance in modern building construction. Topics include LEED certification or similar rating systems, energy efficiency, indoor environmental quality, and sustainable building materials. Upon completion, students should be able to incorporate ecological awareness and sustainable principles within the context of design and construction.

SST 210 Issues in Sustainability**3 0 3**

Prerequisites: SST 110

Corequisites: None

Available: Spring

This course introduces the long-term impacts and difficulties of applying sustainability concepts in an organization, business, or society. Topics include the application of sustainable technologies and the analysis of affordability, efficiencies, recycling, and small and large-scale design. Upon completion, students should be able to recognize the possible limitations of sustainable technologies and be prepared to reconcile such conflicts.

Social Work***SWK 110 Introduction to Social Work****3 0 0 3**

Prerequisites: None

Corequisites: None

Available: Spring

This course examines the historical development, values, orientation, and professional standards of social work and focuses on the terminology and broader systems of social welfare. Emphasis is placed on the various fields of practice including those agencies whose primary function is financial assistance, corrections, mental health, and protective services. Upon completion, students should be able to demonstrate an understanding of the knowledge, values, and skills of the social work professional. This course has been approved by the North Carolina Substance Abuse Professional Practice Board (NCSAPPB) for training/education credit for substance abuse certification/recertification.

Veterinary Medical Technology**VET 110 Animal Breeds and Husbandry****2 2 0 3**

Prerequisites: Enrollment in the VMT program

Corequisites: None

Available: Fall

This course provides a study of the individual breed characteristics and management techniques of the canine, feline, equine, bovine, porcine, ovine, caprine, and laboratory animals. Topics include physiological data, animal health management, and basic care and handling of animals. Upon completion, students should be able to identify breeds of domestic and laboratory animals, list physiological data, and outline basic care, handling, and management techniques.

VET 114 Introduction to Veterinary Medical Tech**1 0 0 1**

Prerequisites: Enrollment in the VMT program

Corequisites: None

Available: Fall

This course introduces the standard operating procedures and responsibilities of veterinary technology departments, common zoonotic diseases, safety and ethical issues, and USDA/DEA/OSHA regulations/compliance. Emphasis is placed on standard operating procedures, zoonotic diseases, safety and ethical issues, and the importance of USDA/DEA/OSHA regulations and compliance. Upon completion, students should be able to perform duties assigned in veterinary medical technology, recognize potential zoonotic diseases, and establish safety protocols/regulatory compliance.

VET 120 Veterinary Anatomy and Physiology**3 3 0 4**

Prerequisites: Enrollment in the VMT program

Corequisites: None

Available: Fall

This course covers the structure and function of the animal body with emphasis on the similarities and differences among domestic animals. Emphasis is placed on the structure and function of the major physiological systems of domestic, laboratory, and zoo animals. Upon completion, students should be able to identify relevant anatomical structure and describe basic physiological processes for the major body systems.

VET 121 Veterinary Medical Terminology**3 0 0 3**

Prerequisites: Enrollment in the VMT program

Corequisites: None

Available: Fall

This course covers the basic medical terminology required for veterinary technicians. Topics include the pronunciation, spelling and definition of word parts and vocabulary terms unique to the anatomy, clinical pathology, and treatment of animals. Upon completion, students should be able to demonstrate knowledge and understanding of basic medical terms as they relate to veterinary medicine. It is highly recommended that this course be taken in the first semester of the Veterinary Technology program.

VET 123 Veterinary Parasitology**2 3 0 3**

Prerequisites: VET 110, VET 120 and VET 121

Corequisites: None

Available: Spring

This course covers the common internal and external parasites of companion animals, livestock, selected zoo animals, and wild animals. Emphasis is placed on laboratory diagnosis of the most common forms of the parasite through fecal, urine, skin, and blood exams. Upon completion, students should be able to identify common parasites and discuss life-cycles, treatment and prevention strategies, and public health aspects of veterinary parasitology.

VET 125 Veterinary Diseases I 2 0 0 2 Prerequisites: VET 110, VET 120 and VET 121 Corequisites: None Available: Spring This course introduces basic immunology, fundamentals of disease processes including inflammation, and common infectious diseases of animals and their prevention through immunization. Topics include fundamental disease processes, principles of medical therapy, immunologic processes, infections and zoonotic diseases of domestic animals, and prevention of disease. Upon completion, students should be able to describe basic disease and immunological processes, recognize infections and zoonotic diseases, and discuss prevention strategies.	VET 211 Veterinary Lab Techniques II 2 3 0 3 Prerequisites: VET 131 Corequisites: VET 213 Available: Fall This course covers advanced hematology, serology, immunology, and clinical chemistry. Topics include advanced hematologic, serologic, and immunologic test procedures, manual and automated clinical chemistry procedures, laboratory safety, and quality control. Upon completion, students should be able to collect, prepare, and analyze serum and plasma samples and outline quality control and safety procedures.
VET 126 Veterinary Diseases II 1 3 0 2 Prerequisites: VET 125 Corequisites: VET 211, VET 213, and VET 215 Available: Fall This course includes the study of basic disease processes, fundamentals of pathology and other selected topics of veterinary medicine. Topics include histopathology, pathologic changes associated with common diseases of animals, necropsy procedures, specimen handling, and other selected material. Upon completion, students should be able to describe basic pathological changes associated with disease, recognize histopathologic changes, and properly perform collection and submission of necropsy specimens.	VET 212 Veterinary Lab Techniques III 2 3 0 3 Prerequisites: VET 211 Corequisites: VET 214 Available: Spring This course introduces the basic principles of microbiology, histology and cytology. Emphasis is placed on collection of microbiological samples for culture and sensitivity and collection and preparation of samples for histological and cytological examination. Upon completion, students should be able to perform microbiological culture and sensitivity and evaluate cytology and histology specimens.
VET 131 Veterinary Lab Techniques I 2 3 0 3 Prerequisites: VET 110, VET 114, VET 123 and VET 125 Corequisites: VET 133 Available: Summer This course includes the fundamental study of hematology, hemostasis, and urinalysis. Emphasis is placed on basic hematology and urinalysis techniques, manual skill development, instrumentation, quality control, and applications to veterinary science. Upon completion, students should be able to perform manual and automated CBCs, hemostatic assays, and complete urinalyses and maintain laboratory equipment and quality control.	VET 213 Veterinary Clinical Practice II 1 9 0 4 Prerequisites: VET 133 Corequisites: VET 126, VET 211, and VET 215 Available: Fall This course covers basic radiography, anesthesia techniques, dentistry, sample collection and handling, surgical assistance and instrumentation, sterile techniques, and patient record keeping. Topics include basic radiology, injectable and gas anesthesia, dentistry, instrument identification and care, sterile surgical technique, specimen collection and processing, and maintenance of patient records. Upon completion, students should be able to take and process radiographs, administer and monitor anesthesia, assist in surgical procedures, collect specimens, and maintain surgical records.
VET 133 Veterinary Clinical Practices I 2 3 0 3 Prerequisites: VET 110, VET 114, VET 123 and VET 125 Corequisites: VET 131, VET 120 Available: Summer This course introduces basic practices and techniques of the veterinary clinic and biomedical research fields for dogs, cats, and laboratory animals. Topics include physical exam, husbandry, housing, sanitation, restraint and handling, administration of medications, anesthesia and euthanasia techniques, grooming and dentistry. Upon completion, students should be able to properly restrain, medicate, examine, groom, and maintain each of the species studied.	VET 214 Veterinary Clinical Practice III 1 9 0 4 Prerequisites: VET 126, VET 211, VET 213, VET 215 Corequisites: VET 212 Available: Spring The course covers advanced anesthetic techniques, special radiographic techniques, advanced dentistry, sample collection and processing, bandaging, and emergency and critical care procedures. Topics include induction and maintenance of anesthesia, radiographic contrast studies, advanced dentistry, external coaptation, intensive care procedures, and advanced sample collection techniques. Upon completion, students should be able to demonstrate proficiency in sample collection, radiology, anesthesia, critical care and emergency procedures, and dentistry.
VET 137 Veterinary Office Practices 1 2 0 2 Prerequisites: Enrollment in the VMT program Corequisites: None Available: Summer This course is designed to teach basic administrative techniques, client communication skills, and regulations pertaining to veterinary medicine. Topics include record keeping, telephone techniques, professional liability, office procedures, state and national regulatory laws, human relations, and animal welfare. Upon completion, students should be able to demonstrate effective communication techniques, office procedures, and knowledge of regulatory laws and issues relating to animal welfare.	VET 215 Veterinary Pharmacology 3 0 0 3 Prerequisites: CHM 130 and CHM 130A, or CHM 151, VET 125 Corequisites: VET 213 Available: Fall This course introduces drugs and other substances utilized in veterinary medicine. Emphasis is placed on drug classification and methods of action, administration, effects and side effects, storing and handling of drugs and dosage calculations. Upon completion, students should be able to properly calculate and administer medications, recognize adverse reactions, and maintain pharmaceutical inventory and administration records.

VET 217 Large Animal Clinical Practice**2 3 0 3**

Prerequisites: VET 110, VET 120, and VET 125

Corequisites: VET 214, VET 213

Available: Spring

This course covers the topics relevant to the medical and surgical techniques for the common domestic large animal species. Topics include physical exam, restraint, sample collection, bandaging, emergency treatment, surgical and obstetrical procedures and instruments, herd health, and lameness topics. Upon completion, students should be able to safely perform restraint, examination, and sample collection; assist surgical, obstetrical, and emergency procedures; and discuss herd health.

VET 237 Animal Nutrition**3 0 0 3**

Prerequisites: CHM 130 and CHM 130A

Corequisites: None

Available: Spring

This course covers the principles of nutrition and their application to feeding practices of domestic, farm, and companion animals. Topics include basic nutrients and nutritional needs of individual species, proximate analysis, interpretation of food and feed labels, types of animal foods, and ration formulation. Upon completion, students should be able to select appropriate diets for animals in various stages of health and disease, analyze nutrition labels, and identify foods.

Web Technologies**WEB 110 Internet/Web Fundamentals****2 2 3**

Prerequisites: None

Corequisites: None

Available: Fall

This course introduces basic markup language, various navigational tools and services of the Internet. Topics include creating web pages, using Internet protocols, search engines, file compression/decompression, FTP, E-mail, listservers, and other related topics. Upon completion, students should be able to deploy a web-site created with basic markup language, retrieve/decompress files, e-mail, FTP, and utilize other Internet tools.

WEB 115 Web Markup and Scripting**2 2 3**

Prerequisites: Basic computer literacy including file management skills is necessary (if you do not have basic skills, CTS 060 will give you the foundation for this course).

Corequisites: None

Available: Fall, Spring

This course introduces client-side Internet programming using the current W3C-recommended presentation markup language and supporting elements. Topics include site management and development, markup elements, stylesheets, validation, accessibility, standards, browsers, and basic JavaScripting. Upon completion, students should be able to hand-code web pages with various media elements according to current markup standards and integrate them into websites.

WEB 120 Intro Internet Multimedia**2 2 3**

Prerequisites: WEB 115

Corequisites: None

Available: Spring

This is the first of two courses covering the creation of Internet Multimedia. Topics include multimedia file types, file type conversion, acquisition of digital audio/video, streaming audio/video and graphics animation plug-in programs and other related topics. Upon completion, students should be able to create Internet multimedia presentations utilizing a variety of methods and applications.

WEB 140 Web Development Tools**2 2 3**

Prerequisites: CIS 110

Corequisites: None

Available: Fall

This course provides an introduction to web development software suites. Topics include the creation of web sites and applets using web development software. Upon completion, students should be able to create entire web sites and supporting applets.

WEB 182 PHP Programming**2 2 3**

Prerequisites: CIS 115 and WEB 115

Corequisites: None

Available: Fall, Spring

This course introduces students to the server-side, HTML-embedded scripting language PHP. Emphasis is placed on programming techniques required to create dynamic web pages using PHP scripting language features. Upon completion, students should be able to design, code, test, debug, and create a dynamic web site using the PHP scripting language.

WEB 186 XML Technology**2 2 3**

Prerequisites: CIS 115 and DBA 110

Corequisites: None

Available: Spring

This course is designed to introduce student to XML and related internet technologies. Topics include extendible style language (XSL), document object model (DOM), extendible style sheet language transformation (XSLT), and simple object access protocol (SOAP). Upon completion, students should be able to create a complex XML document.

WEB 210 Web Design**2 2 3**

Prerequisites: WEB 115

Corequisites: None

Available: Fall, Spring

This course introduces intermediate to advanced web page design techniques. Topics include effective use of graphics, fonts, colors, navigation tools, advanced markup language elements, as well as a study of bad design techniques. Upon completion, students should be able to employ advanced design techniques to create high impact and highly functional web pages.

WEB 215 Adv Markup Scripting**2 2 3**

Prerequisites: DBA 120, WEB 115 and WEB 182

Corequisites: None

Available: Fall

This course covers advanced programming skills required to design Internet applications. Emphasis is placed on programming techniques required to support network applications. Upon completion, students should be able to design, code, debug, and document network-based programming solutions to various real-world problems using an appropriate programming language.

WEB 230 Implementing Web Serv**2 2 3**

Prerequisites: NET 110 or NET 125 and NOS 120

Corequisites: None

Available: Fall

This course covers website and web server architecture. Topics include installation, configuration, administration, and security of web servers, services and sites. Upon completion, students should be able to effectively manage the web services deployment lifecycle according to industry standards.

WEB 250 Database Driven Websites**2 2 3**

Prerequisites: DBA 110, DBA 120, WEB 182 and WEB 210

Corequisites: None

Available: Fall

This course introduces dynamic (database-driven) website development. Topics include the use of basic database CRUD statements (create, read, update and delete) incorporated into web applications, as well as in software architecture principles. Upon completion, students should be able to design and develop database driven web applications according to industry standards.

WEB 289 Internet Technologies Project*1 4 3**

Prerequisites: WEB 110, WEB 140, WEB 230 and WEB 250

Corequisites: None

Available: Spring

This course provides an opportunity to complete a significant Web technologies project from the design phase through implementation with minimal instructor support. Emphasis is placed on project definition, documentation, installation, testing, presentation, and training. Upon completion, students should be able to complete an Internet project from the definition phase through implementation.

Welding**WLD 110 Cutting Processes****1 3 2**

Prerequisites: Admission to Welding Program

Corequisites: None

Available: Fall

This course introduces oxy-fuel and plasma-arc cutting systems. Topics include safety, proper equipment setup, and operation of oxy-fuel and plasma-arc cutting equipment with emphasis on straight line, curve and bevel cutting. Upon completion, students should be able to oxy-fuel and plasma-arc cut metals of varying thickness.

WLD 111 Oxy-Fuel Welding**1 3 2**

Prerequisites: None

Corequisites: None

Available: Spring

This course introduces the oxy-fuel welding process. Topics include safety, proper equipment setup, and operation of oxy-fuel welding equipment with emphasis on bead application, profile, and discontinuities. Upon completion, students should be able to oxy-fuel weld fillets and grooves on plate and pipe in various positions.

WLD 112 Basic Welding Processes**1 3 2**

Prerequisites: None

Corequisites: None

Available: Spring

This course introduces basic welding and cutting. Emphasis is placed on beads applied with gases, mild steel fillers, and electrodes and the capillary action of solder. Upon completion, students should be able to set up welding and oxy-fuel equipment and perform welding, brazing, and soldering processes.

WLD 113 Soldering and Brazing**1 2 2**

Prerequisites: None

Corequisites: None

Available: Spring

This course covers procedures for cutting, soldering and brazing of pipe and tubing. Topics includes safety, proper equipment setup, and operation of soldering and brazing equipment. Upon completion, students should be able to solder and braze pipe, tubing, and fittings in various positions.

WLD 115 SMAW (Stick) Plate**2 9 5**

Prerequisites: None

Corequisites: None

Available: Fall

This course introduces the shielded metal arc (stick) welding process. Emphasis is placed on padding, fillet, and groove welds in various positions with SMAW electrodes. Upon completion, students should be able to perform SMAW fillet and groove welds on carbon plate with prescribed electrodes.

WLD 116 SMAW (Stick) Plate/Pipe**1 9 4**

Prerequisites: WLD 115

Corequisites: None

Available: Spring

This course is designed to enhance skills with the shielded metal arc (stick) welding process. Emphasis is placed on advancing manipulative skills with SMAW electrodes on varying joint geometry. Upon completion, students should be able to perform groove welds on carbon steel with prescribed electrodes in the flat, horizontal, vertical, and overhead positions.

WLD 121 GMAW (MIG) FCAW/Plate**2 6 4**

Prerequisites: None

Corequisites: None

Available: Fall

This course introduces metal arc welding and flux core arc welding processes. Topics include equipment setup and fillet and groove welds with emphasis on application of GMAW and FCAW electrodes on carbon steel plate. Upon completion, students should be able to perform fillet welds on carbon steel with prescribed electrodes in the flat, horizontal, and overhead positions.

WLD 122 GMAW (MIG) Plate/Pipe**1 6 3**

Prerequisites: WLD 121

Corequisites: None

Available: Spring

This course is designed to enhance skills with the gas metal arc (MIG) welding process. Emphasis is placed on advancing skills with the GMAW process making groove welds on carbon steel plate and pipe in various positions. Upon completion, students should be able to perform groove welds with prescribed electrodes on various joint geometry.

WLD 131 GTAW (TIG) Plate**2 6 4**

Prerequisites: None

Corequisites: None

Available: Summer

This course introduces the gas tungsten arc (TIG) welding process. Topics include correct selection of tungsten, polarity, gas, and proper filler rod with emphasis placed on safety, equipment setup, and welding techniques. Upon completion, students should be able to perform GTAW fillet and groove welds with various electrodes and filler materials.

WLD 132 GTAW (TIG) Plate/Pipe**1 6 3**

Prerequisites: WLD 131

Corequisites: None

Available: Fall

This course is designed to enhance skills with the gas tungsten arc (TIG) welding process. Topics include setup, joint preparation, and electrode selection with emphasis on manipulative skills in all welding positions on plate and pipe. Upon completion, students should be able to perform GTAW welds with prescribed electrodes and filler materials on various joint geometry.

WLD 141 Symbols and Specifications**2 2 3**

Prerequisites: None

Corequisites: None

Available: Spring

This course introduces the basic symbols and specifications used in welding. Emphasis is placed on interpretation of lines, notes, welding symbols, and specifications. Upon completion, students should be able to read and interpret symbols and specifications commonly used in welding.

WLD 143 Welding Metallurgy**1 2 2**

Prerequisites: WLD 115, WLD 121 or WLD 131

Corequisites: None

Available: Summer

This course introduces the concepts of welding metallurgy. Emphasis is placed on basic metallurgy, effects of welding on various metals, and metal classification and identification. Upon completion, students should be able to understand basic metallurgy, materials designation, and classification systems used in welding.

WLD 151 Fabrication I**2 6 4**

Prerequisites: WLD 110, WLD 115, WLD 116, and WLD 131

Corequisites: None

Available: Fall

This course introduces the basic principles of fabrication. Emphasis is placed on safety, measurement, layout techniques, and the use of fabrication tools and equipment. Upon completion, students should be able to perform layout activities and operate various fabrication and material handling equipment.

WLD 212 Inert Gas Welding**1 3 2**

Prerequisites: None

Corequisites: None

Available: As Needed

This course introduces inert gas-shielded welding methods (MIG/TIG). Topics include correct selection of consumable and non-consumable electrodes, equipment setup, safety, and welding techniques. Upon completion, students should be able to perform inert gas welding in flat, horizontal, and overhead positions.

WLD 215 SMAW (Stick) Pipe**1 9 4**

Prerequisites: WLD 115 or WLD 116

Corequisites: None

Available: Summer

This course covers the knowledge and skills that apply to welding pipe. Topics include pipe positions, joint geometry, and preparation with emphasis placed on bead application, profile, and discontinuities. Upon completion, students should be able to perform SMAW welds to applicable codes on carbon steel pipe with prescribed electrodes in various positions.

WLD 231 GTAW (TIG) Pipe**1 6 3**

Prerequisites: WLD 132

Corequisites: None

Available: Spring

This course covers gas tungsten arc welding on pipe. Topics include joint preparation and fit up with emphasis placed on safety, GTAW welding technique, bead application, and joint geometry. Upon completion, students should be able to perform GTAW welds to applicable codes on pipe with prescribed electrodes and filler materials in various pipe positions.

WLD 251 Fabrication II**1 6 3**

Prerequisites: WLD 151

Corequisites: None

Available: Spring

This course covers advanced fabrication skills. Topics include advanced layout and assembly methods with emphasis on the safe and correct use of fabrication tools and equipment. Upon completion, students should be able to fabricate projects from working drawings.

WLD 261 Certification Practices**1 3 2**

Prerequisites: WLD 115, WLD 121, and WLD 131

Corequisites: None

Available: Spring

This course covers certification requirements for industrial welding processes. Topics include techniques and certification requirements for pre-qualified joint geometry. Upon completion, students should be able to perform welds on carbon steel plate and/or pipe according to applicable codes.

WLD 262 Inspection and Testing**2 2 3**

Prerequisites: None

Corequisites: None

Available: Summer

This course introduces destructive and nondestructive testing methods. Emphasis is placed on safety, types and methods of testing, and the use of testing equipment and materials. Upon completion, students should be able to understand and/or perform a variety of destructive and nondestructive testing processes.

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B.F.A., Appalachian State University

Jimmie Cochran Pratt Foundation Development Officer
A.A.S., Haywood Community College; B.S., Mars Hill College;
M.P.A., Western Carolina University; Certificate, Duke University
Center for Nonprofit Management

Erin Cameron Administrative Assistant,
College Relations/Foundation
B.A., Ohio University

Linda Mack Duplicating/Mail Clerk

April S. Sides Graphic/Web Designer I
B.A., University of North Carolina at Asheville

DIVISIONS

ACADEMIC SUCCESS

Melissa P. Quinley (2007) Dean, Academic Success
B.A., University of Pacific; M.Ed., University of Georgia;
Ed.S., Appalachian State University

Phyllis M. Boone Secretary, Learning Resources
A.A.S., Asheville-Buncombe Technical Community College

Angela R. Calhoun Library Assistant
A.A.S., Asheville-Buncombe Technical Community College

Susan E. Donato Library Assistant
B.S., Kent State University

Carol J. Fleming Director, Library Services
B.A., Oswego State College; M.L.S., Appalachian State University

Elizabeth F. Hester (1994) Instructor, Developmental Studies
B.A., Salem College; M.A., Appalachian State University

Sharon Killian (1992) Coordinator/Instructor,
Academic Learning Center
B.A., University of North Carolina at Greensboro;
Development Education Certificate, North Carolina State University

Ronald P. Layne (2002) Instructor, Developmental Studies
A.S., Asheville-Buncombe Technical Community College; B.A., University of
North Carolina at Asheville; M.A., Western Carolina University

Sue Heath Olesiuk (1998) Instructor, Developmental
Studies/Coordinator, ACA
B.A., M.A.T., University of North Carolina at Chapel Hill

M. Susan Paterson (1992) Instructor, Developmental Studies
B.A., University of North Carolina at Chapel Hill;
M.A.Ed., Western Carolina University

Kathleen Ross (1996) Instructor, Developmental Studies
B.A., Michigan State University; M.A.Ed., Western Carolina University

David Van Kleeck (2009) Library Technical Assistant
B.A., Florida State University

Tammy A. Ward Library Assistant
A.A.S., Asheville-Buncombe Technical Community College

Llyod Weinberg Coordinator, Service Learning

Jonathan Wise (2007) Instructor, Developmental Studies
B.A., University of North Carolina at Asheville;
M.A.Ed., Western Carolina University

ALLIED HEALTH AND PUBLIC SERVICE EDUCATION

Vacant Dean, Allied Health and Public Service Education

Kathy Skye Myrick (1991) Associate Dean,
Emergency Services Academy
B.S.B.A./B.S., Appalachian State University; M.S., Western Carolina University;
further graduate study: Duke University

Debbie Anders, R.N., NR.EMT-P (2009) Instructor, Nursing
B.S.N., Medical University of South Carolina; MSN, East Carolina University

J. Tisha Anderson, C.D.A. (1999) Instructor, Allied Dental Programs
Diploma, Asheville-Buncombe Technical Community College
B.S., Nova Southeastern University

Christy C. Andrews, R.N. (1998) Instructor, Nursing
B.S.N., Western Carolina University;
M.S.N., University of North Carolina at Charlotte

Deborah J. Bakken, R.N. (2006) Instructor, Nursing
A.A.S., Nursing, George C. Wallace State Community College;
B.S.N., George Mason University; M.S.N., Touro University

Tamara W. Baldwin, C.D.A., R.D.H.(1992) Instructor,
Allied Dental Programs
A.A.S., Asheville-Buncombe Technical Community College;
B.S., Mars Hill College; M.A.Ed., Western Carolina University

Jennifer Bosworth (2009) Education Outreach Advisor,
Smart Start
B.A. University of North Carolina Greensboro;
M.A., B.K., Western Carolina University

Laura L. Brown, R.N., C.P.N., C.A.P.A., C.N.E. (2002) Instructor,
Nursing
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

Cathy B. Cody (1993) Chairperson, Early Childhood
B.S., M.S., Western Carolina University

Dianne Cotter, RVT (2004) Chairperson,
Veterinary Medical Technology
A.A.S., Central Carolina Community College; B.B.A., Montreat College

Dianne L. Davis (2007) . . Director, Basic Law Enforcement Training
A.A.S., Southwestern Technical Community College; B.S., Western Carolina
University; M.S., Boston University

Angela Dunagin-Sellers (2008) Instructor, Nursing
A.A., A.D.N., Hinds Community College, B.S.N., University of Mississippi

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

Aimee Feste, R.N., M.S.N., C.N.M. (2007). Instructor, Nursing
B.S.N., University of North Carolina at Chapel Hill;
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Brenda H. Fisher, R.D.H. (2008) . . . Instructor, Allied Dental Programs
A.A.S., Asheville-Buncombe Technical Community College;
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Megan A. Getty-Odom, M.S.W., L.C.S.W. (2004) Chairperson,
Human Services Technology
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;
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A.A.S., Asheville-Buncombe Technical Community College;
B.S.B.A., Franklin University

Christine A. Halvorson. C.D.A., R.D.H. (2005) Dental Clinic
Coordinator
A.A.S., St. Phillips College; B.S., Regents College

Ann Marie Hammond, R.N. (2009) Instructor, Nursing
B.S.N., Milligan 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

Dolly Horton, CMA (AAMA), M.Ed. (2008) Chairperson,
Medical Assisting
A.A.S., Western Piedmont Community College; B.S., Western Carolina University;
M.S., Regent University; further doctoral study at Walden University.

Dianne B. Hughes (1999) Instructor, Early Childhood Associate
B.A., Mars Hill College; M.A. Ed., Western Carolina University

Melissa Hyatt, M.T. (ASCP) (1996) Chairperson,
Medical Laboratory Technology
A.A.S., Asheville-Buncombe Technical Community College;
B.S., M.H.S., Western Carolina University

Darin Jackson (2010) Instructor, Emergency Medical Science
A.A.S. Asheville-Buncombe Technical Community College;
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Heather Jacobs, R.N. (2009) Instructor, Nursing
B.S.N., East Carolina University; MSN, East Carolina University

Robin B. Keith, C.S.T., 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; Surgical Technology
Diploma, Fayetteville Technical Community College

Pamela N. Kirby (2002) Instructor, Early Childhood Associate
B.S., Radford University; M.A.Ed, Western Carolina University

Nita Kirkpatrick, R.N. (2008) Instructor, Nursing
BSN, Berea College; MSN, East Carolina University

Carol W. Little, C.D.A., R.D.H. (2005) Instructor,
Allied Dental Programs
Certificate, University of North Carolina at Chapel Hill;
A.A.S. Asheville-Buncombe Technical Community College;
B.S. Mars Hill College; M.H.S., Western Carolina University

Sheryl E. Lussier, R.N. (1998) Instructor, Nursing
Diploma, Seton School of Nursing; B.S.N., University of Phoenix

- Nancy G. Markhoff. Secretary, Nursing
B.S.Ed., Ohio State University
- Dara A. Narsiff Secretary, Allied Health
and Public Services Education
A.A.S., Asheville-Buncombe Technical Community College
- Elizabeth Nealon, 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
- Jennah Nickerson, (2009) RIBN Nursing Student Advisor
B.A., University of North Carolina at Asheville
- 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
- Brenda Phillips, R.T. (R) (1992) Instructor, Radiography
A.A.S., Asheville-Buncombe Technical Community College; B.A., Berea College
- Karen Pruett Dental Lab Manager
C.D.A., C.D.P.M.A., Asheville-Buncombe Technical Community College
- 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
- Lori A. Tapp, D.V.M. (2007) Instructor,
Veterinary Medical Technology
M.S.; D.V.M., University of Florida, Gainesville
- John C. Witherspoon (2006) Chairperson,
Fire Protection Technology
A.S., Montreat College; A.A.S., Asheville-Buncombe Technical
Community College
- Monique H. Worley, M.T. (ASCP) (2008) Instructor, Phlebotomy
B.S., Western Carolina University
- ## ARTS AND SCIENCES
- Kenet M. Adamson (2002) Dean, Arts and Sciences
B.S., University of Florida; B.A., Georgia State University;
M.A., Western Carolina University
- Joseph G. Allawos (2000) Instructor, Biology
B.S., College of Charleston; M.S., University of Tennessee
- Jerry L. Ashe (1996) Instructor, Mathematics
A.A., Daytona Beach Community College; B.S., M.S., further graduate study:
University of Central Florida
- Yesho Y. Atil (2006) Instructor, English/Communications
B.A., M.F.A., University of Alabama
- Tamala S. Barnett. Secretary, Arts and Sciences
A.A.S., Asheville-Buncombe Technical Community College; PSP (State)
- April D. Birchfield (2003) Instructor, History
B.A., University of North Carolina at Asheville; M.A., Wake Forest University
- Jennifer L. Browning (2003) Instructor, English/Communications
B.A., University of North Carolina at Asheville;
M.A., further graduate study, Georgia State University
- John G. Bultman (2007) Instructor, Geology
B.S., University of Southern Mississippi;
M.S., University of Tennessee at Knoxville
- Helen L. Burrell (2004) Instructor, Biology
B.S., Manchester Metropolitan University; M.S., Appalachian State University
- Jacqueline Caldwell (1999) Instructor, Mathematics
B.S., North Carolina State University; M.A., Western Carolina University
- Janet H. Caldwell (2006) Instructor, English/Communications
B.A., M.S., Murray State University; M.A.Ed., Northwestern University
- Peter J. Carver (2006) Instructor, Drama
B.A., Stetson University; M.A., Texas Woman's University;
M.F.A., University of New Orleans
- R. Trent Codd, Jr. (1999) Chairperson, Mathematics
A.A., Miami-Dade Community College; B.S., M.A., University of Miami;
B.S.C.S., E.A.S.G.C., Florida International University;
further graduate study, Western Carolina University.
- Tim Cox (2008) Biology Lab Manager
B.S., Mars Hill College
- Karma Crouch (1992) Instructor, Mathematics
B.S., Appalachian State University; M.A.Ed., Western Carolina University
- Charles P. Cummings, Ph.D (2001) Instructor, Psychology
B.A., State University of New York at Buffalo;
M.A., PhD., Georgia State University
- Rhonda L. Davidson (2007) Instructor,
Health & Physical Education
B.S., M.A., Gardner-Webb University
- John B. Davis (2009) Instructor, Psychology
B.A., M.A.Ed., Ed.D., Ph.D., Georgia State University
- T. Ren Decatur (1996) Instructor, English/Communications
B.A., University of North Carolina at Charlotte; M.A., University of Idaho;
further graduate study: University of Vienna, Austria
- T. Gigi Derballa (1999) Chairperson, Humanities/Fine Arts, Honors
A.A., Seminole Community College; B.A., M.A., University of Central Florida
- Rock E. Doddridge, Ph.D. (2003) Instructor, Psychology
B.A., M.A.Ed., University of Florida; M.Div., D.Min, Fuller Theological Seminary;
Ph.D., Loyola University of Chicago; M.A.R.E., North Park Theological Seminary;
further graduate study, Western Carolina University
- Thelbert W. Dowdy (1999) Instructor, History
B.A., Western Carolina University; M.A., Appalachian State University
- Matthew A. Fender (1990) Chairperson, Chemistry/Physics
A.A.S., Asheville-Buncombe Technical Community College;
B.S., M.S., further graduate study: Western Carolina University
- Sandi Goodridge (1986) Instructor, English/Communications
B.A., M.A.Ed., University of South Carolina; further graduate study:
Western Carolina University
- Randee B. Goodstadt (1993) Chairperson,
Social/Behavioral Sciences
B.A., Kent State; M.A., further graduate study: Harvard University
- John Graham (1991) Instructor, Chemistry/Physics
B.S., M.S.T., University of Florida
- W. Michael Gray (1981) Instructor, Biology
B.A., M.S., Appalachian State University; further graduate study:
Western Carolina University
- Lisa Hale Secretary, Arts and Sciences
A.A.S., Lorain County Community College, Elyria, OH

Lee B. "Rusty" Holmes, Jr. (2000) Instructor, English/
Communications
B.A., University of North Carolina at Chapel Hill; M.A., University of Oklahoma;
Ed.S., University of West Florida; further study: Florida State University

William Hooper (1992) Instructor, Chemistry/Physics
A.S., Isothermal Community College; B.S., M.S., University of North Carolina at
Chapel Hill; further graduate study: Western Carolina University

Aidan M. Hoyal (2004) Instructor, Spanish
B.A., M.A., M.S., University of Tennessee

C. Lisa Johnson (1989) Instructor, English/Communications
B.A., M.A., Western Carolina University; further graduate study:
Indiana University of Pennsylvania

David M. Kareken (2005) Instructor, Humanities/Fine Arts
B.F.A., Minneapolis College of Art and Design; M.A., Western Carolina
University; M.F.A., California College of Arts and Crafts, San Francisco, CA

Sun Kondal (2002) Instructor, Humanities/Religion
B.A., New College; M.A., University of Florida

Lynn E. Lewis, Ph.D. (2008) Instructor, Chemistry/Physics
B.S., Mercer University; Ph.D., Clemson University

Valerie R. Martin (2001) Instructor, Mathematics
A.A., Santa Fe Community College; B.A., Mercer University;
M.S., Western Carolina University

Kelly Q. McEnany (1999) Instructor, Sociology
B.A., University of Wisconsin at Madison; M.A.Ed., Western Carolina University

Erik S. Moellering (2010) Advising Center Coordinator/
Instructor, English
B.A., M.A., James Madison University

Stephanie O'Brien (2007) Instructor, English/Communications
B.A., University of North Carolina at Greensboro; M.A., University of North
Carolina at Chapel Hill

Russell F. Palmeri (2005) Instructor, Biology
B.S. St. Procopius College; M.D., Georgetown University

Melanie Parham (2009) Instructor, French
B.A., University of North Carolina at Chapel Hill;
M.S., University of Tennessee at Knoxville

Scott Paxon (2003) Instructor, Biology
B.A., University of North Carolina; M.S., University of Oregon; further study,
Southern Oregon University and Highlands Biological Station

Ellen J. Perry (2006) Chairperson, English/Communications
B.A., University of North Carolina at Asheville; M.A., Appalachian State University

Glenn C. Ratcliff, Ph.D. (2001) Instructor, Chemistry/Physics
B.S., University of North Carolina at Asheville;
M.S., Ph.D., University of North Carolina at Chapel Hill

Sherry L. Ratzlaff (2004) Instructor, Biology
A.S., Virginia Western Community College; B.S., Radford University;
M.S., Oklahoma State University

Kenneth N. Rudolph (1998) Instructor, Sociology
B.S., North Carolina State University; M.S., University of Utah

Lori Seiderman (2008) Instructor, Humanities/
Teacher Education in Secondary Schools
B.A., Mount Holyoke College; M.A., M.Ed., University of Massachusetts
at Amherst; A.B.D., Capella University

Carol W. Stanford (2003) Chairperson, Health & Physical
Education/ Wellness /Intramurals Coordinator
B.S., M.A.Ed., Western Carolina University

Tammy Sullivan (2008) Instructor, Mathematics
A.A., Miami-Dade Community College; B.S., M.S. Florida International University

C. Lee Swendsen, Ph.D. (2003) Instructor, Biology
B.S., Morningside College; M.S., Ph.D., University of Iowa

Sharon Trammel (1999) Instructor, Humanities/Fine Arts
B.A., University of North Carolina at Asheville; M.F.A., University of North
Carolina at Greensboro; Renaissance Art Study, Florence, Italy

Paula W. Trilling (2001) Instructor, Biology
A.S., Asheville-Buncombe Technical Community College; B.A., University of
North Carolina at Asheville; M.A.Ed., Western Carolina University

Heather K. Vaughn (2000) Instructor, English/Communications
B.A., Elon College; M.A., University of Nebraska, Lincoln

Valerie K. Watts (2000) Instructor, Spanish
A.A., Bucks Community College; B.A., Rider College; M.A., University of Georgia;
further study: Universidad de Madrid, Spain

G. Robert Webb, Jr. (2004) Instructor, Mathematics
B.A., University of North Carolina at Asheville;
M.A.Ed., Western Carolina University

Lisa York (2009) Instructor, English
B.A., College of Charleston; M.A. The Citadel and College of Charleston;
A.B.D., University of Florida, Gainesville

Laurel H. Young (2001) Chairperson, Biology
B.S., University of Tennessee; M.S., Western Carolina University

Leesa Young (1995) Instructor, Sociology
B.A., North Carolina State University; M.H.R., University of Oklahoma

BUSINESS AND HOSPITALITY EDUCATION

Philip R. Leftwich (1996) Dean, Business and Hospitality Education
B.S.B.A., Western Carolina University; M.B.A., University of North Carolina at
Charlotte; Ed.D., North Carolina State University

Sheila Tillman (1990) Associate Dean, Hospitality Education
A.A.S., Asheville-Buncombe Technical Community College;
B.S., University of Rhode Island; M.A.Ed., Western Carolina University

Scott Adams (2009) Instructor, Culinary Arts and Hospitality
A.A.S., Johnson and Wales University; B.S., Appalachian State University;
M. S.M.L., Montreat College

Pamela L. Baker, CEOE (1978) Secretary, Business and
Hospitality Education
A.A.S., Asheville-Buncombe Technical Community College; PSP (State, National)

Jonathan H. Bricker (2000) Instructor, Business Administration
B.S., University of Oregon; M.A., University of Tennessee

Doreen E. Campbell (2009) Instructor,
Spa Therapies and Operations
A.A.S., Guilford Technical Community College

Charles R. deVries (2005) Instructor, Culinary Arts & Hospitality
A.O.S., Culinary Institute of America; American Culinary Federation Certified
Executive Pastry Chef

Vincent J. Donatelli (2001) Lead Instructor,
Culinary Arts & Hospitality
A.O.S., Certificate, Culinary Institute of America

- Kathleen Doole (1995) Instructor,
Business Computer Technologies
A.A.S., Blue Ridge Community College; B.A., William Paterson College of
New Jersey; M.A.Ed., Western Carolina University;
Ed.D., North Carolina State University
- Veronica P. Dooly (2006) Instructor,
Business Computer Technologies
A.A.S., Haywood Community College; B.A., King College;
M.S., University of Maryland, Adelphi
- Thomas K. Edmondson Computer Lab Coordinator
B.S., North Carolina State University; further study,
Asheville-Buncombe Technical Community College
- Alec A. Fehl (2008) . . . Instructor, Business Computer Technologies
B.M., Berklee College of Music
- Jean B. Finley (2004) Instructor,
Business Computer Technologies
A.A.S., McDowell Technical Community College;
B.A., Gardner Webb University; M.A.Ed., Western Carolina University
- Joseph L. Fox (2007). Chairperson, Business Administration
B.S., Pfeiffer University; M.B.A.; Ed.D., Western Carolina University
- John F. Hofland (1999) Instructor, Culinary Arts & Hospitality
Culinary Institute of America, American Culinary Federation
Certified Executive Chef
- John H. Humphrey, Jr., Ed.D. (1987) Instructor,
Business Computer Technologies
B.S., North Carolina State University; M.B.A., University of North Carolina at
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- Constance Humphries (2009) Instructor,
Business Computer Technologies
B.F.A., University of North Carolina at Asheville;
M.S., University of North Carolina at Chapel Hill
- Carolyn B. Hutchinson, C.P.A., C.I.A. (2000) Instructor,
Business Administration
B.S., University of North Carolina at Asheville; M.B.A., Clemson University
- Frances B. Jones (2009) Instructor,
Spa Therapies and Operations
A.A.S., McDowell Technical Community College
- Michelle Kelley (2007) Lab Manager/Instructor,
Culinary Arts & Hospitality
A.O.S., New England Culinary Institute;
B.F.A., University of North Carolina at Chapel Hill
- Peter U. Kennedy (2007) Instructor, GIS/
Business Computer Technologies
B.S., M.S., Clemson University
- Donna J. Ladet Culinary Lab Manager
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- Jacqueline A. Larsen (2002) Instructor, Business Computer
Technologies
B.A., M.B.A., Cleveland State University
- Lewis R. Lightner, Jr. (2000) Chairperson,
Networking Technologies
A.A.S., Asheville-Buncombe Technical Community College;
further study: East Carolina University
- Tambra Luppino (2008) Chairperson,
Spa Therapies and Operations
A.A., Blue Ridge Community College; B.A., University of North Carolina at
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- Steven L. Marcus (2001) Instructor, Networking Technologies
A.A.S., Haywood Community College; B.S., University of North Carolina at
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- Bronwen G. McCormick (2004) Chairperson, Culinary Arts &
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A.A.S., Asheville-Buncombe Technical Community College;
B.A., University of North Carolina at Chapel Hill; further study:
University of North Carolina at Greensboro
- Lease McIntosh (2010) Lodge Housekeeping
A.A.S., Asheville-Buncombe Technical Community College
- Virginia M. Norton (1997) Instructor, Administrative/
Medical Systems Technology
A.A.S., Asheville-Buncombe Technical Community College; B.S.B.A., Mars Hill
College; M.B.A., Western Carolina University
- Robert H. Potts, G.R.I. (2001). Coordinator, Real Estate Programs
A.A.S., Southwestern Community College; B.S.B.A., Western Carolina University;
further study: Asheville-Buncombe Technical Community College
- Beverly A. Ramsey, C.P.C., C.M.A. (2007) Instructor,
Administrative/Medical Systems Technologies
A.A.S., Surry Community College
- Kelly C. Randolph, C.P.A. (1998) Instructor, Business Administration
B.S.B.A., M.S., Appalachian State University
- Walter A. Rapetski, Jr. (1998) Instructor,
Culinary Arts & Hospitality
A.A.S., B.S., M.S., Rochester Institute of Technology
- Marlene Roden (1999) Instructor,
Business Computer Technologies
B.S., Western Carolina University; M.A., Appalachian State University
- Jonathan S. Ross (2004) Instructor,
Business Computer Technologies
B.M., James Madison University; M.M., Binghamton University
- Marek B. Swicki (2009) Instructor,
Spa Therapies and Operations
B.A., University of Massachusetts, Amherst; Asheville School of Healing Arts,
Nippon Shiatsu Diagaka; Diploma, Guild of Structural Integration, Boulder, CO;
further study: Ayurvedic, Albuquerque, N.M.
- Misty L. Shuler, R.H.I.A. (1998) Chairperson, Administrative/
Medical Systems Technologies
B.S., Western Carolina University
- Pamela J. Silvers (1996) Chairperson,
Business Computer Technologies
B.S., University of North Carolina at Asheville;
M.A.Ed., Western Carolina University
- Frederick L. Snyder (2006) . . Instructor, Culinary Arts & Hospitality
A.A.S., Culinary Institute of America
- Lee Sokol Secretary, Culinary Arts & Hospitality
B.A., University of Florida; M.A., American University
- Gregory A. Spencer (2007) . . Instructor, Culinary Arts & Hospitality
A.A.S., Asheville-Buncombe Technical Community College; B.S., Elon University

Kathy S. Toler (1983) Instructor, Business Administration
B.A., M.A.T., University of South Carolina;
further graduate study: Western Carolina University

Charles K. Wallin (2006) Instructor,
Business Computer Technology
B.F.A., Michigan State University; M.S., University of St. Thomas

William L. Wolfe (2001) Instructor, Networking Technologies
A.A.S., Asheville-Buncombe Technical Community College;
B.S., University of North Carolina at Asheville

ENGINEERING AND APPLIED TECHNOLOGY

Vernon D. Daugherty, Jr. (2005) Dean, Engineering and
Applied Technology
B.S., Western Carolina University; M.S., North Carolina A&T State University;
N.C. Licensed Heating, Air Conditioning, Refrigeration,
Plumbing, and Electrical Contractor

Samuel L. Barnes (1988) Instructor, Machining Technology
Diploma, Technical Diploma, A.A.S., Asheville-Buncombe Technical Community
College; B.S., Western Carolina University; Master Tool & Die Maker

Larry S. Boyd (1986) Chairperson, Machining and Welding
A.A.S., Asheville-Buncombe Technical Community College; B.S.M.E.T., Western
Carolina University, University of North Carolina at Asheville

Kenneth R. Cooper, P.E., R.L.S. (2009) . . . Instructor, Civil Engineering/
Surveying Technology
A.A.S., Suffolk County Community College; B.S. University of Arizona

Kenneth F. Czarnomski (2003) Chairperson, Construction
Management Technology
B.S., B.A., Lawrence Technological University; R.A.; N.C.A.R.B.

Charles P. Farmer (2003) Instructor, Welding Technology
A.A.S., Diploma, Asheville-Buncombe Technical Community College;
B.S., Mars Hill College

M. Kevin Fletcher (2003) . . . Instructor, Transportation Technologies
A.A.S., Asheville-Buncombe Technical Community College; ASE, Master
Certified, Heavy Truck Technician

David M. Hamlett (2006) Instructor, Computer-Aided Design
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The primary accreditor of Asheville-Buncombe Technical Community College is the Commission on Colleges of the Southern Association of Colleges and Schools located at 1866 Southern Lane, Decatur, GA 30033-4097, telephone 404.679.4500. Inquiries about the College's accreditation status only may be obtained by contacting this organization.

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