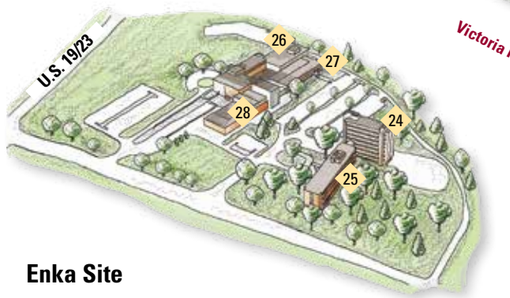
Asheville Campus

1 - Thomas W. Simpson Administration Building
2 - K. Ray Bailey Student Services Building
3 - Balsam Computer Technology Center
4 - Birch Building
5 - Chestnut Building
6 - Dogwood Building
7 - Elm Building
8 - Ferguson Building
9 - Fernihurst
10 - Fernihurst Annex A & B
11 - Hemlock Building
12 - Holly Library
13 - Ivy Building
14 - J. Herbert Coman Student Activity Center
15 - Magnolia Hospitality Education Center
16 - Maple Building
17 - Maple Building Annex
18 - Poplar Building
19 - Rhododendron Building
20 - Smith-McDowell House Museum
21 - Sunnicrest
22 - Sycamore Building
23 - 93 Victoria Road

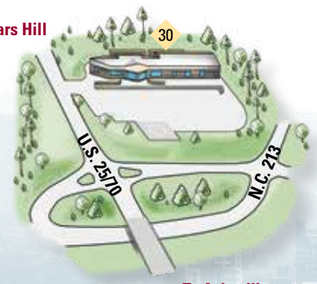


Enka Site

24 - Harvey L. Haynes Corporate Technology Training and Conference Center
25 - Economic and Workforce Development/ Continuing Education Executive Offices
26 - Technology Commercialization Center
27 - Small Business Center and Incubator
28 - Blue Ridge Food Ventures

A-B Tech South

29 - South Building



Madison Site

30 - Ramsey Building

AB Tech Community College

Asheville-Buncombe Technical Community College
828-398-7900 ◆ abtech.edu

9789970076895

Asheville-Buncombe Technical Community College

2013–2014 CATALOG

AB Tech Community College

Technology + Cosmetology + Courts and the Law + Criminal Investigations and Crime Scenes + Criminal Justice Technology + Justice Administration and Management + Culinary Arts + Cybercrime Technology + Dental Assisting + Dental Hygiene + and Heavy Equipment Technology + Digital Media Technology + Early Childhood + Electrical Systems Technology + Engineering Technology + Emergency Medical Science + Entrepreneurship + Essential Police Operations + Esthetics Technology + Protection Technology + Foodservice Technology + General Occupational Technology + Business Informatics + Hospitality Management + Human Resources Management + Human Services

Catalog

2013-2014

Asheville-Buncombe Technical Community College
828-398-7900 ◆ abtech.edu

Locally Committed ◆ Regionally Dynamic ◆ World-Class Focused

Asheville-Buncombe Technical Community College

Catalog of Courses
Day and Evening College
Volume 51
2013-2014

Main College Contact Information

828-398-7900 • 828-254-1921
www.abtech.edu

Asheville Campus

340 Victoria Road
Asheville, NC 28801

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

Campus Police and Security:
828-279-3166

Enka Site

1459 Sand Hill Road
Candler, NC 28715

Phone: 828-398-7802
Fax: 828-281-9842

Madison Site

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

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

South Site

303B Airport Road
Arden, NC 28704
828-398-7716

Campus Police and Security:
828-301-7150

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

Asheville-Buncombe Technical Community College is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award associate degrees, diplomas and certificates. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097 or call 404-679-4500 for questions about the accreditation of Asheville-Buncombe Technical Community College.

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

Specific Program Accreditation/Certification

(Contact information for each of the accrediting agencies is located in the respective program descriptions):

Automotive Systems Technology Accreditation

The Automotive Systems Technology associate degree program has received certification by the National Automotive Technicians Education Foundation (NATEF) and is accredited by National Institute for Automotive Service Excellence (ASE). All eight areas meet the strict industry standards required for the training of automobile technicians. This is the highest level of achievement recognized by the National Institute for Automotive Excellence (ASE).

Basic Law Enforcement Training (BLET) Accreditation

The Basic Law Enforcement Training (BLET) program is accredited by the North Carolina Criminal Justice Education and Training Standards Commission.

Baking & Pastry Arts Program and Culinary Arts Technology Program Accreditation

The Baking & Pastry Arts and Culinary Arts programs are accredited by the Accrediting Commission of the American Culinary Federation Education Foundation.

Dental Assisting and Dental Hygiene Programs Accreditation

The Dental Assisting and Dental Hygiene programs are accredited by the American Dental Association, Commission on Dental Accreditation (CODA).

Early Childhood Education

The Early Childhood Associate and Early Childhood/School Age programs are accredited by the National Association for the Education of Young Children (NAEYC).

Medical Assisting Program Accreditation

The Medical Assisting program is accredited by the Commission on Accreditation of Allied Health Education Programs, upon the recommendation of the American Association of Medical Assistants.

Medical Lab Technology Program and Phlebotomy Program Accreditation

The Medical Laboratory program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). The Phlebotomy program is approved by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS).

Medical Sonography Program Accreditation

The Medical Sonography program is accredited by the Commission on Accreditation of Allied Health Education Programs, upon the recommendation of the Joint Review Committee on Education in Diagnostic Medical Sonography.

Ophthalmic Assisting Program (Continuing Education)

The Ophthalmic Assisting Program, offered through Continuing Education, is accredited by the Commission on Accreditation of Ophthalmic Medical Programs (CoA-OMP).

Radiography Program Accreditation

The Radiography program is accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT).

Surgical Technology Program Accreditation

The Surgical Technology program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) upon recommendation of the Accreditation Review Council on Education in Surgical Technology and Surgical Assisting (ARC-STSA).

Veterinary Medical Technology

The Veterinary Medical Technology program is accredited by the American Veterinary Medical Association (AVMA) Committee on Veterinary Technician Education and Activities (CVTEA).

Cosmetology, Cosmetology Instructor, Esthetics Technology and Manicuring/Nail Technology

North Carolina State Board of Cosmetic Art Examiners

Emergency Medical Science

North Carolina Office of Emergency Medical Services

Information Systems Security

National Security Agency, National Information Assurance Education and Training Program

Nursing

North Carolina Board of Nursing

For information about graduation rates, the median debt of students who completed the program, and other important information on federally-designated gainful employment programs, visit **abtech.edu/gainful-employment**.

Catalog changes:

The official and most current version of the Asheville-Buncombe Technical Community College catalog is posted on the College website at abtech.edu. Neither the online version nor the print version of the catalog should 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.

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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
Automotive Systems Technology	A.A.S. Degree	Day/Evening
Automotive Systems Technology	Diploma	Day/Evening
Automotive Systems Technology - Certificate I	Certificate	Day/Evening
Automotive Systems Technology - Certificate II	Certificate	Day/Evening
Automotive Systems Technology - Certificate III	Certificate	Day/Evening
Baking and Pastry Arts	A.A.S. Degree	Day
Basic Law Enforcement Training	Certificate	Day/Evening
Brewing, Distillation and Fermentation (*pending state approval)*	A.A.S. Degree	Day
Business Administration	A.A.S. Degree	Day/Evening
Business Administration	Diploma	Day/Evening
College Transfer		
Associate in Arts	A.A. Degree	Day/Evening
Transfer Core Diploma in Arts	A.A. Diploma	Day/Evening
Associate in Science	A.S. Degree	Day/Evening
Transfer Core Diploma in Science	A.S. Diploma	Day/Evening
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
GIS Fundamentals	Certificate	Day/Evening
Microcomputer Applications	Certificate	Day/Evening
PC Installation and Maintenance	Certificate	Day/Evening
Computer Basics	Certificate	Day/Evening
Computer Integrated 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
Fundamentals of Metal	Certificate	Day/Evening
Construction Management Technology	A.A.S. Degree	Evening
Building Construction Science	Diploma	Evening
Construction Management Technology	Certificate	Evening
Basic Construction and Millwork	Certificate	Evening
Cosmetology	A.A.S. Degree	Day/Evening
Cosmetology	Diploma	Day/Evening
Cosmetology Instructor	Certificate	Day
Criminal Justice Technology	A.A.S. Degree	Day/Evening
Courts and the Law	Certificate	Day/Evening
Criminal Investigations and Crime Scenes	Certificate	Day/Evening
Criminal Justice & Special Populations	Certificate	Day/Evening
Criminal Justice Administration & Management	Certificate	Day/Evening
Essential Police Operations	Certificate	Day/Evening
System of Criminal Justice	Certificate	Day/Evening
Culinary Arts	A.A.S. Degree	Day

Program	Credential	Schedule
Cyber Crime Technology *Offered in collaboration with Catawba Valley Community College	A.A.S. Degree*	Day/Evening
Dental Assisting	Diploma	Day
Dental Hygiene	A.A.S. Degree	Day
Diesel and Heavy Equipment Technology	A.A.S. Degree	Evening
Diesel and Heavy Equipment Technology	Diploma	Day
Diesel and Heavy Equipment Technology	Certificate	Day
Digital Media Technology	A.A.S. Degree	Day/Evening
Digital Video	Certificate	Day/Evening
Interactive Multimedia	Certificate	Day/Evening
Early Childhood Associate	A.A.S. Degree	Day
Early Childhood/School-Age Education	A.A.S. Degree	Day
Early Childhood	Certificate	Day/Evening
Infant/Toddler Care	Certificate	Day/Evening
Special Education	Certificate	Day/Evening
Electrical Systems Technology	A.A.S. Degree	Day/Evening
Electrical Systems 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
Emergency Medical Science Bridge	A.A.S. Degree	Day
Entrepreneurship	A.A.S. Degree	Day
Entrepreneurship	Certificate	Day
Esthetics Technology	Certificate	Day/Evening
Fire Protection Technology	A.A.S. Degree	Day/Evening
Fire Protection Technology	Certificate	Day/Evening
Food Service Technology	Diploma	Day
General Occupational Technology	A.A.S. Degree	Day/Evening
General Occupational Technology	Diploma	Day/Evening
Healthcare Business Informatics	A.A.S. Degree	Day/Evening
Hospitality Management	A.A.S. Degree	Day
Leadership in Hospitality	Certificate	Day
Human Resources Management	A.A.S. Degree	Evening
Human Resources Management	Certificate	Evening
Human Services Technology	A.A.S. Degree	Day
Human Services & Substance Abuse Studies	Certificate	Day
Industrial Systems Technology	A.A.S. Degree	Day/Evening
Industrial Mechatronics	Diploma	Day
Basic Maintenance	Certificate	Day/Evening
Metal Fabrication	Certificate	Day/Evening
Information Systems Security	A.A.S. Degree	Day/Evening
CNSS 4011/4013	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	Day/Evening
Mechanical Drafting	Certificate	Day/Evening
Automation & Robotics	Certificate	Day/Evening

Program	Credential	Schedule
Medical Assisting	A.A.S. Degree	Day
Medical Laboratory Technology	A.A.S. Degree	Day
Medical Office Administration	A.A.S. Degree	Day
Medical Office Administration	Diploma	Day/Evening
Medical Coding	Certificate	Day/Evening
Medical Sonography	A.A.S. Degree	Day
Medical Transcription	Diploma	Day/Evening
Networking Technology	A.A.S. Degree	Day/Evening
CCNA Preparation	Certificate	Day/Evening
Systems Administration	Certificate	Day/Evening
Nursing		
Associate Degree Nursing	A.A.S. Degree	Day/Evening/Weekend
Associate Degree Nursing Bridge	A.A.S. Degree	Day/Evening/Weekend
Associate Degree Nursing RIBN Option	A.A.S. Degree*	Day/Evening/Weekend
* Dual Enrollment option with Western Carolina University		
Practical Nursing	Diploma	Day/Evening
Office Administration	A.A.S. Degree	Day
Office Administration	Diploma	Day
Office Management	Certificate	Day/Evening
Word Processing/Desktop Publishing	Certificate	Day/Evening
Pharmacy Technology	A.A.S. Degree	Day
Pharmacy Technology	Diploma	Day
Phlebotomy	Certificate	Day
Radiography	A.A.S. Degree	Day
Surgical Technology	A.A.S. Degree	Day
Surgical Technology Bridge	A.A.S. Degree	Day
Sustainability Technology	A.A.S. Degree	Day
Therapeutic Massage	A.A.S. Degree	Day
Therapeutic Massage	Diploma	Day/Evening
Veterinary Medical Technology	A.A.S. Degree	Day
Web Technologies	A.A.S. Degree	Day/Evening
Mobile Development	Diploma	Day/Evening
Database Management	Certificate	Day/Evening
Geospatial Database and Web	Certificate	Day/Evening
Mobile Web Application Developer	Certificate	Day/Evening
Web Designer	Certificate	Day/Evening
Web Programmer: Level 1	Certificate	Day/Evening
Web Programmer: Level 2	Certificate	Day/Evening
Welding Technology	A.A.S Degree	Day
Welding Technology	Diploma	Day
Welding Technology - Basic Welding I	Certificate	Evening

Directory of College Services and Offices

All telephone listings begin with 828 area code.

Academic Success . . . . . .Dean
Holly Building, Asheville Campus, 398-7191

Academic Learning Center . . . . . Coordinator
Ferguson Building, Asheville Campus, 398-7228

Basic Skills . . . . . Director
Hemlock Building, Asheville Campus, 398-7488

Developmental Studies . . . . . .Chair
Ferguson Building, Asheville Campus, 398-7885

Academic Related Instruction (ACA 115) . . . . . .Chair
Ferguson Building, Asheville Campus, 398-7649

Library . . . . . Director
Holly Building, Asheville Campus, 398-7307

Service Learning . . . . . Coordinator
Holly Building, Asheville Campus, 398-7573

Business and Finance . . . . . .Vice President/CFO
Simpson Administration Building, Asheville Campus, 398-7111

Bookstore . . . . . Manager
K. Ray Bailey Student Services Center, Asheville Campus, 398-7200

Business Development, Incubation, and Small Business Center . . . . . .Executive Director
Center for Business and Technology Incubation, Enka Site, 398-7851

Business Services . . . . . .Executive Director
93 Victoria , Asheville Campus, 398-7390

Campus Police and Security . . . . . Chief of Police and Security
Chestnut Building, Asheville Campus, 398-7870

Early Education Center (Childcare Center) . . . . . Director
Poplar Building, Asheville Campus, 251-5111

Entrepreneurial and Educational Development Foundation . . . . . Strategic Business Development Officer
Center for Business and Technology Incubation, Enka Site, 398-7439

Parking Permits . . . . . Front Desk
K. Ray Bailey Student Services Center, Asheville Campus, 398-7520

Plant Operations . . . . . Director, Plant Operations
Chestnut Building, Asheville Campus, 398-7482

Tuition, Payments, Refunds (Access Card), Student Accounts . . . . . Business Office
93 Victoria, Asheville Campus, 398-7152, 398-7156, 398-7155

College Advancement

A-B Tech Foundation . . . . . .Executive Director
Fernihurst Building, Asheville Campus, 398-7176

Alumni . . . . . Coordinator
Fernihurst Building, Asheville Campus, 398-7171

Scholarships . . . . . Coordinator
K. Ray Bailey Student Services Center, Asheville Campus, 398-7562

Special Events . . . . . Coordinator
Fernihurst Building, Asheville Campus, 398-7567

College Services & Information

Job Placement . . . . . JobLink Center
Maple Building, Asheville Campus, 250-4761
Ramsey Building, Madison Site, 649-2577

Mountain Tech Lodge . . . . . Manager
Magnolia Building, Asheville Campus, 398-7248

News, Publications . . . . . Director of Community Relations and Marketing
Simpson Administration Building, Asheville Campus, 398-7117

Curriculum Programs. . . . . Vice President, Instructional Services
Simpson Administration Building, Asheville Campus, 398-7633

Allied Health and Public Service Education . . . . . Dean
Rhododendron Building, Asheville Campus, 398-7250

Arts and Sciences . . . . . Dean
Elm Building, Asheville Campus, 398-7650

Business and Hospitality Education . . . . . Dean
Birch Building, Asheville Campus, 398-7286

Emergency Services . . . . . Dean
Haynes Technology Center, Enka Campus, 398-7353

Engineering and Applied Technology . . . . . Dean
Dogwood Building, Asheville Campus, 398-7220

Instructional Support and Online Learning . . . . . Associate Director
Holly Library, Asheville Campus, 398-7511

Madison Site . . . . . Director
Ramsey Building, Marshall, NC, 398-7701

A-B Tech South . . . . . Coordinator
303B Airport Road, Arden, NC, 398-7716

Economic and Workforce Development/Continuing Education . . . . . Senior Executive Director
Haynes Technology Center, Enka Site, 398-7937

Community Enrichment Programs . . . . . Director
Hemlock Building, Asheville Campus, 398-7134

Emergency Services . . . . . Dean
Haynes Technology Center, Enka Site, 398-7353

Workforce Programs. . . . . Director
Haynes Technology Center, Enka Site, 398-7936

Economic & Workforce Development . . . . . Director
Haynes Technology Center, Enka Site, 398-7923

Human Resources & Organizational Development . . . . . Vice President
Sunnicrest Building, Asheville Campus, 398-7113

ADA Compliance. . . . . Director of Human Resources
Sunnicrest Building, Asheville Campus, 398-7170

Campus Volunteers and Interns . . . . . Coordinator
Sunnicrest Building, Asheville Campus, 398-7761

Organizational and Professional Development . . . . . Training Design and Support Specialists
Sunnicrest Building, Asheville Campus, 398-7180 / 398-7178

Information Systems Technology . . . . . Vice President/CIO
Haynes Technology Center, Enka Site, 398-7929

Help Desk . . . . . Technicians
Holly Library, Asheville Campus, 398-7550

Center for Faculty Development and Assessment . . . . . Associate Director
Elm Building, Asheville Campus, 398-7513

Student Services . . . . . Vice President, Student Services
K. Ray Bailey Student Services Center, Asheville Campus, 398-7146

Admissions . . . . . Admissions
K. Ray Bailey Student Services Center, Asheville Campus, 398-7520

Advising . . . . . Advisors
K. Ray Bailey Student Services Center, Asheville Campus, 398-7520

Career and College Promise . . . . . Director of Recruitment and High School Partnerships
K. Ray Bailey Student Services Center, Asheville Campus, 398-7484

Childcare Assistance . . . . . Executive Assistant
K. Ray Bailey Student Services Center, Asheville Campus, 398-7143

Counseling . . . . . Counselors
K. Ray Bailey Student Services Center, Asheville Campus, 398-7900

Disability Services . . . . . Associate Director – Support Services
K. Ray Bailey Student Services Center, Asheville Campus, 398-7581

Emergencies and Campus Police . . . . . 398-7125 or 9-911

Financial Aid . . . . . Financial Aid
K. Ray Bailey Student Services Center, Asheville Campus, 398-7900

Grade Changes . . . . . Class Instructor

Graduation Application . . . . . Records and Registration
K. Ray Bailey Student Services Center, Asheville Campus, 398-7900

Intramurals . . . . . Department Chair, Physical Education
Coman Student Activity Center, 398-7843

International Student Services . . . . . Coordinator – Transfer and Distance Services
K. Ray Bailey Student Services Center, Asheville Campus, 398-7185

Student Academic Records . . . . . Records and Registration
K. Ray Bailey Student Services Center, Asheville Campus, 398-7900

Student Life and Development . . . . . Director
Coman Student Activity Center, Asheville Campus, 398-7900

Student I.D. Cards . . . . . Campus Police and Security
K. Ray Bailey Student Services Center, Asheville Campus, 398-7900

Student Services Center . . . . . Coordinator
K. Ray Bailey Student Services Center, Asheville Campus, 398-7900

Transcript Request . . . . . Records and Registration
K. Ray Bailey Student Services Center, Asheville Campus, 398-7900

Transfer Credits . . . . . Records and Registration
K. Ray Bailey Student Services Center, Asheville Campus, 398-7900

Transfer-to-Senior-Institution Information . . . . . Transfer Advising Center
K. Ray Bailey Student Services Center, Asheville Campus, 398-7520

Tutoring . . . . . Class Instructor

Veterans' Services . . . . . Coordinator
K. Ray Bailey Student Services Center, Asheville Campus, 398-7206

Visiting the Campus . . . . . Enrollment Services
K. Ray Bailey Student Services Center, Asheville Campus, 398-7578

Address correspondence to the appropriate office in care of:

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

Tel: 828-254-1921 • 828-398-7900
Fax: 828-251-6355
www.abtech.edu

College Calendar 2013–2014

All dates in this calendar are subject to change.
For a full listing of College dates, visit abtech.edu/calendar

Fall Semester – 2013

Registration Begins	April 22
Last Date to Pay for Regular Registration	August 10, Noon
Last Date to Pay for Late Registration	August 17, Noon
Classes Begin	August 19
4-Week Minimester I	August 19 – September 16
8-Week Minimester I	August 19 – October 14
Student Activity Day	August 29
Labor Day College Holiday (College Closed)	August 31 - September 2
4-Week Minimester II	September 17 – October 14
Professional Development Day (No Classes for Students)	October 15
4-Week Minimester III	October 16 – November 12
8-Week Minimester II	October 16 – December 14
4-Week Minimester IV	November 13 – December 14
Thanksgiving Student Holiday (No Classes for Students)	November 27
Thanksgiving College Holiday (College Closed)	November 28 - December 1
Student Activity Day	December 6
Last Day of Class/Examinations	December 14
Winter College Holidays (College Closed)	December 21 – January 4

Spring Semester –2014

Registration Begins	November 4
Last Date to Pay for Regular Registration	December 19, Noon
Last Date to Pay for Late Registration	January 11, Noon
Classes Begin	January 13
4-Week Minimester I	January 13 – February 10
8-Week Minimester I	January 13 – March 10
Martin Luther King Jr. Day College Holiday (College Closed)	January 18 – January 20
4-Week Minimester II	February 11 – March 10
4-Week Minimester III	March 11 – April 14
8-Week Minimester II	March 11 – May 12
Student Spring Break (No Classes for Students)	March 17 – March 20
Spring College Holiday (College Closed)	March 21 – March 23
4-Week Minimester IV	April 15 – May 12
Student Activity Day	April 22
Last Day of Class/Examinations	May 12
Graduation	May 17

Summer Semester –2014

Registration Begins	April 21
Last Date to Pay for Registration	May 20, 5 p.m.
Classes Begin	May 21
5-Week Minimester I	May 21 – June 25
Memorial Day College Holiday (College Closed)	May 24 – May 26
Student Summer Break	June 26
5-Week Minimester II	June 27 – August 1
Independence Day College Holiday (College Closed)	July 4 - July 5
Last Day of Class/Examinations	August 1

Summary of Performance Measures 2012 Report

	Performance Measure	Standard Met	A-B Tech Results
1.	Passing Rates for Licensure and Certification Exams for First-Time Test Takers ***Standard**: 80% aggregate passing rate*	YES	*95% aggregate passing rate*
2.	Performance of College Transfer Students ***Standard**: 83% with a GPA of 2.0 or higher after two semesters*	YES	*92% of college transfer students had a GPA of 2.0 or above*
3.	Passing Rates of Students in Developmental Courses ***Standard**: 75% passing rate with a grade of "C" or better*	YES	*87% passing rate*
4.	Success of Developmental Students in Subsequent College Courses ***Standard**: 80% of students who took developmental courses will pass the "gatekeeper" English and/or mathematics course for which the developmental course serves as a prerequisite*	YES	*89% passing rate*
5.	Satisfaction of Completers and Non-Completers ***Standard**: 90% satisfied with the quality of college programs and services*	YES	*97% satisfaction rate*
6.	Curriculum Student Retention, Graduation and Transfer ***Standard**: 65% of fall degree-seeking students will either re-enroll, transfer or graduate by the subsequent fall*	YES	*72% retention, graduation or transfer rate*
7.	Business/Industry Satisfaction with Services Provided ***Standard**: 90% of respondents will rate services provided as "very good" or "excellent"*	YES	*95% 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.

*Seven measures were reported by NCCCS in 2012 (Progress of Basic Skills Students was omitted).

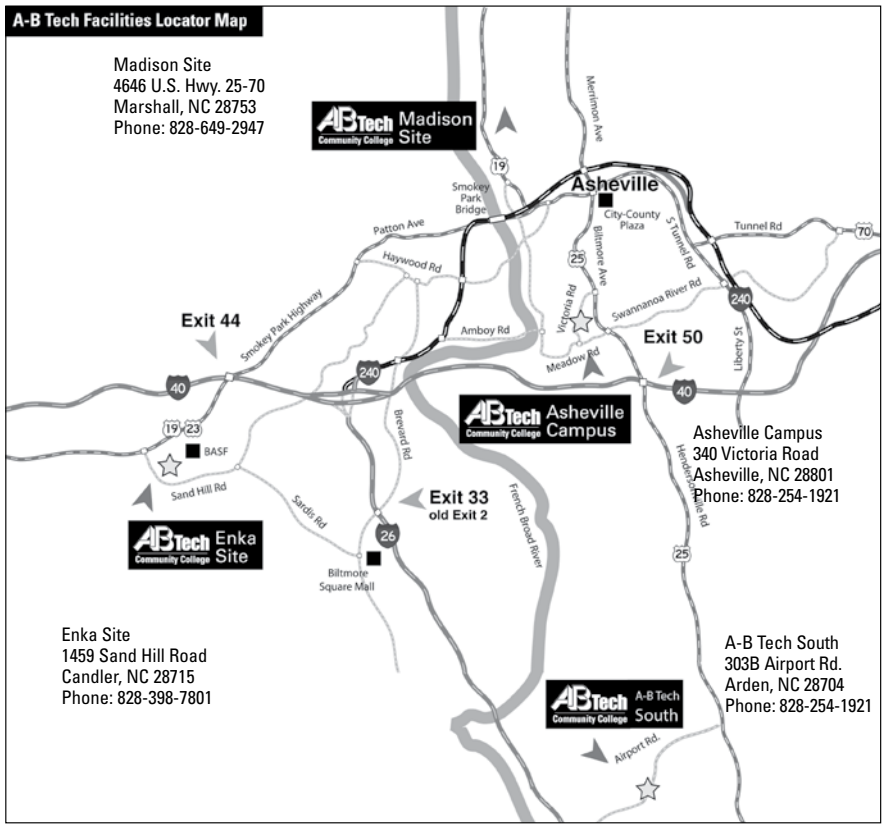
"Exceptional" College Status

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

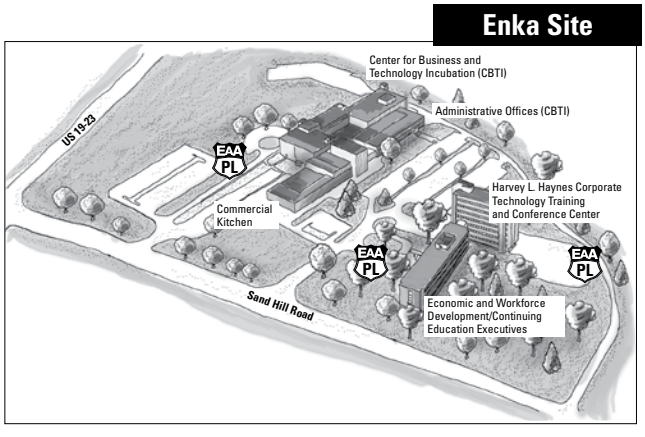
1a.	Passing Rates for Licensure and Certification Exams for First-Time Test Takers ***Standard**: 70% minimum passing rate for all exams*	YES	*All required exams achieved a 70% minimum passing rate*
2a.	Performance of College Transfer Students ***Standard**: 88% equivalent to or greater than native UNC sophomores and juniors*	YES	*92% of college transfer students had a GPA of 2.0 or above*

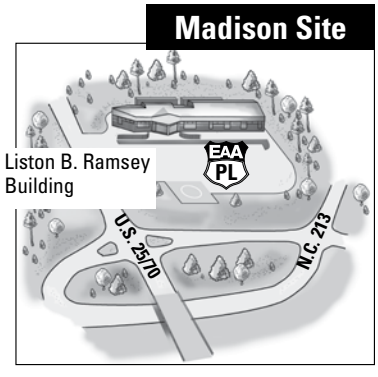
Source: 2012 Critical Success Factors Report

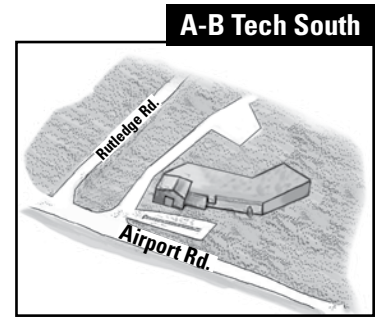
Site Locator Map



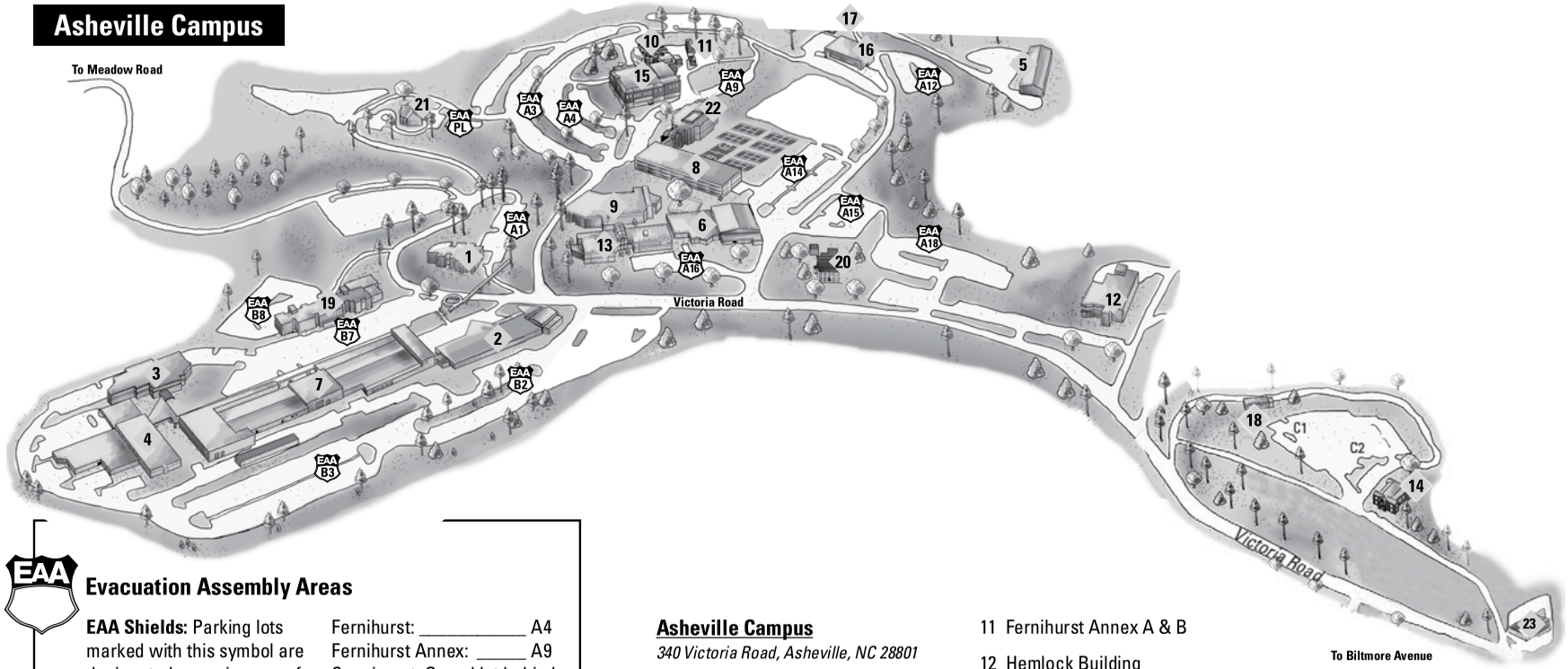
Site Facilities Maps







Asheville Campus



Evacuation Assembly Areas

EAA Shields: Parking lots marked with this symbol are designated areas in case of an emergency.

Simpson: _____Lower A1
Bailey: _____ B2
Balsam: _____ South B7
Birch: _____Lower B3
Dogwood: _____Lower B3
Sycamore: _____ A9
Elm: _____ A14
Rhododendron:
1st & 2nd Floor _____ B8
3rd & 4th Floor_____ B7
Holly Library:
1st Floor _____ A16
2nd Floor _____ A14
Ferguson: _____ A3
Magnolia: _____ A9
Coman: _____ A15
Fernihurst: _____ A4
Fernihurst Annex: _____ A9
Sunnicrest: Gravel lot behind
Maple: _____ A12
Chestnut: _____ A12
Smith McDowell: ____ A15
Hemlock: A18 (Grassy area)
Ivy: _____ C2
Poplar: _____ C1

Madison Site
Front Parking Lot

Enka Site
Haynes: Grassy area, west end of bldg.
Tower: back parking south lot
SBC: East end parking lot
TCC/BRFV: Grassy area, north side

Asheville Campus

340 Victoria Road, Asheville, NC 28801

1 Thomas W. Simpson Administration Building
2 K. Ray Bailey Student Services Center
3 Balsam Computer Technology Center
4 Birch Building
5 Chestnut Building
6 Coman Student Activity Center
7 Dogwood Building
8 Elm Building
9 Ferguson Building
10 Fernihurst Building
11 Fernihurst Annex A & B
12 Hemlock Building
13 Holly Library
14 Ivy Building
15 Magnolia Building
16 Maple Building
17 Maple Annex
18 Poplar Building
19 Rhododendron Building
20 Smith-McDowell House Museum
(Leased to WNC Historical Association)
21 Sunnicrest Building
22 Sycamore Building
23 93 Victoria Road

See **abtech.edu/maps** for programs and services located in each building.

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 on April 3, 1958 as the Asheville Industrial Education Center, and began serving student September 1, 1959.

Following legislation creating the North Carolina System of Community Colleges that was enacted in 1963 by the General Assembly, the name was changed on January 9, 1964 to Asheville-Buncombe Technical Institute. This legislation enabled the College to confer the Associate in Applied Science degree for the first time at graduation ceremonies in August 1964.

The Board of Trustees approved a third name change to Asheville-Buncombe Technical College on August 6, 1979. A final name change occurred November 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 November 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 January 18, 1990, A-B Tech officially opened a site in Madison County. The College had served the county out of temporary quarters at the Marshall Elementary School since December 12, 1984.

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

On October 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 Business Development and Incubation Program, a Small Business Center, pro bono professional services, a student incubation program, a technology training and conference center, a bio-business center, an institute for sustainability and technology, and a commercial kitchen.

On November 8, 2011, voters approved a quarter of one cent sales tax increase to fund a $129 million construction campaign to provide 21st century facilities to train students for 21st century jobs.

The college opened A-B Tech South in 2013, offering Curriculum and Continuing Education classes.

Administration

The College was initially administered by the Asheville City 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 professionals. 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 four divisions: Allied Health and Public Service Education, Business and Hospitality Education, Emergency Services and Engineering and Applied Technology.

Economic & Workforce Development/Continuing Education courses are generally offered on demand, with sufficient enrollment. The Division of Economic & Workforce Development/Continuing Education offers short-term workforce training options for business, industry and the general public. Courses in healthcare, business, hospitality, technology, industry, trades and employability skills are available. Training can be customized to meet the unique needs of small, mid-sized, and large businesses and can be tailored for delivery on demand. Community enrichment classes, such as art, languages and practical skills, are offered year round at each campus location throughout the College's service area.

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.

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

Campus Facilities

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

Located on the Asheville Campus is the Smith-McDowell House, the oldest brick house in Buncombe County, which is leased to the Western North Carolina Historical Association.

On January 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 Carolina Day School. The Board of Trustees acquired the title to these 12.77 acres and four buildings on September 23, 1987. 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 October 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 October 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 Business Development and Incubation Program, a Small Business Center, pro bono professional services, a student incubation program, a technology training and conference center, a bio-business center, an institute for sustainability and technology, and a commercial 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 A-B Tech. 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 27,000 students annually.

Location

The Asheville campus is located on Victoria Road in Asheville, North Carolina, a city repeatedly named 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. The South Site is located in the Arden community near Asheville, NC.

College Vision, Mission and Values

Vision

Locally Committed • Regionally Dynamic • World-Class Focused

Mission

A-B Tech inspires, nurtures and empowers students and the community toward a better quality of life through progressive teaching, bold innovation and supportive collaboration.

Values

A-B Tech's core beliefs guide behaviors, decisions and interactions toward accomplishing the mission and achieving the vision. A-B Tech is dedicated to student and community success through:

Excellence: To practice the highest levels of professionalism and performance in providing a quality education for our diverse community. We commit to superior personal, academic and professional standards as we strive for distinction in all aspects of our learning and work.

Learning: To foster a love of learning and to empower individuals to succeed in our local and global community. To be the #1 resource for college and career readiness, transfer education, enrichment, workforce development and life-long learning.

Supportive Environment: To create a safe, nurturing, appreciative, compassionate atmosphere of mutual respect and collaborative partnerships among all individuals.

Innovation: To actively seek creative solutions and cutting-edge initiatives that lead to best practices.

Inclusiveness: To embrace the diversity of cultures, ideas, wisdom and points of view that makes people unique and adds quality to our lives and vitality to the College.

Continuous Improvement: To continually assess the effectiveness of our programs, services and processes to assure that we are doing our best every day and that over time our best gets better.

Non-Discrimination Policy

The Board of Trustees and the administration of Asheville-Buncombe Technical Community College are fully committed to encouraging and sustaining a learning and work environment that is free from prohibited discrimination. The College does not practice or condone discrimination on the grounds of race, national origin, religion, sex, pregnancy, disability, age, veterans' status or genetic information in the administration of its employment policies, educational policies, admission policies, scholarship and loan programs or other school-administered programs.

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

Applicants or current employees:
Director of Human Resources/ADA Coordinator
340 Victoria Road
Asheville, NC 28801
398-7170

Prospective or current students:
Disability Services Office
340 Victoria Road
Asheville, NC 28801
398-7141, 398-7581, or 398-7587

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 K. Ray Bailey Student Services Center. A person who wishes to file a complaint of alleged discrimination on the basis of disability should contact the Director of Human Resources listed above.

Communicable Disease and Occupational Exposure to Blood-borne Pathogens

A-B Tech Community College shall not exclude individuals with communicable diseases unless a determination is made that the individual presents a health risk to himself or others. It is the policy of the College to consider the educational or employment status of those with a communicable disease on an individual basis based on the program of study or work assignment. It is the policy of the College to comply with federal regulations and state statutes regarding blood-borne pathogens as set forth in the Federal Register, 29 C.F.R. § 1910.1030, and the North Carolina Administrative Code, 10A NCAC 41A, by attempting to limit/prevent occupational exposure of employees to blood or other potentially infectious bodily fluids and materials that may transmit blood-borne pathogens and lead to disease or death.

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 email, Internet sessions, or electronic file storage and transmission. When sending or forwarding email 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, email, 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**.

Economic & Workforce Development/ Continuing Education

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

Different instructional approaches are offered to meet community needs such as traditional classroom instruction, individualized instruction, computer-assisted learning, community-based learning centers, on-site classes and training for business and industry, and apprenticeships. Assessment and training consultation is also available 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 programs are coordinated with the Workforce Investment Act (WIA) or the Work First programs of other agencies. These and other similar programs represent joint efforts to bring education and training services to the community.

Training and course work may earn Continuing Education Unit (CEU) credit applicable to certain professions.

The Economic & Workforce Development/Continuing Education Division provides programs for adults age 18 or older. Minors, ages 16 and 17, 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 ages 65 or older are exempt from registration fees.

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 Course Repetition policy guides enrollment in selected types of classes.

Certain workforce 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 certain courses more than once if the repetitions are required for certification, licensure, or recertification.

Programs

Economic & Workforce Development/Continuing Education needs are addressed in four primary areas:

1. Community Enrichment
2. Emergency Services
3. Workforce Training
4. Economic & Workforce Development

Community Enrichment Programs

Community Enrichment 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 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 counties. The Program offers a variety of art classes, from culinary arts to visual arts. The language component includes French, Italian, German, Spanish, and American Sign Language. Recreation, Music, Dance and Film classes such as fly fishing, yoga, contemporary dance, film appreciation and acting as well as Financial Wellness classes attract thousands of adult learners to the campus each year. Home and Garden classes such as backyard chickens, residential landscaping, upholstery, sewing and quilting add to the diversity of the courses offered. The Blue Ridge Heritage Travel Series offers a unique learning experience through day-trips exploring Western North Carolina's most hidden treasures.

Emergency Services Programs

Emergency Services Programs- were created to establish a single point of contact for students, College personnel, and the community in the fields of fire services, law enforcement, and emergency medical services. These programs provide 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 services. Emergency Services Programs also offer numerous specialized classes that meet qualifications and standards required by governing agencies.

Workforce Programs

Workforce 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. Offerings include programs for many occupational areas including: computer training, health occupations, and technical and industrial training. Employability skills and life success skills are provided by Human Resources Development.

Business Solutions & 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, and operating systems. Courses are offered in traditional instructor-led, online, and hybrid formats.

Health Services Programs include training in healthcare professions such as Nurse Aide I, Nurse Aide II, Medication Aide, MEPAP Activity Professional, Ophthalmic Assisting, and Dental Radiology. Students successfully completing the Nurse Aide I program and state exam will appear on the North Carolina state registry for Nursing Assistants. Additional courses are offered to professionals for CEUs in the fields of dental hygiene and veterinary technology.

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

Occupational & Skilled Trades 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. Some of these courses are offered as apprenticeships or to meet certification requirements for employment in careers such as electrical journeymen, building, electrical, mechanical 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.

Economic & Workforce Development

The **Department of Economic & Workforce Development** provides customized training and services that support 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 College partners with businesses of all sizes and types to offer workforce training solutions to strengthen the skill sets of employees and build opportunities for advancement. **Customized Training (CTP)** is a specialized program supporting 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.

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 United States military installations located in North Carolina.

Examples of training opportunities include:

- Blueprint Reading
- Machining, Manufacturing, Braising, Soldering, and Welding
- Forklift Operation and Safety
- CPR/First Aid/Blood Borne Pathogen
- Customer Service
- Leadership Development
- OSHA General Industry and Construction Standards
- Six Sigma, Lean, and APICS
- Building Operator Certification

Business Development, Incubation, and Small Business Center

Business Development and Incubation is a model that allows entrepreneurs a "jump start" for their business and involves a dynamic process that provides physical space, virtual programming, consulting and technical assistance, access to business services and equipment, technology support, guidance in obtaining financing, conference rooms with videoconferencing feature and computers, etc.

The Small Business Center (SBC) provides free one-on-one counseling and advising services to existing and potential small business owners. In addition, a variety of seminars and special events are sponsored.

General Admission

Admissions Policy

1. A-B Tech is an open-door institution, which accepts all applicants who have graduated from high school, hold a GED or adult high school diploma, are at least 18 years of age or older, are emancipated minors, or dual enrollment students.
2. Some programs in the Allied Health and Public Services Division are selective and typically require the high school credential. Admission to these programs is competitive.
3. Undocumented immigrants are eligible for admission based on the qualifications and limitations listed below:
    a. Attended and graduated from a United States public high school, private high school, home school and/or adult high school that operates in compliance with state or local laws.
    b. Must be charged out-of-state tuition and are not considered a North Carolina resident for tuition purposes.
    c. Will be counseled that federal and state laws prohibit states from granting professional licenses to undocumented students.
    d. Students lawfully present in the United States shall have priority over any undocumented immigrant in any program of study when capacity limitations exist.
    e. Must comply with all federal and state laws concerning financial aid.
4. The College will refuse admission to any applicant when it is deemed necessary to protect the safety of the applicant or other individuals. When making this safety determination, the College shall refuse admission to an applicant only when there is an articulable, imminent, and significant threat to the applicant or other individuals. In this case, the College shall document the following:
    a. Detailed facts supporting the rationale for denying admission.
    b. The time period within which the refusal to admit shall be applicable and the supporting rationale for the designated time period.
    c. The condition upon which the applicant that is refused would be eligible to be admitted.
5. The College shall implement an appeals process for applicants denied admission pursuant to this policy.

Admissions Procedure

1. Submit an application for admission to the College. Applications are available online at abtech.edu or in paper format in the Bailey Student Services Center. The preferred method of submission is electronic.
2. Upon receipt of a completed College Foundation of North Carolina (CFNC) application for admission, staff verifies all data for the applicant in the student file in the NCCCS Colleague computer system. Applicants select their program(s) of choice from available academic programs on the CFNC application that are not competitive or limited admission. Students may not register within programs for which they do not meet placement or program prerequisites.
3. Inactive students, who have not attended for two consecutive semesters, excluding summer, will be reverted to the unclassified status, unless they otherwise indicate a program of choice.
4. An electronic file is made for each applicant and all additional supporting documents are linked to this file.
5. Students who want to declare an academic program (classified students) must do the following:
    a. Submit transcripts from other colleges attended if transfer credit is desired. Applicants with prior college credit may not need to take the placement assessment.

    OR

    b. Submit satisfactory SAT or ACT test results (if less than three years old).

    OR

    c. Take the Accuplacer computerized placement test or submit placement test scores for Accuplacer from testing at another college. Students who have earned college credit that is three (3) years or older are strongly recommended to take the Accuplacer placement test at A-B Tech.

    OR

    d. Submit Compass and/or Asset scores from testing at another college

e. Meet with the faculty, program, or transfer advisor for course selection and program assistance. General Occupational Technology students must meet with Bailey academic advisors for course selection and program assistance.

f. Register and pay at designated time.

6. New unclassified (non-degree or non-diploma seeking) applicants will:

a. Complete Accuplacer computerized placement test, if needed. Placement will be required for applicants who plan to enroll in English and mathematics classes or in classes for which English or math prerequisites exist.

OR

b. Bring in satisfactory SAT or ACT test reports which are less than three years old or

OR

c. Submit appropriate transfer credit prior to registering for courses or

OR

d. Submit Compass or Asset scores from another College.

e. Register on WebAdvisor or in the Bailey Student Services Center

f .Pay at designated time.

7. Some allied health programs are selective in nature, due to the high volume of applicants and the limited number of students who can be enrolled in the programs. Selective programs have an application period, which is typically in the fall.

- Applicants must take the Accuplacer placement test and show college level skills on all sections of the test. Other standardized tests used for placement purposes in North Carolina or appropriate transfer credits may be used to show college level skills.
- Applicants who perform acceptably on Accuplacer, another acceptable assessment instrument, or have appropriate transfer credit then schedule themselves at their expense to take the Test of Essential Academic Skills (TEAS) in the designated application period.
- Ultimate selection in the program occurs in the spring semester, and is based upon the student's TEAS composite score, a number of points earned for successful completion of a group of specified courses and residency in Buncombe or Madison County.

8. A smaller number of allied health programs use a modified selective process.

- Application for these programs occurs in the spring semester of each year.
- Applicants must take the Accuplacer placement test and display college level skills on all sections. Other standardized tests used for placement purposes in North Carolina or appropriate transfer credits may be used to show college level skills.
- Applicants who perform acceptably on Accuplacer, another approved instrument, or have appropriate transfer credit then schedule themselves at their expense to take TEAS before a prescribed deadline. Ultimate selection into the program is based upon the student's composite TEAS score and residency in Buncombe or Madison County.

Contact Information for all Admissions Questions and Matters:Please visit the K. Ray Bailey Student Center, call 398-7520 or contact admissions@abtech.edu for assistance with the admissions process or to receive additional assistance.

Distance services are also available for not-present students at distanceadvising@abtech.edu.

Concurrent High School Enrollment

The **Career and College Promise Program** offers structured opportunities for qualified high school juniors and seniors to accelerate completion of college certificates, diplomas, and associate degrees that lead to college transfer or provide entry-level job skills. Academic credits earned through Career and College Promise shall enable students who continue into postsecondary education, after graduating from high school, to complete a postsecondary credential in less time than would normally be required.

A-B Tech offers three types of Career and College Promise pathways: College Transfer Pathways, Career Technical Education Pathways, and Cooperative-Innovative High School Programs.

College Transfer Pathways include at least 30 semester hours of transfer courses, including English and mathematics, that are available to qualified junior and senior high school students.

Career Technical Education Pathways lead to a certificate or diploma aligned with a high school career cluster. These pathways are designed for accelerated high school juniors and seniors who are ready to get a head start on career and technical courses that will lead to a career.

Cooperative-Innovative High Schools are designed for motivated students looking for a non-traditional high school experience. These small high schools partner with A-B Tech to provide local students with a comprehensive and accessible education. A-B Tech is affiliated with three cooperative-innovative high schools, two that are early colleges and one that is a middle college.

Early colleges, statewide, are rigorous programs in which students can earn a high school diploma and associate degree simultaneously. Early college students start in the ninth grade, and can complete the program in five years. A-B Tech has two partner early colleges:

- Buncombe County Early College, located on the main campus of A-B Tech in Asheville.
- Madison Early College High School, located in Mars Hill.

Buncombe County Middle College is also a cooperative-innovative high school. Located on the main A-B Tech campus in Asheville, it provides juniors and seniors with a non-traditional setting for completing a high school diploma and earning college credits.

For more information, contact advisors at 398-7715, 398-7516.

New Student Orientation

In order to make the A-B Tech experience as successful as possible, all incoming curriculum students are required to complete a New Student Orientation session. Students can complete the New Student Orientation either in a classroom setting or online. The program will include all the necessary tools and resources to help ensure student success. Students can schedule their orientation at newstudents.abtech.edu. New student orientation must be completed before registering for classes.

Competitive and Limited Admission Programs

Some programs are competitive and selective in nature, due to the high volume of applicants and the limited number of students who can be enrolled in the programs. These programs have separate application periods and admissions requirements.

Competitive Allied Health and Public Service Programs

- Associate Degree Nursing
- Practical Nursing
- Dental Assisting
- Dental Hygiene
- Radiography
- Medical Sonography
- Surgical Technology

Modified Competitive Allied Health - Public Service and Emergency Services Programs

- Emergency Medical Science (New process for Fall 2013 class)
- Pharmacy Technology
- Medical Assisting
- Medical Laboratory Technology
- Veterinary Medical Technology

Limited seat programs have restricted capacity due to clinical site, resource and/or lab space availability. Students are accepted into these programs on a first come, first served basis once minimum program eligibility requirements are met. These programs have separate application periods and admissions requirements.

Limited Seat Programs

- Cosmetology
- Esthetics

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

- Manicuring
- Medical Coding
- Phlebotomy

Contact Information for all Competitive, Modified Competitive and Limited Seat Programs:

Please see an academic advisor in the K. Ray Bailey Student Center, call 398-7520 or contact admissions@abtech.edu for specific instructions and application details.

Distance services are available for not-present students at distanceadvising@abtech.edu.

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 North Carolina Diagnostic Assessment and Placement (NC-DAP) test. Students who are unclassified (not desiring to be enrolled in a program) will need to take the placement test if they desire to take a mathematics, English, reading course or any course for which math or English are prerequisites. Alternate testing formats will be made available to individuals with disabilities upon request to the Support Services office. Documentation of disability will be required prior to the establishment of accommodations for placement testing.

All students 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 admission information in the admissions section of the College website at abtech.edu. This information is also available in the K. Ray Bailey Student Services Center.

Test Preparation and Re-Testing Procedure

It is incumbent upon students to prepare fully before taking NC-DAP, the college's placement assessment tool. The NC-DAP has very high reliability and validity. To assist students in preparing, resources are listed at placementtesting.abtech.edu. Students may only take the placement test once in a three year period with the following exceptions:

- Applicants for limited and competitive allied health curricula may take the test once each year during the application period.
- Students who tested while enrolled in high school may test when applying for admission to the College.
- Students granted approval to retake the test by the Chair of Developmental Studies, Director of Student Advising and Support Services, or Vice-President for Student Services.

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.

Students may register for the placement test online at placementtesting.abtech.edu. Students must present a picture I.D. to take the placement test. Placement testing is available both day and evening hours. 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 Placement

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 Education 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.

A-B Tech ID Cards

A-B Tech issues student ID cards to all curriculum students during the registration process at the K. Ray Bailey Student Services Center. ID Cards can be produced with a current application on file and a current government-issued photo ID card (driver's license, passport, military ID).

After receiving an A-B Tech ID card, students should take it to the Holly Library to be activated in the Library's database. With their library-activated photo ID card, students can check out materials, use the research computers, and access reserve items. They must present the card each time they wish to check out library materials.

Transfer Credit, Credit-by-Exam, Articulated Credit, CLEP and Advanced Placement Credit, Continuing Education and Licensure Credit.

Transfer Credit from Other Institutions

Asheville-Buncombe Technical Community College will accept credit in transfer from institutions recognized by a regional accrediting agency. Transcripts must be unopened and officially issued by the credit granting institution. Credit may be awarded for appropriate military courses. Students must submit a curriculum application before transfer credit is evaluated. Credit obtained outside the U.S. or Canada must be evaluated by an educational credential evaluation services that is a member of the National Association of Credential Evaluation Services (NACES). Students should contact internationalinfo@abtech.edu for more information.

Only grades of "C" or better will be considered for transfer. Pass or Proficiency grades will not be considered for transfer. Credits will be evaluated in the context of the current catalog. The Office of Records and Registration in consultation with Department Chairs will determine the appropriate A-B Tech course credit to award. Some departments may require a skills assessment before transfer credit is awarded. In such cases the decision of the department is final.

Credit will be assigned without quality points and will not be calculated into the student's A-B Tech grade point average. If a transferred course is also taken at A-B Tech, the local grade will be calculated in the grade point average.

No more than 75% of credit required for a degree, diploma or certificate program may be transferred credit.

Credit by Examination (Proficiency Testing)

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 be approved by the Vice President for Instructional Services.

Procedure:

1. Enroll as a credit student in the course to be challenged and pay tuition. There is no extra charge for full-time students who are taking at least 16 credit hours of non self-supporting coursework.
2. Present evidence of proficiency, complete the written request form, and have the request approved prior to the 10 percent point of the semester (or 10% of the minimester session).
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. Students who do not achieve an "A" or "B" on the proficiency exam are encouraged to remain in the class as a regular student.
6. 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 Instructional Services.

Articulated Credit

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 Career Education (RACE) are met. Students must see the Admissions Office in the K. Ray Bailey Student Services Center.

Advanced Placement and CLEP Credit

Advanced Placement (AP) scores of 3 or higher will be used to grant college equivalent credit. CLEP scores of 50 or higher will be considered for awarding college credit.

Licensure and Certification Credit
A-B Tech awards curriculum credit for select licensure and certifications. Contact your Advisor or Department Chair for information.

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 M-1 or F-1 status. A-B Tech does not issue I-20 forms for continuing education programs, English as a Second Language, or 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. To demonstrate English proficiency, international applicants whose native language is not English must take the TOEFL. Applicants already in the Asheville area may substitute the Accuplacer Placement Assessment, which can be taken at A-B Tech Community College or another North Carolina Community College.

International applicants should submit all admission credentials together. A written admissions application, international application supplement, Test of English as a Foreign Language (TOEFL) scores, official high school transcripts and English translations (if applicable), college transcripts and English translations (if interested in transfer credit, an evaluation by a member agency of www.naces.org), and affidavits of financial support with supporting documentation are all necessary for an admission decision.

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.

Information, including all necessary application materials and estimated cost of attendance, are also available online at abtech.edu/content/student-services/admissions/International-Applicants. Email inquiries should be addressed to internationalinfo@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.

Proof of residency includes being employed within the state of North Carolina, paying NC taxes, having a current NC driver's license, and voting in NC. Anyone having a question regarding resident status should contact the Admissions Office in the K. Ray Bailey Student Services Center.

Tuition

Fall, Spring, and Summer Semester:

N.C. residents per semester.....$1,104.00

Nonresident of N.C.....$4,176.00
(16 or more credit hours)

N.C. residents per credit
hour per semester.....$69.00

Nonresident of N.C.
per credit hour per semester.....$261.00
(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 up to 6 credit hours and registration fees for some Continuing Education classes.

* *Return Check Charge is subject to change.*

Self Supporting Summer Semester

Per Semester…….....$1472.00

Per credit hour…….....……...$92.00

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. Students enrolled for nine or more on-campus credit hours will be charged a student activity fee of $19 for the fall and spring semesters. Students enrolled for eight or fewer on-campus credit hours will be charged a student activity fee of $14 for the fall and spring semesters.

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 is $16 per semester for curriculum students and $5 per course for occupational continuing education classes.

Printing Fees

Students are allowed 100 black-and-white copies at no charge per semester. Additional black-and-white copies are $0.08 per page. Color copies are charged at a rate of $0.15 per page.

Consumable Supply Fee

Certain courses have additional fees attached to them to pay for consumable supplies not covered by tuition. Consumable fees for academic programs will vary by class and are available online at **abtech.edu/catalog/consumable-supply-fee**.

Student Insurance

A group policy, providing insurance protection, is maintained by the College and all curriculum students are **required** to subscribe to such coverage. The only exception is for students taking only off-campus courses. The cost of accident insurance to the student is $1.40 per semester.

Transcript Fee

The College charges a transcript fee of $5 per transcript and a $10 fee per transcript on-demand. This fee is approved annually by the Asheville-Buncombe Technical Community College Board of Trustees and is subject to change.

Additional Costs

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	$900-1,900
Supplies	$200-1,000
Arts and Sciences: A.A., A.S., A.F.A.	
Books	$1,200-2,000
Supplies	$150-600
Business and Hospitality Education	
Books	$1,000-2,500
Supplies	$200-1,000
Engineering and Applied Technology	
Books	$700-1,000
Supplies	$200-1,100

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. Prior to the purchase of a calculator for use in class, students should consult with their instructor.

Tuition and Fee Refunds

The tuition policy is set by the State of North Carolina and is subject to change. A 100% refund shall be made if a student drops the class by submitting the required paperwork or completing the drop action prior to the first day of classes for the term as noted in the College Calendar on the website at abtech.edu/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 the class prior to or on the official 10% point of the term. Insurance, technology, consumable, and student activity fees are not refundable. Federal regulations, if different from above, will overrule this policy.

For classes that start a week or more into a term, a full refund will be provided if a student drops a class prior to the beginning date of the class. A 75% refund will be provided for a class dropped on the beginning date through the 10% point of the class.

Only hours dropped below a total of 16 credit hours are eligible for a refund.

Tuition Refund Process

To be eligible for 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 (K. Ray Bailey Student Services Center, Madison Site Office) a Drop/Add Registration Change Notice during business hours.
   b. By having an advisor process the drop. The student is responsible for ensuring this has been done.

Student Rights and Responsibilities

Code of Student Conduct

The Board of Trustees establishes and maintains a learning environment that supports students, and the vision, mission, and values of the institution. There are behavioral expectations that outline the responsibilities and proper practices for all students at the College. When the Code of Conduct is challenged, the following types of discipline include but are not limited to: verbal warning, written warning, a failing grade for an assignment or exam, probation, administrative withdrawal from a course, restitution for damages, consequences adapted to a specific violation, suspension, expulsion or actions recommended by a Threat Assessment Team.

The President shall have final approval in the expulsion of a student.

Academic-Related Violations

Academically-related violations include academic integrity and other matters that have a negative impact on the teaching and learning environment.

Faculty members are responsible for ensuring the academic integrity of the College. Violations of academic integrity are considered serious offenses. Students are forewarned that some acts of academic dishonesty may result in action being taken by outside individuals or entities.

The following matters will be referred to the Vice President for Instructional Services or his or her designee:

1. **Plagiarism:** 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. If a student is uncertain about what constitutes plagiarism, he or she should discuss this with the class instructor.
2. **Cheating:** Cheating includes using notes or other material without permission from the faculty on an exam; receiving information from another student during an exam; obtaining a copy of an exam or questions from an exam prior to taking the exam; submitting someone else's work as one's own; or having someone else take one's exam and submitting it as his or her own.
3. **Aiding Acts of Academic Dishonesty:** Providing information to another student with the awareness that the student intends to use it for deceptive purposes.
4. **Violations of Normal Classroom Behavior** such as, but not limited to, being disobedient, showing disrespect, causing disruption of the classroom or not abiding by professional conduct. These behaviors are also considered academically-related violations. The intent is to make sure that the learning environment is not compromised.

Non-Academic Related Violations

Non-Academically Related Violations of the Code of Student Conduct will be referred to the Vice President for Student Services or his or her designee. These violations include:

1. **Alcoholic Beverages:** Students may not possess or use alcoholic beverages on campus. Students may not be under the influence of alcoholic beverages on campus or at College-affiliated activities or events.
2. **Animals:** Students may not have an animal of any kind on campus. This includes animals left within a vehicle. Working dogs, such as police dogs or service dogs, are permitted.
3. **Assault and/or Battery:** Students 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.
4. **Bullying:** Students 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: (a) places a person in actual and reasonable fear of harm to his or her person or damage to his or her property; or (b) 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 or her job."
5. **Damage to Property:** Students may not damage property of the College or of any other person working at or attending the College.
6. **Disobedience (Outside the classroom):** Students may not disobey the reasonable directions of College employees, including administrators, faculty members, security officers, and other staff employees.
7. **Disorderly Conduct (Outside the classroom):** Students may not conduct themselves in a way

which will interrupt the academic mission of the College or which will disturb the peace of the College.

8. **Disrespect (Outside the classroom):** Students are expected to treat all College employees with respect and courtesy, particularly when and if disagreements arise.
9. **Disruption:** Students may not disrupt the normal activities of the College by physically or verbally interfering with instruction, meetings, traffic, or scheduled administrative functions.
10. **Drugs:** Students may not possess, use, or be under the influence of any narcotic or illegal drugs on campus or at any College-affiliated activities or event. This is in violation of the laws of the state of North Carolina or of the United States.
11. **False Information:** Students may not present to the College or its employees false information; neither may they knowingly withhold information which may have an effect on their enrollment or their status in the institution and which is properly and legally requested by the College.
12. **Gambling:** Students may not gamble on campus or at any College-affiliated activities or events.
13. **Possession of Weapons:** Students may not have a weapon of any kind, including a knife, stun gun, or any firearm in their possession on campus or at any College-affiliated activities or events. Law enforcement officers are exempt from this prohibition. This includes facsimiles of weapons.
14. **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.
15. **Sexual and Other Unlawful Harassment:** Students may not harass any member of the College community, including other students, employees, or other persons on the College campus. This prohibition includes sexual, verbal or physical harassment for any reason including race, color, religion, sex, national origin, disability, veteran's status, creed, sexual orientation, or political affiliation.
16. **Skate Boards and Roller Skates:** Skate boards and roller skates are not permitted to be used on campus.
17. **Stalking:** Students 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.
18. **Theft:** Students 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.
19. **Threats:** Students may not engage in any 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.
20. **Tobacco:** Students may not use tobacco of any form on campus or at any College-affiliated activities or events.
21. **Unauthorized Access to Records:** Students may not access, view, copy or change official College records without official authorization to do so.
22. **Use of the Internet:** The College has an extensive policy for appropriate use of the Internet. Users of College computers acknowledge the policy whenever they sign on. Students may not use the College's access to the Internet for access to sexually explicit material or for downloading music. Email accounts are provided for student use; however, no right of privacy exists for use of email.
23. **Use of Social Media:** Students should obey their social media platforms terms of use. Students may not make, or cause to be made, communications (including electronically or through social media) to another person in any manner likely to seriously annoy or cause alarm. Social media may not be used to breech privacy, discriminate or harass. Students may not make, transmit, or attempt to transmit audio or video of any person(s) on College property where there is an explicit expectation of privacy. Any posts or tweets deemed inappropriate on an A-B Tech social web site or blog will be deleted immediately and may result in having access to the site blocked permanently.

Violations of the Code of Student Conduct

A student who violates the Code of Student Conduct may be referred to the Vice President for Instructional Services or his or her designee or to the Vice President for Student Services or his or her designee, depending on the nature of the violation. Students who have been charged with a violation of these regulations may be assigned consequences based upon the seriousness of the offense.

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.

Sanctions for violations may include but not be limited to: verbal warnings, written warnings, a failing grade for an assignment or examination, administrative withdrawal from a course, restitution for damages, consequences adapted to the specific violation, suspensions, expulsions or actions recommended by a Threat Assessment Team.

The President shall have final approval in the expulsion of a student.

Threat Assessment

When a violation leads to a concern about the safety of a student or members of the College community, a Threat Assessment Team will review and make recommendations to the Vice President for Student Services or his or her designee 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 or his or her designee may immediately suspend the student and remove him or her from campus for no more than 14 calendar days from the date the suspension is instituted, pending a hearing. In this situation, the Vice President for Student Services or his or her designee must convene a Threat Assessment Team. For a copy of this policy, see the Vice President for Student Services.

For violations that do not require the implementation of the Threat Assessment Policy, the appropriate College administrator will review initial disciplinary referrals and may suspend a student for up to 10 College business days while the review is conducted. Students are allowed to appeal any disciplinary action, unless they have waived this right, and will be informed of their rights of due process (See Student Due Process).

Student Due Process

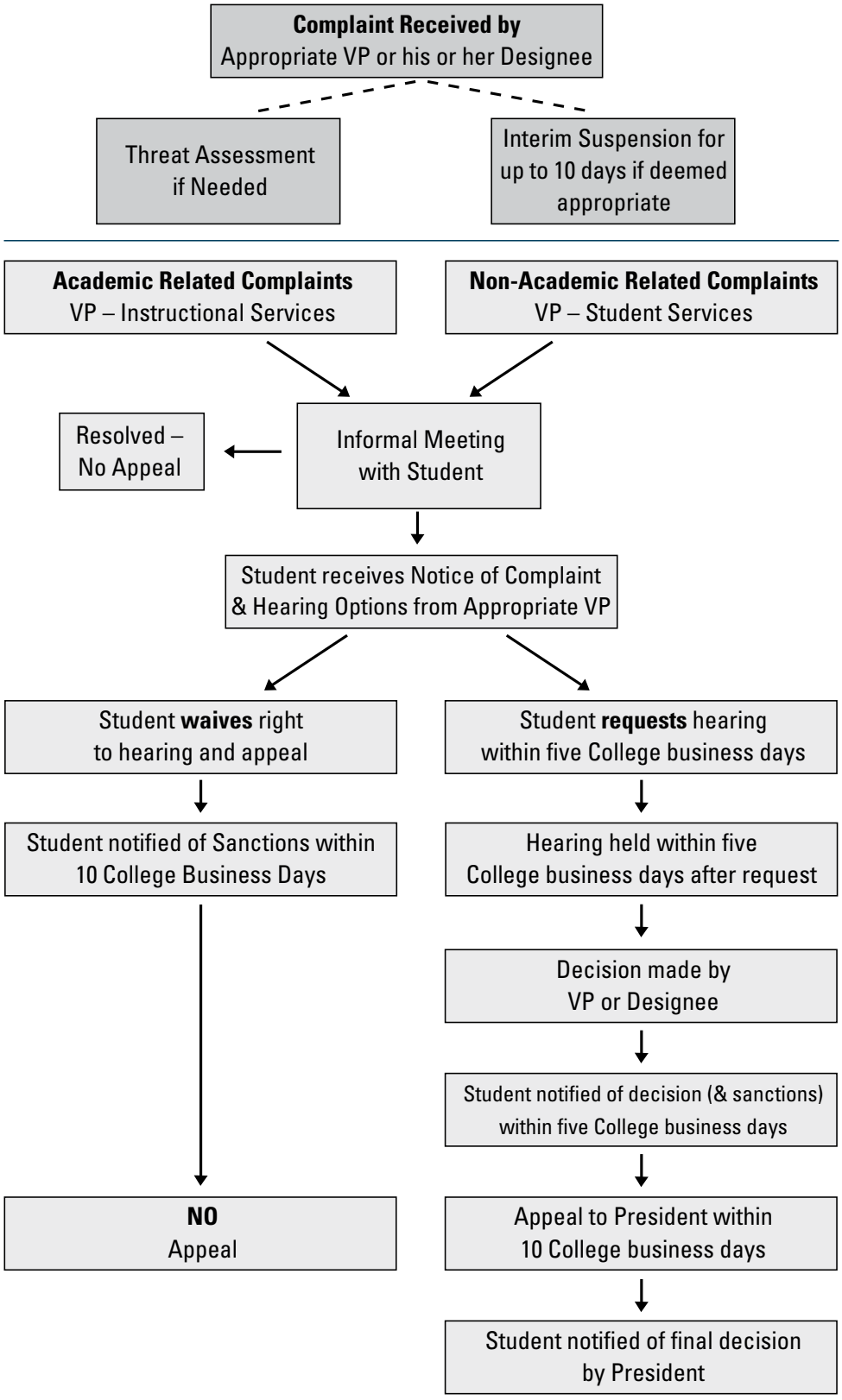
Students have the rights of due process when accused of a violation of the Code of Student Conduct:

1. The student may request to have an informal meeting with the appropriate vice president to attempt to discuss and resolve the issue.
2. If the violation of the Code of Student Conduct is not resolved, the student shall receive written notice of the provision of the Code of Student Conduct which he or she is accused of violating and a summary of the relevant facts. Students shall also be informed of their due process rights.
3. If a student's behavior is egregious or disruptive to the teaching and learning environment or to campus safety, the appropriate vice president or his or her designee may suspend the student on an interim basis for up to 10 College business days.
4. Within five business days after receipt of the notice of violation of the Code of Student Conduct, and suspension when warranted from the appropriate vice president, the student may request, in writing, a hearing before the Vice President for Instructional Services or his or her designee for academically-related violations or a hearing before the Vice President for Student Services or his or her designee for all other violations.
5. The students may waive his or her rights to a hearing immediately and accept the sanctions implemented by the appropriate vice president. Failure to request a hearing within five College business days will be considered a waiver of the right to a hearing and any subsequent appeal. If the student requests a hearing, the appropriate vice president shall inform the student of the date, time and place for the hearing. The hearing shall be scheduled within five College business days after receipt of the student's request for a hearing.
6. Prior to the hearing, the student has the right to review all evidence, including written statements made against him or her. Strict rules of evidence do not apply in the hearing.
7. At the hearing, the student may present witnesses and evidence. All pertinent parties have a right to speak and be questioned during the hearing. The student will be allowed to be accompanied by an advisor, who may not be an attorney.
8. The student has the right to a recording of the hearing.
9. The student has the right to a written notice of a decision as soon as possible but no later than five College business days after his or her hearing.

The student has the right to appeal to the President any action taken by the appropriate vice president or his or her designee. Any appeal must be in writing and be submitted to the President's office within ten College business days. The appropriate vice president will forward the appeal, along with all documentation concerning the matter, to the President whose decision will be final.

The procedure above is in effect for all students. All meetings and/or hearings for distance learners will be arranged using mail, fax, conference calls, or other agreed upon electronic means.

Student Due Process Flow Chart



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. Students should inform the instructor in advance if they know they are going to miss class. They should also take responsibility for getting missed assignments from other students. Students should not expect to be allowed to make up work, such as unannounced quizzes or tests, after an absence. Instructors are not responsible for re-teaching the material missed because of absence.
2. Attendance. Students are expected to attend class for the entire class time. Students should not enter late or leave early. Exceptions may occur, particularly under emergency circumstances, but students should be prepared to explain tardiness to the instructor after class. Likewise, the need to leave early should be explained to the instructor before class.
3. Attitude. Students are expected to maintain a civil attitude in class. They may not use inappropriate or offensive commentary or body language to demonstrate attitude regarding the course, the instructor, assignments, or fellow students.
4. Mobile Devices. Students may not receive or make calls, receive or send text messages, or use personal electronic devices in other ways during class. It is their responsibility to turn off mobile devices prior to entering class.
5. Conversation. Students may not carry on side conversations in class.
6. Food, Drink, and Tobacco. Students may not have food or drink in class, or use tobacco of any form on campus.
7. Guests. Students may not bring guests, including children, to class.
8. Internet. Students may use the Internet for valid, academic purposes only. Students may not use it for open access to other non-academic sites, which are unrelated to the course.
9. Other Activities in class. Students may not work on other activities while in class. This includes homework for other courses or other personal activities.
10. Personal Business. Students needing to transact personal business with the instructor should plan to do this before or after class.
11. Profanity and Offensive Language. Students may not use profanity or offensive language in class.
12. Sleep. Students should not sleep in class.
13. Personal Protective Equipment. Students must properly wear personal protective equipment at all times in any area of the College in which it is required.
14. Fragrance. Students should avoid wearing strong fragrances of any kind as other students may be allergic to or offended by 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 by referral to the Vice President for Student Services or his or her designee for disciplinary action.

Student Complaints

The College has two policies, one for grade appeals and one for student appeals. The following associated procedures should be followed:

Grade Appeals

It is the responsibility of faculty and students to attempt, in good faith, to resolve disputes regarding course grades. If such discussions are unsuccessful, the student shall be entitled to initiate the grade appeals procedure if he or she has reason to believe that a course grade is inaccurate.

No student appealing any decision shall be subjected to harassment or intimidation or be in any way discouraged from filing an appeal pursuant to this procedure.

At any stage of the appeal process, all parties shall have the right to be accompanied by another person of their choice, who may not be an attorney.

The Vice President for Instructional Services shall monitor the handling of grade appeals through this procedure to ensure correct and prompt compliance by all parties.

Appeals Procedure Regarding Course Grades

A. Students are strongly encouraged to first discuss the course grade with the involved instructor as soon as possible.

B. The student will submit the written grade appeal form within six weeks of the start of the next term. The form will clearly explain the student's complaint as well as the student's proposed resolution of the complaint. The instructor will be given the opportunity to

read the student's written complaint and to meet with the student one more time. Alternately, the instructor may sign the appeal form indicating that he or she is unable to resolve the problem. The student will then be directed to the department chair of the instructor, who will meet separately with the student to attempt to resolve the issue. If the department chair is unable to resolve the issue with the student, then the department chair will sign the appeal form and direct the student to the Vice President for Instructional Services. Completion of the form by the instructor and chair does not in any way indicate agreement with the complaint. Each party may propose solutions to the disagreement that, if accepted by both parties, results in resolution of the appeal. If either party refuses to accept a proposed solution, the matter is referred to the Grade Appeals Committee.

C. If the student has difficulty contacting the department chair, he or she should contact the Vice President for Instructional Services, who is responsible for assisting with contacts.

D. The Vice President for Instructional Services shall maintain files of all course grade appeal forms submitted to his or her office. Such forms, together with other records indicating final action on a problem, shall be maintained for a minimum of five years.

E. Students enrolled in distance courses may find it difficult to come to campus in order to pursue an appeal. In these instances, the process may be handled by telephone with the instructor involved, the department chair, and the Vice President for Instructional Services, and by mail, fax, or other agreed upon electronic means for submission of the appeals document. As with other appeals, the Vice President for Instructional Services will closely monitor the progress, ensuring the contacts are made in a timely fashion and documents are submitted properly. If it becomes necessary for an appeal to go to the Grade Appeals Committee, conference calling or any other electronic means agreed upon by both parties will be used. When conference calling is employed for a hearing, no business can be conducted without the student being present on the telephone, with the exception of the deliberations of the Committee in executive session.

Grade Appeals Committee

A. Composition of the Grade Appeals Committee

The Grade Appeals Committee will consist of no less than five voting members and will be composed as follows to ensure the representation of all constituent groups in the College community.

- Two student representatives
- Two faculty representatives
- One Student Services representative
- One non-faculty employee, and
- One non-teaching professional representative at the level of coordinator or higher who will serve as chairperson.

B. Grade Appeals Committee Hearing and Procedures

1. The Vice President for Instructional Services shall inform the instructor, the involved department chair, and the student of the date, time, and place of the appeals hearing. The Vice President for Instructional Services shall convene the Grade Appeals Committee no later than 15 days after receipt of the request for a hearing.
2. When an appeal is made by a student with a disability, the Committee, at its sole discretion, may consult with or include the Disability Services Coordinator in the hearing process for such person's knowledge of disability and Disability Services issues and requirements.
3. A quorum to conduct Committee business and vote is defined as a minimum of four members. In no case shall any business be conducted unless at least one student and one faculty member are present. There will be an audio recording of the appeal hearing.
4. The decision of the Grade Appeals Committee will be rendered within two business days of the hearing and conveyed to the student.
5. The decision of the Grade Appeals Committee may be appealed to the President whose decision will be final. The President's review does not include a new hearing, and his or her review shall consist of evidence presented at the hearing. The President will affirm, modify, or reject the decision of the Grade Appeals Committee within five business days of the hearing date.
6. In addition to the committee members, the following persons are permitted to attend the hearing:
a. Involved parties.
b. An advisor for the appealing individual. Advisors may not be attorneys.

c. Administrative officers of the College who may be directly concerned with the dispute.

7. If a student fails to attend the scheduled hearing, the appeal is considered to be dropped.

8. All steps of the appeal procedure for students shall be closed to the public, and all documents generated in the course complaint shall be confidential except to authorized College Officials.

Availability of Information

The Grade Appeals Policy and Procedure are available on the College website.

Student Appeals

a. It is the responsibility of all employees and students to attempt, in good faith, to resolve disputes regarding actions taken by College employees that are perceived to be unfair or unjust. If such discussions are unsuccessful, the student shall be entitled to initiate the appeals procedure.

b. No student appealing any decision shall be subjected to harassment or intimidation or be in any way discouraged from filing an appeal pursuant to this procedure.

c. At any stage of the appeal process, all parties shall have the right to be accompanied by another person of their choice, who may not be an attorney.

d. The Vice President for Student Services or his or her designee shall monitor the handling of appeals through this procedure to ensure correct and prompt compliance by all parties.

Appeals Procedure

a. Students are strongly encouraged to first discuss the disputed matter with the involved employee as soon as possible.

b. It is the responsibility of the student to complete and submit a written appeal form within two weeks of the date when the matter occurred. The form will clearly explain the student's complaint as well as the student's proposed resolution of the complaint. The employee will be given the opportunity to read the student's written complaint and to meet with the student one more time. Alternately, the employee may sign the appeal form indicating that he or she is unable to resolve the problem. The student will then be directed to the supervisor of the employee who will meet separately with the student to attempt to resolve the issue. If the supervisor is unable to resolve the issue with the student, then the supervisor will sign the appeal form and direct the student back to the Vice President for Student Services. Completion of the form by the employee and supervisor does not in any way indicate agreement with the complaint. Each party may propose solutions to the disagreement that, if accepted by both parties, results in resolution of the appeal. If either party refuses to accept a proposed solution, the matter is referred to the Student Appeals Committee.

c. If the student has difficulty contacting the supervisor, he or she should contact the Vice President for Student Services or his or her designee, who is responsible for assisting with contacts.

d. The Vice President for Student Services or his or her designee shall maintain files of all appeal forms submitted to his or her office. Such forms, together with other records indicating final action on a problem, shall be maintained for a minimum of five years.

e. Students enrolled in distance courses may find it difficult to come to campus in order to pursue an appeal. In these instances, the process may be handled by telephone with the employee involved, the employee's supervisor, and the Vice President for Student Services and by mail, fax, or other agreed upon electronic means for submission of the appeals document. As with other appeals, the Vice President for Student Services will closely monitor the progress, ensuring the contacts are made in a timely fashion and documents are submitted properly. If it becomes necessary for an appeal to go to the Student Appeals Committee, conference calling or any other electronic means agreed upon by both parties will be used. When conference calling is employed for a hearing, no business can be conducted without the student being present on the telephone, with the exception of the deliberations of the Committee in executive session.

The Student Appeals Committee

A. Composition of the Student Appeals Committee

The Student Appeals Committee will be comprised of no less than seven members and will be composed as follows in an effort to ensure the representation of all constituent groups in the College community.

- Two student representatives,
- Two faculty representatives,
- One Student Services representative,`
- One non-faculty employee, and
- One non-teaching professional representative at the level of coordinator or higher who will serve as chairperson.

B. Student Appeals Committee Hearing and Procedures

1. The Vice President for Student Services or his or her designee shall be responsible for informing the employees and supervisor involved and the students of the date, time, and place of the hearing. The Vice President for Student Services or his or her designee shall convene the Student Appeals Committee no later than 15 calendar days after receipt of the request for a hearing.
2. When an appeal is made by a disabled student, the Committee, at its sole discretion, may consult with or include the ADA Coordinator in the hearing process for such person's knowledge of disability and ADA issues and requirements.
3. A quorum to conduct Committee business and vote is defined as a minimum of four members. In no case shall any business be conducted unless at least one student and one faculty member are present. There will be an audio recording of the appeal hearing.
4. The decision of the Student Appeals Committee will be rendered within two business days of the hearing and conveyed to the student.
5. The decision of the Student Appeals Committee may be appealed to the President whose decision will be final. The President's review does not include a new hearing and his or her review shall consist of evidence presented at the hearing. The President will affirm, modify, or reject the decision of the Student Appeals Committee within five business days of the hearing date.
6. In addition to the committee members, the following persons are permitted to attend the hearing:
   a. Involved parties
   b. An advisor for the appealing individual. Advisors may not be attorneys.
   c. Administrative officers of the College who may be directly concerned with the dispute.
7. If a student fails to attend the scheduled hearing, the appeal is considered to be dropped.
8. All steps of the appeal procedure for students shall be closed to the public, and all documents generated in the course of a complaint shall be confidential except to authorized College officials.

Availability of Information

The Student Appeal Policy and Procedure is available on the College website.

Exception for Disciplinary Appeals

When these procedures are used to appeal a disciplinary action taken by the Vice President for Student Services or his or her designee, in his or her capacity as the College discipline officer, the appeal will be forwarded directly to the President. An appeal of a disciplinary action taken by the Vice President for Student Services must be submitted in writing to the Vice President for Student Services or his or her designee within five business days of the action. He or she will forward the appeal, along with all documentation concerning the matter, to the President, whose decision will be final following an on-the-record review. The President may, in his or her discretion, allow the parties to supplement the record if additional information is needed for the fair disposition of the matter.

Privacy of Student Records

All student records, including records of distance learners, will be maintained with utmost confidentiality and in compliance with the federal Family Educational Rights and Privacy Act of 1974 (FERPA). All regulations pursuant to implementation of this policy must comply with FERPA.

1. Definitions:

   a. Directory Information: 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, email address, date and place of birth, major field of

study, dates of attendance and degrees received.

b. Education Record: 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: 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: 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: 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: Any records, files, documents and other materials that are:

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

g. Legitimate Educational Interest: The need for an individual to know the content of a student's education record for purposes of educational-related matters (including 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.

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

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

2. 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.

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

- to A-B Tech officials who have legitimate educational interest in the records.
- to officials of another college or university in which a student seeks to enroll.

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 in order to achieve success in the class and to develop desirable personal traits necessary for success in employment. Missing instructional time is detrimental to learning and class success. 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.

It is mandatory that the student attend at least once during the first 10% of the course. For online classes, a graded activity must be submitted during the first 10% of the course. **Failure to attend or submit an assignment during this time frame will result in a grade of "No Show" The student will not be allowed to continue in the course or to receive a refund.**

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.

Tardies

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

To receive course credit, a student should attend a minimum of 85% of the contact hours of the class. If absences exceed 15% of course contact hours, a student may be dropped from the class unless the student follows the official withdrawal procedure before the withdrawal deadline for the class.

Allied Health Students

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. If absences exceed 10% of course contact hours, the student may be dropped from the class, unless the student follows the official withdrawal procedure before the withdrawal deadline. The 90% minimum attendance requirement applies to these major area course prefixes: NUR, DEN, EMS, MED, MLT, SON, PBT, PHM, RAD, SUR and VET.

Cosmetology Students

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. If absences exceed 5% of course contact hours, the student may be dropped from the class unless the student follows the official withdrawal procedure before the withdrawal deadline. The 95% minimum attendance requirement applies to the major area course prefix: COS.

Developmental Students

To receive course credit when enrolled in a developmental course, a student should attend a minimum of 90% of the contact hours. If absences exceed 10% of course contact hours, the student may be dropped from the class unless the student follows the official withdrawal procedure before the withdrawal deadline. The 90% minimum attendance requirement applies to the following course prefixes: DMA, DRE, ENG 080/090/090A, RED.

Prerequisites and Co-requisites

Some courses have prerequisite and/or co-requisite course requirements. All prerequisites must be satisfied prior to enrolling in a course. A prerequisite course can be satisfied by passing the course at A-B Tech, or by transferring credit for the course from another college or university according to the college's transfer credit policy. If a prerequisite course is currently being taken, the subsequent course can be registered, but if the prerequisite course in progress is not passed, the subsequent course must be dropped.

A co-requisite course must be taken in the same term. In some cases a co-requisite can be taken in a prior term or transferred to A-B Tech. Contact your advisor for assistance.

Under some conditions, a Department Chair may waive a pre or co-requisite class based on a student's demonstrated knowledge of the requisite course material. Requisite waivers do not eliminate a course from a program of study; waived requisites must be taken to satisfy degree, diploma or certificate program requirements.

Course Substitutions

Curriculum course substitutions in a degree, diploma or certificate program must be approved by the Dean responsible for the course being substituted.

Introduction to College Courses for Degree-Seeking Students

Degree-seeking students who enroll in a college program requiring ACA 115, ACA 122, EGR 110, or any equivalent course, must enroll in and successfully complete the course with a grade of "C" or better in their first semester of enrollment. Students who do not meet this requirement will be prevented from registering for future semesters without enrolling in the course.

Any student who places into more than one developmental course must enroll concurrently in ACA 115, ACA 122, or EGR 110 as appropriate for his or her curriculum.

Students transferring a similar course or who transfer in 24 or more transfer credit hours of college-level work, will be permitted to substitute another course for ACA 115, ACA 122, or EGR 110and will not be subject to the above requirement and subsequent restrictions.

Schedule Adjustments

Dropping a Class

Students may drop classes without a grade through the 10% point of the semester or the 10% point of a minimester (less than full term) session. Classes can be dropped prior to the term via WebAdvisor. After the term begins the drop must be processed by Student Services (in the K. Ray Bailey Student Services Center), by an Advisor or at the Madison or South site. Dropped classes do not appear on the official transcript.

Adding a Class

A class may be added until it meets for the first time (through the first day for an on-line class). Prior to the term, classes may be added on-live via WebAdvisor. After the term begins the add request must be processed in person by Student Services (in the K. Ray Bailey Student Services Center), by an Advisor or at the Madison or South site.

Withdrawing from a Class

After the 10% point and through the 75% point of the term (or after the 10% point through the 75% point of a minimester session) a student may withdraw from a class by submitting a Withdrawal Request to Student Services in the Bailey Building or to staff at the Madison or South sites. Withdrawal forms must not be mailed or put in a drop box. Distance students must contact the Distance Advisor.

Students receiving financial aid benefits must obtain a last date of attendance from the instructor and approval from the Financial Aid Office. Students receiving Veteran's Affairs benefits must obtain a last date of attendance from the instructor and approval from the VA Coordinator. International students must obtain approval from the International Student Advisor.

Final Examinations

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 time(s) and place(s) 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 Student Services within the first 15 weekdays days of the term for a sixteen week, full-term class or an equivalent percentage for minimester classes taught on a shorter schedule. The instructor must sign the form to approve the change approve the audit status. A student may change from audit to credit status through the Records and Registration Office Student Services only during the first five days of the term for a sixteen week, full-term class or an equivalent percentage for classes taught on a minimester schedule. 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.

Course Repetition

Students who need a course to graduate may take the course as many times as necessary to pass it. Any course that has been passed or audited may not be

taken for credit or audited more than twice per academic year. 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.

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 subsequent course. This could result in the student's 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.

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 appeal 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."
P	Proficiency	Does not affect quality point ratio.
R	Retake	Proficiency not demonstrated. Class must be retaken. Does not affect quality point ratio.
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 equivalent to 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. 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 a time limit, not to exceed 12 months, will be determined 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 student's course average 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 the following. These grade codes do not affect the grade point average:

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, or other academic credit applied from non-course activity.
NS	No Show. Student enrolled but never attended the class.
P	Proficiency.
R	Retake. Proficiency not demonstrated. Class must be retaken.
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 colleges, 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 average for graduation is 2.00 or an average of grade "C.")

A	4 quality points per credit hour	D	1 quality point 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

The grade-point average (GPA) is determined by dividing the total number of quality points by the number of hours attempted (excluding grades of "X", "I", "P", "R" and "W"). A grade-point average of 2.00 indicates that a student has an average of "C."

Independent Study

Selected courses may be available for independent study, with approval of the appropriate Dean and Department Chair. 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 or her academic program at A-B Tech.
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.

Any exceptions must be approved by the Vice President for Instructional Services.

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 may be granted by the Vice President for Instructional 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

The College has established this standard to:

- Provide students with a warning when they fail to meet satisfactory academic performance standards.
- Limit scheduling when a student's academic performance indicates the necessity for intervention.
- Provides a means for preventing prolonged academic failure.

This policy applies to all curriculum 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.

Academic Warning

Students failing to meet the minimum GPA during any semester will receive an academic warning. The warning is posted on the student grade report for that semester, and the student's Academic Program Dean, Department Chair, and Academic Advisor are notified by the Registrar. To assist students in improving their GPA, the following steps are recommended:

a. Student meets with student's assigned Academic Advisor within the first eight days of the semester to develop strategies for academic success;

b. Student completes the one-hour "What it Means to be a Successful Student at A-B Tech" session prior to next registration; and

c. Student meets again with his or her assigned Academic Advisor to review student's academic progress prior to next term's registration.

Students whose semester GPA is:

- 2.0 and above will be considered in good academic standing.
- Below 2.0 will be moved to academic probation.

A student remains on Academic Warning until student's GPA in the next term of enrollment is 2.0 or above.

Academic Probation

Students whose semester GPA falls below 2.0 for two successive semesters will be placed on Academic Probation. Students on Academic Probation have restricted scheduling and must meet with their assigned Academic Advisor to complete an individualized Academic Probation/Suspension Success Contract which may include the following:

- A limitation on the number of hours attempted.
- Scheduling developmental courses as needed.
- Scheduling a repeat of courses.
- Referral to other College resources, such as the Financial Aid Office, to receive further guidance.

Academic Probation is posted to the student's official transcript. Students will be notified of their status by an Academic Advisor.

A student remains on Academic Probation until his or her GPA in the next term of enrollment is 2.0 or above.

Academic Suspension

Students whose semester GPA falls below 2.0 for three consecutive semesters will be placed on Academic Suspension for one semester. Students on Academic Suspension are not allowed to register for curriculum courses. Continuing Education courses may still be taken. Academic Suspension is posted to the student's official transcript.

Academic Appeal

Academic Suspension may only be appealed through the Vice President for Instructional Services or his or her designee. Appeals will be considered by the Academic Appeals Committee prior to the first day of class of each semester.

Registration after Academic Suspension

An individualized Academic Probation/Suspension Success Contract must be completed and may include the following:

- A limitation on the number of hours attempted.
- Scheduling developmental courses as needed.
- Scheduling a repeat of courses.
- Referral to other College resources, such as the Financial Aid Office, to receive further guidance.

Students may re-register after one semester of Academic Suspension (excluding summer semester). They must meet with the chair of their program or their assigned academic advisor to develop strategies for academic success.

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" not used 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 or 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) and complete a minimum of eight credit hours of curriculum courses numbered 100 or above.
2. Students must have a minimum 3.75 grade 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. Only courses numbered 100 and above taken for credit (no audits) will be considered.
4. The Dean's List will be compiled by the Office of Records and Registration. The Vice President for Instructional Services will be responsible for final approval and publication.

President's List

For the President's List, students must be enrolled in an academic program (degree, diploma or certificate) and complete a minimum of twelve credit hours of curriculum courses numbered 100 or above.

1. Students must have a 4.0 grade point average to qualify for the President's List during the semester under consideration.
2. 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. Only courses numbered 100 and above taken for credit (no audits) will be considered.
3. The President's List will be compiled by the Office of Records and Registration. The Vice President for Instructional Services will be responsible for final approval and publication.
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Requirements

Degree, Diploma, and Certificate Programs

Asheville-Buncombe Technical Community College confers the Associate in Arts degree, Associate in Applied Science, Associate in Science Degree, and Associate in Fine Arts Degree. 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.

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 Dean responsible for the course.

Requirements for Graduation

Degrees and diplomas are conferred and awarded at the end of each academic term. The College holds a single graduation ceremony in May each year. To graduate with a diploma or degree, students must meet the following minimum requirements:

1. Declare and be accepted into the program.
2. Complete all program requirements by the end of the term. Program requirements are defined in the official catalog. The default catalog is the one in effect for the term in which the student declares the program and cannot pre-date the student's first term of enrollment. Catalogs are valid for five academic years (for example a student graduating in Sumer 2013 cannot use a catalog dated prior to 2008-2009). Course requirements must be completed by one of the following:
    a. Take the course at A-B Tech and attaining the minimum grade required.
    b. Receive transfer credit. A minimum of 25% of program hours must be completed at A-B Tech. Official transcripts showing required courses must be received by A-B Tech before program completion will be posted to the student's transcript.
    c. Earn Credit-by-Exam, CLEP credit, Advanced Placement credit or credit for licensure/certification.
3. Earn a grade point average of at least 2.0 in the program of study.
4. Fulfill any additional program requirements as defined by special accreditation compliance standards.
5. Apply for graduation prior to completion of the program (preferably the term prior to the last term of registration). See graduation application deadline information in the college calendar.
6. Be in good standing and fulfill all financial obligations.

Students who have completed degree or diploma requirements in the preceding Fall semester or who are on-track to complete requirements in Spring semester or the subsequent Summer semester will be invited to the May graduation ceremony.

Students with a program GPA of 4.0 will be graduated with Highest Honors.

Students with a program GPA of at least 3.75 and less than 4.0 will be graduated with High Honors.

Students with a program GPA of at least 3.5 and less than 3.75 will be graduated with Honors.

Certificates

Certificates are issued for students who satisfy program requirements following the same criteria as for degrees and diplomas. Certificate completers do not participate in the graduation ceremony unless they also are receiving degrees or diplomas. Honors are not recognized for certificate completions.

Transfer of Credit to Other Institutions

Asheville-Buncombe Technical Community College facilitates the transfer of credit to other institutions. The Associate in Arts and Associate in Science degree programs are designed for students to transfer to senior institutions at or near the junior level. College transfer courses identified as satisfying the North Carolina Comprehensive Articulation Agreement (CAA) and passed with a grade of "C" or better will transfer to University of North Carolina system institutions and to participating universities and colleges.

Associate in Applied Science graduates have the option of entering a career, continuing their education at a senior institution or both.

Curriculum courses are designed to transfer to other Community Colleges within the North Carolina Community College System.

The receiving institution determines how courses will transfer, so contact the institution you plan on attending for details on how courses will transfer.

Student Support Services

Counseling Services and Career Development Services

A-B Tech provides free, confidential counseling and related services for students in the K. Ray 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 Development Services are available to students who are undecided or confused about career plans and for those who are ready to make the transition from student to employee. The Career Center, located in the K. Ray 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 on the College website.. Sessions are available in career exploration, resume writing, interview skills, and other areas of interest. An appointment may be made online at careerscheduling.abtech.edu.

Individuals interested in connecting with area employers may participate in Job Board, an online job posting system. Job seekers may create an account, review posted jobs, and apply for positions of interest. Enrolled students may also request resume assistance prior to applying for posted positions.

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 the General Occupation Technology degree program or who have been identified as a student in need of additional advising, will be advised by an academic advisor in Student Services. Students admitted to one of the college transfer degree or diploma programs will be advised by a professional advisor in the Transfer Advising Center..Distance students may receive advising from their assigned program advisor or from the distance advisor at distanceadvising@abtech.edu.

Transfer Advising Center and Student Services advisors are available both on an appointment and walk-in basis.

Students meeting certain criteria may be required to participate in additional advising activities and will be notified of this requirement after completing the placement and orientation process.

Unclassified students may elect to register without meeting with an academic advisor. They may register online via WebAdvisor or at the Express Lane in theK. Ray Bailey Student Services Center. The following process outlines important steps for individuals choosing to self-advise:

1. Register at the appointed time. Information will be sent via email and is available in WebAdvisor.
2. Prerequisites and corequisites for courses must be met. Students may submit documentation of prerequisites and corequisites at the Express Lane.
3. High school students must see an advisor to register.
4. New students register during general registration.

Students who desire to register for more than 20 credit hours in a semester will need the approval of the Vice President for Instructional Services or his or her designee.

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 Support 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.

Student with disabilities who require the services of interpreters, readers, note-takers, or need other reasonable accommodations should request these services from the Support Services Office since federal law prohibits the College from making pre-admission inquiries about disabilities. This office is located in the Student Advising and Support Services office in the K. Ray Bailey Student Services Center. 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 Support Services Office. Information provided by students is voluntary and appropriate confidentiality is maintained. For detailed information, refer to www1.abtech.edu/category/department/student-services/disability-support-services .

Students who need assistance for academic services should call the Support Services Office at 828-398-7581 or e-mail supportservices@abtech.edu.

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 Support Services staff is recommended in order to discuss any special concerns. Students who are not satisfied with the decisions of this office may utilize the College's Student Appeals Policy.

Developmental Studies

This department provides post-secondary students with instruction in basic math, English, and reading. As the point of entry for learners needing academic development, the Developmental Studies department is sensitive to the needs of students making the transition to a college environment. The objective of this department is to enable students to develop skills and behaviors that will lead to successful achievement in A-B Tech's curricula. In compliance with the state redesign of developmental mathematics, Developmental Studies mathematics courses have a minimum passing grade of 80%. Students achieving at or above this level of mastery will receive a grade of "P" and those who do not reach the 80% mastery will receive a grade of "R" and will be required to retake the module until mastery is demonstrated. The minimum passing grade for developmental reading and English is "C". The grades of "D" or "U" are not used for Developmental Studies courses. Developmental Studies faculty may officially withdraw a student from a course.

In compliance with the state redesign of developmental English and reading, the new DRE courses have a minimum passing grade of 80%. Students achieving at or above this level of mastery will receive a grade of "P" and those who do not reach the 80% mastery will receive a grade of "R" and will be required to retake the courses until mastery is demonstrated.

Students who test into three developmental disciplines will be an assigned academic advisor for a minimum of the first semester of enrollment. These students will be allowed to take no more than 13 credits of work during that first semester (i.e. three developmental courses of four credits each and a required student success course). A decision regarding the ability to take more than 13 credits in future semesters while still enrolled in developmental courses will be made with the permission of the advisor.

Basic Skills Program

The Basic Skills Programs support opportunities for academic improvement in the areas of reading, mathematics, English, social studies, and science as well as the improvement of life skills. Assessment is a basic element of all Basic Skills programs.

The Adult Basic Education (ABE) program supports the development of reading comprehension, mathematical reasoning and computation, and language and writing skills at pre-high school levels. This may be focused as pre-GED for those students ultimately seeking the GED.

The Basic Skills Plus Jumpstart Program offers support for GED seeking students interested in pursuing a career in healthcare. The program is designed to assist students in completing a variety of classes and certification requirements while they work toward completion of the GED as a means of enhancing their employability status. The Nursing Assistant I Certification, HRD Pathways to Employment, HRD Interviewing Skills, ACA 115 Success and Study Skills Course, and the Career Readiness Certificate are among the primary components of this program.

The General Educational Development (GED) Preparation program offers instruction in all five areas relevant to the official GED Test. These are reading, social studies, science, math and language/writing skills. Instruction for Basic Skills programs is available at all A-B Tech campuses and sites, a variety of community sites, and through an on-line study option for the GED.

The Basic Skills ABE/GED Program also provides instruction for high school graduates wishing to improve their academic skills prior to entering college curriculum classes.

Official GED Testing for all five of the required subjects is available on-site at the Asheville campus and the Madison site. Students are required to have a passing score of at least 410 on each test with a total combined score of 2250 in order to be awarded the GED diploma. The GED is awarded by the North Carolina Community College System and is generally accepted on an equal basis as a traditional high school diploma for purposes of employment or access to further education.

In order to be eligible for testing, an applicant must:

- Be at least 18 years old or have an official Minor Permission Form on record with the program
- Be a current North Carolina Resident
- Be approved as test-ready by the ABE/GED Preparation program
- Show evidence of payment of a one-time test registration fee of $35.00 at the Continuing Education Registration window located on the second floor of the Hemlock building on the Asheville campus

Please note: The GED tests presently in use will expire December 31, 2013. Any individual tests passed will no longer be valid as of January 1, 2014 unless all five tests have been successfully passed by that time. As of January 2014, all GED testing will be computer-based. At that time, the cost will be $24.00 per test.

Students wishing to pursue the GED are required to attend an orientation which can be scheduled by calling the ABE/GED Preparation program office at 828-398-7433.

Completion of Mathematics Sequence

National research and North Carolina Community College System data support a need for students to stay continuously enrolled in math until they finish the highest level math course required in their selected curricula. Students who take a semester off from math rarely complete their math sequence, and consequently do not finish the diploma or degree they seek. A-B Tech's Retention Plan calls for students to stay continuously enrolled in math until the sequence is finished.

Academic Learning Center (ALC)

The Academic Learning Center provides free tutoring services to A-B Tech students. Tutoring is available on a drop-in basis Monday through Thursday from 9:00 am to 6:00 pm, and on Fridays from 9:00 am to 1:00 pm for the following subjects: Developmental Math, Reading, English, Math (algebra, trigonometry, calculus, statistics, etc.), Chemistry, and Physics.
The ALC is a supportive, friendly environment where we encourage students to learn independently. Tutors cannot provide answers for assignments/tests or proofread papers. Students must be referred by an instructor and submit a signed referral form ("green sheet"). Talk to your instructor or stop by the ALC in Ferguson 118 and 114. For more information, go to abtech.edu and click on "Academic Learning Center" at the bottom of the page.

The Writing Center

The A-B Tech Writing Center is open to students in all curriculum programs. Staffed by full-time and adjunct English instructors and by peer tutors, the Center is dedicated to helping students improve their writing in all stages of development. The Writing Center requires no referral form, and walk-ins are welcome; however, scheduled appointments are given priority.

During conference sessions, emphasis is placed on clarity of expression, effective design and organization, refinement of thesis statements, persuasive support for ideas, smooth transitions, appropriate language, fluid integration of source material, and accurate documentation of sources. Writing Center tutors are asked not to proof-read or edit papers, but they can assist students in becoming more confident and effective self-editors by providing helpful strategies for deep-level revision and effective proofreading.

The Writing Center's online tutoring component is available to students enrolled in online and hybrid classes and may also be used by students in classroom sections on days when the on-campus Center is closed (for inclement weather, special campus activities, etc.) or when the Center's on-campus schedule is full. The online service, staffed by adjunct English instructors and the Center's coordinator, accepts submissions 24/7 with a 24- to 48-hour turnaround Monday through Thursday and a 48-72-hour turnaround Friday through Sunday.

Student Services for Distance Learners

Following is the list of Student Services available to distance students. Most of these resources are available from the College website at abtech.edu.

1. Application: Application to the College may be made on the College website.
2. Student Orientation: The New Student Orientation is online.
3. Student Handbook: The Student Handbook is also available on the College website.
4. Transcript Evaluation: Transcripts from colleges previously attended may be mailed to A-B Tech by the originating college and can be evaluated for transfer credit, if transfer credit is desired. Students will receive a summary of transfer credits in WebAdvisor.
5. Application for Graduation: Applications for graduation may be mailed to the Office of Records and Registration for evaluation. The application is available on the College website. Applicants will receive an email response to their A-B Tech email account.
6. Catalog: The catalog is available on the College website.
7. A-B Tech Transcripts: Transcript request forms are available on the College website.
8. Dropping Classes: Distance learners may drop classes by calling or emailing the Distance Advisor (distanceadvising@abtech.edu), or online via WebAdvisor, if permitted.
9. Schedule of Classes: Curriculum schedules are available on the website and in WebAdvisor.
10. Financial Aid: Applications for federal financial aid (FAFSA) are available at www.fafsa.gov and scholarship applications are available on the College website. Financial Aid information is available by emailing financialaidoffice@abtech.edu or calling 828-398-7520.
11. Academic Advising: Academic advice is available as follows: students classified into programs may receive academic advice by emailing their assigned program advisor at the College. Unclassified students who are not in any program may receive academic advice by contacting distanceadvising@abtech.edu.
12. Veterans' Services: Veterans' services and advice are available by emailing the Veterans' Coordinator at veteranservices@abtech.edu.
13. Disability Services: Students with disabilities as

defined by the Americans with Disabilities Act may seek services by e-mailing the Support Services Office: supportservices@abtech.edu.

14. Career Development Services: For those who need assistance in choosing a major/program, researching specifics of various occupations, writing resumes, and/or interviewing skills, counselors are available by appointment. Students may schedule an appointment at careerscheduling.abtech.edu. Career Development Services and a job and résumé posting service called Job Board are also available online at the College website.

15. Placement Assessment: Placement assessment may be accomplished at any college which offers the North Carolina Diagnostic Assessment and Placement (NC-DAP) test. Scores can then be faxed by the originating college. Additionally, SAT or ACT scores, or the Informed Consent process may be used instead of taking the NC-DAP. The College will also accept Compass or ASSET scores. One of these tests is available at every community college in North Carolina as well as at other colleges throughout the country. For information, contact the Assessment Specialist at generaladvising@abtech.edu. Students may schedule a placement test at placementtesting.abtech.edu.

16. Payment of Tuition and Fees: Tuition and fees may be paid online from the College website or by using WebAdvisor.

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

18. Online Technical Assistance: The College provides a Help Desk for students who experience technical issues with Moodle, WebAdvisor and other college-related, online services. Students may contact the HelpDesk at helpdesk@abtech.edu

19. Library Services: Students may access the resources of the Holly Library by visiting abtech.edu/content/holly-library/welcome-holly-library.

20. Academic Assistance: Tutoring for distance learners in certain disciplines is available through smartthinking.com. For help with writing, students can contact the Writing Center at abtech.edu/Writing-Center.

21. College Events: An updated list of college-sponsored activities and events is available on the College's website calendar.

22. Online Learning Readiness Assessment: Prior to taking an online course, prospective students are able to take A-B Tech's Online Learning Readiness Assessment, to ensure that they have the technical and organizational skills to succeed with online learning. The assessment can be found at abtech.edu/content/distance-learning/online-learning-readiness-assessment.

23. Information about computer set-up: The College provides information on the proper technical set-up that will be needed for a student to fully engage in the online learning process. This information is located at abtech.edu/content/distance-learning/setting-your-computer.

24. Moodle Orientation: A Self-Paced Moodle Orientation is available to students . This course provides students with the opportunity to test drive the features of Moodle and solicit feedback from an online instructor prior to the start of their curriculum class(es). Upon successful completion of an objective exam, the student can produce a certificate of completion. This certificate has been suggested as the first assignment in all online courses.

Financial Aid

The purpose of the financial aid program at Asheville-Buncombe Technical Community College is to provide financial assistance to students who would otherwise 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 due to a lack of financial resources.

Students who submit a FAFSA will be considered for grants, loans, scholarships, and student employment opportunities. Financial aid is generally awarded to students on the basis of need and academic merit.

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.

Application Procedure

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.

For priority consideration, it is important that students complete the General Admissions Procedures for Classified Students.

Financial aid applications are submitted online at www.fafsa.gov. The Financial Aid Office offers FAFSA workshops throughout the academic year, and students are encouraged to attend these sessions to receive assistance for completing the application. Students should check the Financial Aid Office calendar for dates and times to attend a FAFSA workshop.

If an applicant is a dependent and therefore required

to provide his or her parents' financial and personal information on the FAFSA, at least one parent must also apply for a PIN. Dependent students are required to have a parent sign the FAFSA. When visiting the website, students 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 students may complete prior to completing the application online. Worksheets will be available at their local high school or college and in the Student Services Center on the A-B Tech main campus. They may also print the worksheet from the www.fafsa.gov website.

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

Students should make sure they receive and retain a copy of the confirmation number when their FAFSA is submitted. After the Department of Education processes the application, an electronic file will be transmitted to the A-B Tech Financial Aid Office for processing. Additionally, when the FAFSA is processed, the student will receive the Student Aid Report (SAR) by email or a hard copy of the report may be mailed.

All correspondence from the Financial Aid Office is sent to students via their A-B Tech student email account. All students who apply to A-B Tech are automatically assigned a student email account. Information regarding how to access the student email account can be found online at abtech.edu/students/email. It is the student's responsibility to check their student email regularly for information regarding missing financial aid documentation, class information, registration, billing status, etc.

After the financial aid file is completely processed, students can go to their WebAdvisor account to view their award letter, which displays how much and what types of financial aid they will receive. It is important for students to remember that the award letter is based on a full-time enrollment status. Financial aid awards will be adjusted for all students who are enrolled in a less than full-time enrollment status. Students can access their WebAdvisor account from the A-B Tech website at abtech.edu.

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

Important Pell Grant Information: Federal regulations state that all students are only eligible to receive the Pell Grant for the equivalency of 12 full-time semesters, or 600%.

Types of Financial Aid Processed by the Financial Aid Office:

- Pell Grant (Maximum time frame of eligibility: the equivalency of 12 full-time semesters or 600%)
- Federal Supplemental Educational Opportunity Grant
- William D. Ford Federal Direct Loan Program
- Federal Work Study Program
- North Carolina Community College Grant (Not awarded during the summer semester)
- North Carolina Education Lottery Scholarship (Not awarded during the summer semester)
- A-B Tech Foundation Scholarships
- A-B Tech Enrollment Scholarships

Anticipated Disbursement Dates

- Fall Semester-Late September
- Spring Semester-Late February
- Summer Semester-Late June

Higher One

A-B Tech has partnered with Higher One to disburse financial aid refunds. After students have registered for classes, a Higher One debit card will be mailed in a green envelope. All students will be provided four options to receive their disbursement through Higher One. More information can be found on the Financial Aid Office website.

Satisfactory Academic Progress (SAP) Policy for Financial Aid Recipients

According to federal and state regulations, students receiving financial aid must maintain Satisfactory Academic Progress (SAP). The Financial Aid Office at Asheville-Buncombe Technical Community College monitors a student's academic progress as a condition of eligibility when the student applies for financial aid and at the end of each enrollment period (semester). These requirements are applied to a student's entire academic history at A-B Tech, including transfer hours from other schools and including periods when financial aid was not received (e.g. courses taken through A-B Tech in high school). A student is considered to be making satisfactory academic

progress when the following three requirements are satisfied:

1. **Qualitative Standard (Cumulative Grade Point Average) –** A student must maintain a minimum cumulative grade point average of 2.0.
2. **Quantitative Standard (Completion Rate) –** A student must maintain a minimum cumulative completion rate of 67%.
3. **Maximum Timeframe –** A student must successfully complete the program of study within its timeframe. Federal regulations specify that the timeframe may not exceed 150% of the published length of the program. When students exceed the timeframe for their programs of study, they are no longer eligible to receive financial aid. However, students can submit an appeal to the Director of Financial Aid to have their eligibility extended if there are extenuating circumstances.

Monitoring Satisfactory Progress. A-B Tech will monitor satisfactory progress using the chart below.

Credit Hours Attempted*	Minimum Cumulative Completion Rate**	Minimum Cumulative GPA Required***
1 or more	67%	2.00

*Credit hours attempted will be cumulative and will include all hours for which the student was enrolled as of the census date of each academic term, or for which the student received a grade. The census date is defined as the day following the last day for registration and payment 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 F, 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, and U.

The second quantitative standard referred to as the maximum timeframe will be measured independently of the monitoring chart. For each program of study, a maximum timeframe 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%. Timeframes will vary from program to program.

Key points to remember regarding the maximum timeframe:

1. Since the timeframe 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 timeframe and could result in losing financial aid eligibility before completing a program of study.
2. The timeframe is cumulative; therefore, by switching programs without completing the initial program, the student runs the risk of losing financial aid eligibility.
3. The timeframe 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 have attempted and completed credit hours from earning a degree, diploma, or certificate deducted from the maximum timeframe calculation for the next program of study.
5. Students who take course work and are unclassified will have those hours attempted added to their timeframe if and when they enter a specific program of study.
6. Students accepted into a program of study who are required to take developmental course work, as determined by placement testing results and the professional judgment of Student Services, will have the credit hours attempted for such course work count toward their maximum timeframe. (Financial aid can only pay for 30 credit hours of developmental course work).
7. The credit hours for course incompletes, withdrawals, and repetitions will be counted as hours attempted toward the timeframe.
8. Students switching from a degree program to a vocational program who have exceeded the maximum timeframe may submit an appeal to the Director of Financial Aid for a timeframe extension.
9. Credit hours transferred in will be counted toward the maximum timeframe of eligibility. Prior degrees earned will be taken into consideration when determining transfer hours.

SAP Status: Satisfactory Academic Progress statuses will be calculated based on the definitions listed below:

Satisfactory: Satisfactory status is achieved when the cumulative GPA, completion rate and timeframe are met.

Warning: Students who fail to meet the minimum cumulative GPA of 2.0 and fail to complete a minimum completion rate are given a *warning*. Students in the status of *warning* remain eligible for financial aid for one payment period (semester). Participation in the following success strategies while on *warning* may positively impact a student's performance as well as positively impact any appeal of loss of financial aid if it becomes necessary. It is recommended that students do the following.

1. Complete the one-hour "What It Means To Be a Successful Student at A-B Tech" academic success workshop during the semester on *warning. (See Financial Aid Office for specifics.)*
2. *Meet with their academic advisor to review academic success strategies during the semester on warning.*

Participation in the success strategies mentioned above will affect whether any appeal of *suspension* is positively received.

Suspension: Students who fail to meet the conditions of a *warning,* which are to maintain a minimum cumulative GPA of 2.0, a minimum cumulative completion rate of 67%, and exceeds the 150% maximum time frame of their program of study are placed on suspension. Students who are placed on suspension forfeit their financial aid. A student may either appeal to have their financial aid eligibility reinstated, or may notify the Financial Aid Office when the student is meeting the satisfactory academic progress policy for students receiving financial aid so that their financial aid eligibility can be reconsidered. If an appeal is approved, the suspended student is placed on probation. *This also applies to students who have never received financial aid at A-B Tech.

Probation: Probation occurs when students on suspension have their eligibility for financial aid reinstated by an approved Satisfactory Academic Progress Appeal. Student in the status of probation will have their financial aid eligibility reinstated for one more semester. A student on probation may not receive aid for the subsequent payment period unless:

1. The student is now meeting the financial aid satisfactory academic progress policy at the end of the *probation period (semester); or*
2. The student adheres to the financial aid student academic plan. The plan may include one or more of the following stipulations:
   - Limiting the number of credit hours attempted
   - Not withdrawing from any courses
   - Repeat failed courses

Students will be notified of their status at the end of each payment period (semester) or when they first apply for financial aid. This notification will be sent to their student email account.

Continued Probation: Students who fail to meet the Satisfactory Academic Progress requirements, but have met the requirements of the financial aid student academic plan will be placed on continued probation at the end of each semester. Students in the status of continued probation may remain eligible for financial aid until they complete their program of study. After the student has completed the program of study, the financial aid student academic plan is no longer applicable for receiving additional financial aid.

Appeal Process: Students who are not meeting the Satisfactory AcademicProgress (SAP) policy may appeal for reinstatement of financial aid eligibility. All appeals will be reviewed, approved, and/or denied by the Financial Aid Ad Hoc Appeals Committee. An appeal can only be submitted if a student's failure to make satisfactory academic progress is based upon events beyond their control. Applicable circumstances would include medical issues, death/illnesses, and any other uncontrollable events. Students will need to submit the Financial Aid Satisfactory Academic Progress Appeal form and Financial Aid Student Academic Plan to the Financial Aid Office. Students will be notified by email of the committee's decision within 30 days. Students will be permitted to appeal the decision of the committee to the Director of Financial Aid. The Director of Financial Aid will review the student's second appeal, and this decision is final.

Paying out of pocket for classes or sitting out a semester is not grounds for reinstatement of aid. Students must bring their academic progress back into compliance or have an appeal approved to have aid reinstated. It is important for students to remember that Pell Life-Time Eligibility Used can not be waived through the submission of an appeal to the Director of Financial Aid.

Federal Return of Title IV Funds Policy; Financial Aid for Students Who Withdraw or Drop Out. The Higher Education Act of 1965, as amended Oct. 1, 1998 allows institutions participating in any Title IV program (e.g. Pell Grant, Direct Loan Program etc.) to implement the policy and make a "good faith effort" to enforce it prior to the writing of the final regulations, which became effective on October 7, 2000.

The law focuses on the return of Title IV Funds received for the semester the student was enrolled

if that student completely withdraws or partially withdraws (terms with modules) from the College prior to the 60 percent point of the semester.

If a student withdraws after the 60 percent point of the semester or minimester, the student will be considered to have earned all funds disbursed and no return of funds will be required unless a student had received a loan that was subject to repayment under the terms of the loan.

Any student who decides to completely withdraw, or stop attending classes at the College prior to the 60 percent point of the semester and who has been disbursed Title IV funds may be required to repay a portion of those funds to the Department of Education or the College based on the federal calculation.

Scholarships and Other Financial Aid Information

A-B Tech offers a variety of enrollment and foundation scholarships each academic year. There are eligibility requirements for these scholarships. Students should apply through the STARS Online Application System. Students are also encouraged to seek out scholarships offered by clubs and organizations in their communities.

- Early January: STARS Online Application System is available for students to submit an Enrollment and Foundation scholarship
- Early March: Students should complete the Free Application for Federal Student Aid (FAFSA) at **www.fafsa.gov**
- Late March: Online application for Foundation scholarships will close
- Early June: Scholarship notifications are sent to students via email

Students may access scholarship criteria on the financial aid website.

Recommended Sites

- www.finaid.org: Students can access FASTWEB, which contains a database of more than 180,000 scholarships.
- www.ncseaa.edu: Scholarships are available to North Carolina residents through the North Carolina State Education Assistance Authority.
- www.cfnc.org: Provides students with information about scholarships, loans, and other programs.
- www.nasfaa.org: Parents and students can find an assortment of information about financial aid.
- www.studentloans.gov: Students can find a significant amount of information pertaining to the William D. Ford Federal Direct Loan Program.

Education Tax Credits

Community college students are eligible to receive education tax credits that can reduce the expense of their 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 them, their spouse, or their dependents.

American Opportunity Credit

The American Opportunity Tax Credit modifies the existing Hope Credit for tax years 2009 and 2010 under ARRA. The credit was extended to apply for tax years 2011 and 2012 by the Tax Relief and Job Creation Act of 2010. The new credit makes the Hope Credit 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.

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 a tax advisor. Information is also available at ***http://www.irs.gov/Credits-&-Deductions***

Contact Information:
Financial Aid Office
340 Victoria Road
Asheville, NC 28803
828-398-7520 (office)
828-281-9883 (fax)
FinancialAidOffice@abtech.edu
www.abtech.edu/financial-aid

Veterans' Educational Benefits

The Veterans' Coordinator helps incoming veterans process their requests for benefits. The Veterans' Office is located in the K. Ray Bailey Student Services Center. Individuals applying for veteran's benefits must meet all entrance requirements and are required to meet the College's Standards of Academic Progress as they progress through their programs. Failure to meet these standards will result in loss of veteran's educational benefits. For more information, the Veterans' Coordinator can be reached at veteransservices@abtech.edu.

Other Regulations

Intellectual Property

Intellectual property is a creative work that merits protection by a copyright, trademark, or patent. In the pursuit of academic studies, a student or faculty member may produce such a creative work. A-B Tech supports the development and production of intellectual property.

The College publishes an Intellectual Property policy and procedure, the purpose of which is to protect the College and the creators, including students, as they attempt to transfer inventions or creative works to the marketplace. This policy supports the sharing of property rights between the College and the originator as specified in the procedures.

Unless otherwise specified in a rights agreement, the College owns all rights to intellectual property created by an employee inside the normal scope of work or using College resources. If the property was created outside the normal scope of work or without College resources, then the property belongs to the creator. Typically, students retain rights to original works created within the course of their studies, unless otherwise specified in a rights agreement.

For a complete copy of the Intellectual Property policy and procedure, see the Vice President for Instructional Services.

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 any College property. 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 K. Ray Bailey Student Services Building lobby and the college website. 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, seeing grades or getting transcripts.

Drug and Alcohol Free Workplace Policy

The safety and health of our employees and students is our paramount concern. Drugs and alcohol abuse are harmful to the health and well being of the employees and students of Asheville-Buncombe Technical Community College (the "College"). People who use prohibited drugs and abuse alcohol tend to be less productive, less reliable and prone to greater absenteeism resulting in greater costs, delay and risks in the College's operations. The College will not tolerate any drug use or alcohol abuse, which imperils the health and well being of its employees and students or threatens its operations. The College is committed to maintaining a safe workplace and an educational environment free from the influence of drugs and alcohol.

Violations and Consequences

A violation of the policy occurs when an employee or student:

1. Possesses, manufactures, distributes, dispenses or uses prohibited drugs while on campus, while engaging in official College activities, or on official College business.
2. Is under the influence of prohibited drugs while on campus, while engaging in official College activities, or on official College business.
3. Distributes prohibited drugs on or off the College's premises.
4. Is charged and convicted of possessing, manufacturing, distributing, or being under the influence of prohibited drugs.
5. Fails to report a conviction for a violation of a criminal drug statute occurring in the workplace

to his or her supervisor within five days of such conviction.

6. Engages in the unauthorized possession, manufacture, distribution, sale or use of alcohol, or is under the influence of alcohol, while on campus, while engaging in official College activities, or on official College business.

Commission of the above violations may result, at the College's sole discretion, in disciplinary action, up to and including suspension or termination of any employee, and suspension or expulsion of a student. At its sole discretion, in lieu of or in addition to taking disciplinary action against an employee, the College may require the employee to satisfactorily participate in a drug or alcohol abuse assistance or rehabilitation program approved by a federal, state or local health, law enforcement or other appropriate agency.

Definitions

"Prohibited drugs" means any "Controlled substances" as defined at 21 U.S.C. §802 and listed in Schedules I through V of 21 U.S.C. §812, as revised from time to time, and other federal laws and regulations. Generally, these are drugs that have a high potential for abuse and include but are not limited to, heroin, marijuana, cocaine, PCP, amphetamines, and "crack." Also included are any other drugs that are illegal under federal, state or local law, legal drugs that have been obtained illegally or are not intended for human consumption (such as glue).

The term "alcohol" means the intoxicating agent in beverage alcohol, ethyl alcohol, or other low molecular weight alcohols, including methyl and isopropyl alcohol.

The term "criminal drug statute" means a federal or non-federal criminal statute involving the manufacture, distribution, dispensing, use or possession of a controlled substance.

The term "conviction" means a finding of guilt (including a plea of nolo contendere) or imposition of sentence, or both, by any judicial body charged with the responsibility to determine violations of the federal or state criminal drug and alcoholic beverage statutes.

"Disciplinary action" may include suspension, probation, expulsion, dismissal or termination.

Procedure

Each employee or student is required by law to inform the College within five days after a conviction for violation of any federal or state criminal drug statute where such violation occurred on the College campus or on official business or as a part of any official College activity.

The President of the College must notify the federal governmental agencies granting funds to the College within 10 days after receiving notice of the conviction. Any employee or student convicted of violating a criminal drug statute while on the College campus or on official business of the College or as part of any official College activity will be subject to disciplinary sanction up to and including termination of the employee or expulsion of a student. Alternatively, the College may require the employee or student to finish successfully a drug or alcohol counseling treatment or rehabilitation program sponsored by an approved private or governmental institution as a precondition to continued employment or enrollment.

Extracurricular student activities sponsored by the College or any student organization of the College will not provide alcohol to students. Students or employees suspected of using alcohol while on campus, while engaging in official College activities, or on official College business will be subject to identification verification and other appropriate verification necessary to the enforcement of this policy.

Condition of Employment

As a condition of employment, the College requires all employees to abide by this policy. Employees are also required to sign an acknowledgment of receipt of a copy of this policy.

Dissemination to Students and Employees

A copy of this drug and alcohol prevention policy will be distributed annually to each employee of the College and to each student taking one or more credit classes. Each student taking a class for academic credit shall be given a copy of this policy in September of each year.

Policy Review

The College reviews this drug and alcohol policy in August of even numbered years.

Sexual and Other Unlawful Harassment

Policy:

It is the policy of the Board of Trustees to maintain an educational institution and working environment free from sexual and other unlawful harassment. Harassment, retaliation, coercion, interference, or intimidation of an employee or student due to his or her race, color, religion, sex, age, national origin, disability, veteran's status, creed, political affiliation or any other legally protected status not listed herein, or that of any employee's or student's relatives, friends, or associates, is strictly forbidden and will not be tolerated of anyone associated with the College either at a campus facility or College sponsored event.

Sexual Harassment:

Sexual harassment includes physical contact and/or conduct that creates an unwelcome or hostile environment. It includes unwelcome sexual advances, requests for sexual favors, and other verbal or physical contact of a sexual nature when submission to the conduct is made a term or condition of an individual's employment or academic performance (either implicitly or explicitly), when submission to or rejection of the conduct is used as the basis for employment or educational decisions affecting the individual, or when the conduct is sufficiently severe, persistent, or pervasive to interfere with an individual's work or academic performance or to create an intimidating, hostile, or offensive working or learning environment. Occasional compliments of a socially acceptable nature do not constitute sexual harassment.

Sexual harassment may include but is not limited to:

- Physical assault, including rape, or any coerced sexual relations.
- Subtle pressure for sexual activity or for a relationship that takes on a sexual or romantic coloring, thereby exceeding the limits of healthy relation.
- Any demeaning sexual propositions.
- Unnecessary touching in any form.
- Sexually explicit or suggestive remarks about a person's physical attributes, clothing, or behavior.
- Sexually stereotyped or sexually charged insults, humor, verbal abuse, or graffiti.
- Any sexually inappropriate behavior that prevents an individual from participating in their employment, academic performance, or in any functions of the College.

Other Unlawful Harassment:

Other unlawful harassment may consist of verbal or physical conduct that denigrates or shows hostility or aversion toward an individual because of his or her race, color, religion, age, national origin, disability, veteran's status, creed, political affiliation, or any other legally protected status not listed herein, or that of his or her relative, friends, or associates, and has the purpose or effect of creating an intimidating, hostile, or offensive work or learning environment; has the purpose or effect of interfering unreasonably with an individual's work or academic performance; or otherwise adversely affects an individual's employment or educational opportunities.

Other unlawful harassment may include but is not limited to:

- Threatening or intimidating conduct directed at another because of the individual's race, color, religion, age, national origin, disability, veteran's status, creed, political affiliation, or any legally protected status not listed herein.
- Jokes, name calling, or rumors based upon an individual's race, color, religion, age, national origin, disability, veteran's status, creed, political affiliation, or any legally protected status not listed herein.
- Ethnic slurs, negative stereotypes and hostile acts based on an individual's race, color, religion, age, national origin, disability, veteran's status, creed, political affiliation, or any legally protected status not listed herein.

Procedure:

A. **Introduction**

Employees and students, without any fear of reprisal, have the responsibility to bring any form of sexual or other unlawful harassment (whether by a co-worker, student, or other person who is participating in, observing or otherwise engaged in College activities) to the appropriate person so that a prompt investigation into the circumstances of the incident and the alleged harassment can be conducted.

B. **Investigations and Reports**

1. An employee who has a sexual or other unlawful harassment complaint is urged to bring the matter to the Vice President for Human Resources and Organizational Development or, if the Vice President of Human Resources and Organizational Development is the alleged harasser, to the President.
2. A student who has a sexual or other unlawful harassment complaint is urged to bring the matter to the attention of the Vice President for Student Services or, if the Vice President for Students Services is the alleged harasser, then the Director for Human Resources.
3. Individuals filing sexual or other unlawful harassment complaints are urged to do so in writing as soon as possible but no later than thirty (30) days after disclosure or discovery of the facts giving rise to the complaint. Complaints submitted after the thirty (30) day period may still be investigated; however, individuals should recognize that delays in reporting may significantly impair the ability of College officials to investigate and respond to such complaints. The Vice President for Human Resources and Organizational Devel-

opment shall fully investigate all employee sexual or other unlawful harassment complaints and, as needed and if the complaint also involves a student, collaborate with the Vice President for Student Services. The Vice President for Student Services shall fully investigate any student sexual or unlawful harassment complaints and will, as needed and if the complaint also involves an employee, collaborate with the Vice President for Human Resources and Organizational Development.

4. A confidential file regarding the complaint shall be maintained by the Vice President for Human Resources and Organizational Development's office (for employees) or in the Vice President for Student Services' office (for students). To the extent possible, the College will keep all information relating to the complaint and investigations confidential; however, to maintain compliance with the Clery Act, both parties will be informed of the outcome of any institutional proceeding alleging a sex offense.

C. **Corrective and/or Disciplinary Action**

Following an investigation, the appropriate Vice President shall prepare a report of his/her investigation and review the report with the person(s) involved and, if appropriate, implement corrective and/or disciplinary action. Appropriate disciplinary action shall depend upon the seriousness of the misconduct and may include a warning, written reprimand, demotion, suspension from employment or from the College, termination of employment, expulsion, removal from College property, or denial of access to College services or programs.

D. **Appeal to the President**

If either party is dissatisfied with the appropriate Vice President's determination, he/she may appeal the decision to the President. The appeal must be submitted in writing within five (5) business days of receiving the appropriate Vice Presidents' determination. The President may review the documents, conduct any further investigation necessary or take any other steps he/she determines to be appropriate in order to respond to the complaint. The President shall provide a written response within ten (10) business days after receiving the appeal, unless further investigation is needed. The President's determination is final.

E. **Protection Against Retaliation**

The College will not in any way retaliate against an individual who makes a report of sexual or other unlawful harassment in good faith or who assists in an investigation. Retaliation includes, but is not limited to, any form of intimidation, disciplinary action, reprisal or harassment. Retaliation is a serious violation of this policy and should be reported immediately. The College will take appropriate action against any employee or student found to have retaliated against another in violation of this policy.

F. **Prohibition of Relationships between Employees and Students**

Romantic or sexual relationships between College employees and students are prohibited if the employee and the student have an academic relationship. Academic relationships include any activities in which the employee is a direct or indirect supervisor or instructor for the student, as in a classroom or lab, or is a sponsor for any College activity involving the student, including work study or organizational/club/sport activities. This prohibition shall continue until the student or the employee is no longer affiliated with the College. Employees engaging in inappropriate relationships with students will be subject to disciplinary action, up to and including termination of employment.

A-B Tech Campus Police and Security Department

The department mission is to serve the College in a manner that is unsurpassed and serve as the standard for others to emulate. The primary function is to provide an environment that allows students, staff, faculty and visitors to interact in safe and secure surroundings. The role is to actively support the educational activities of the college through safety, security and parking services. These services will meet the highest level of approval and will constantly strive to anticipate the needs of the College community.

Telephone Numbers for Security Services
Main College: 254-1921
Non-Emergency: 279-3166
Emergency: 398-7125 or 9-911

Safety Tips

The following tips can help students avoid becoming a victim of a crime when they are at school, work, or just out and about.

By taking a few simple precautions, students can reduce their risk, and also discourage those who commit crime.

Be Prepared

- Students should always be alert and aware of the

people around them.

- Students should educate themselves concerning prevention tactics.
- Students should be aware of locations and situations which would make them vulnerable to crime, such as alleys and dark parking lots.

Street and Parking Lot Precautions

- Students should be alert to their surroundings and the people around them, especially if they are alone or it is dark.
- Whenever possible, students should travel with someone else.
- Students should stay in well-lit areas as much as possible.
- Students should walk close to the curb, avoiding bushes and alleys where someone could hide.
- Students carrying purses should hold them securely between their arms and body.
- Students should walk confidently, and at a steady pace.

Car Safety

- Students should ALWAYS lock car doors after entering or leaving their cars.
- Students should park in well-lit areas.
- Students should have their car keys in hand before getting to the car.
- Students should check the back seat before entering the car.
- If a student thinks he or she is being followed, the student should drive to a security, police, sheriff or fire station.
- Students should not stop to aid motorists stopped on the side of the road. Students should go to a phone and request help.
- Students should never pick up hitchhikers.

Office and Classroom Safety

- Students should never leave a purse or billfold in plain view or in the pocket of a jacket hanging on a door or chair.
- Students should not leave cash or valuables in an office or classroom, even for a short time, such as a break.
- Students should be aware of escape routes for emergencies.
- Students should report suspicious people and activities to security personnel.
- When sitting in the cafeteria, lounge or on outside benches, students should always keep personal belongings with them.
- If working alone or before/after normal business hours, students keep doors locked.
- If attending night classes or working late, students should try to walk out with one another or call security for an escort.

If a Crime Occurs – Report It

Everyone should consider it his or her responsibility to report crime. Many criminals target favorite areas and have predictable methods of operation. At least one out of two crimes in the United States goes unreported, usually because people don't want to get involved. Not reporting a crime allows the criminal to continue to operate without interference.

In many cases, it is the information provided by victims and witnesses that leads to the arrest of a criminal. No fact is too trivial.

Crime statistics for A-B Tech are posted annually on the US Department of Education, Office of Postsecondary Education's web site at **http://ope.ed.gov/security/.**

Workplace Violence Prevention Policy and Procedures

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 A-B Tech or at events sponsored by A-B Tech 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.

Every employee and student is responsible for reporting any threats or acts of violence that he or 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 or she has witnessed that he or 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), BB gun, stun gun, air rifle or pistol, bowie knife, dirk, dagger, slingshot, leaded cane, switchblade knife, razors, razor blades, blackjack, metallic knuckles, fireworks.

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 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. Regular hours of operation are posted in the Café and are normally from 7 a.m. to 6 p.m. Monday - Thursday and 7 a.m. to 2 p.m. on Fridays. Hours may vary. Vending machines dispensing soft drinks, coffee, and snacks can be found at various locations around campus.

The Culinary Arts and Hospitality students offer dining experiences on most Thursdays during fall and spring semesters. These lunches and dinners are held in the dining rooms of the Magnolia and Fernihurst Buildings on the A-B Tech Asheville Campus. To be on the mailing list, call 398-7244.

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 officer is prepared 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 child care facility operated by A-B Tech for the general public as well as students and staff. Admission to the facility is on a first-come, first-served basis. For further information, call 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. (See Student Handbook for Inclement Weather Procedures at **abtech.edu/student-handbook**.) Closing or delaying announcements are placed on the switchboard automated attendant, on the A-B Tech website at

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, 398-7255, for an appointment and approximate charges for services.

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 Phi Theta Kappa faculty advisor.

Intramurals. A-B Tech offers a wide variety of intramural activities that are open to student or employee participation. Check the calendar portion of the Student Handbook for a listing of intramural activities. Students can sign up for these activities in the gymnasium of the Coman Student Activity Center. For more information, visit **abtech.edu/intramural_sports**.

Holly Library. Holly Library has books, journals, DVDs and audio books to check out, and databases and e-books to help with research. Computers are located on both levels and laptops can be checked out for in-building use. The Library has wireless access and offers comfortable seating, quiet study areas and group study rooms. For more information, call the library circulation desk at 398-7301.

Library Hours	
Monday-Thursday	7:30 a.m. – 8:00 p.m.
Friday	7:30 a.m. – 5:00 p.m.
Saturday	9:00 a.m. – 1:00 p.m.

Mountain Tech Spa. The Mountain Tech Spa is an on-campus spa facility, located in the Birch Building, providing 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. 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, during the first few weeks of fall and spring semesters. After evaluating ridership and traffic flow, the shuttle service may be changed. Shuttle routes and schedules can be found by calling 254-1921, Ext. 0.

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. Career Development Services maintains an online Job Board where employers may post openings and where students/alumni may post their résumés.

Service-Learning Center. The staff of the Service-Learning Center coordinates 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 Library, Room 129; Phone: 398-7573.

Small Business Center. The Small Business Center supports the development of new business and the growth of existing businesses by being a community-based provider of training, counseling, and resource information. Confidential counseling services and access to resource libraries are free of charge as are the majority of seminar offerings.

Student Incubation. Students with an entrepreneurial spirit may apply for the student incubation program managed by the Small Business Center. The program is designed to provide a nurturing environment for students to develop and grow their own businesses. They receive guidance toward becoming sustainable and contributing members of a strong economic community. The 12-month extracurricular program is located at A-B Tech's Enka site and is open to all students. More information can be found at **abtech.edu/sbc**.

Student Lounge. A student lounge is located in the Coman Student Activity Center for those students with spare time 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 K. Ray 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, register for the study abroad course, and purchase health and accident insurance valid outside of the United States. Students who successfully complete the study abroad activity and the course requirements will receive course credit.

General Education for AAS Degrees

Purpose

The General Education component of all AAS degrees provides students with a knowledge base of historical, societal, and environmental contexts for succeeding in the changing global community. The General Education component represents a full spectrum of communication, humanities and fine arts, social and behavioral sciences, and natural sciences and mathematics courses.

General education courses facilitate student acquisition and sharing of knowledge, encourage social interaction, and promote an educated citizenry. General education courses also develop broad, cross-curriculum knowledge and skill sets that prepare the student to successfully master the challenges of post-graduation endeavors.

General Education Outcomes Assessment

Upon successful completion of an AAS degree, the student will demonstrate competency in four General Education Outcomes. Each outcome is assessed in several General Education courses. General Education Outcomes and the courses where these outcomes are assessed follow. Note that additional General Education courses beyond those listed here may be required by individual programs. See individual program requirements for further details. See the General Education for Transfer Degrees and Diplomas section for General Education requirements for the AA, AFA, and AS degrees.

Communication

Students will deliver purposeful messages designed to increase knowledge, foster understanding, or promote change in an audience's attitudes or behaviors.

COM 110	**COM 231**	**ENG 112**
COM 120	**ENG 110**	**ENG 113**
COM 140	**ENG 111**	**ENG 114**

Humanities/Fine Arts

Students will identify, assess, and formulate various perspectives of human values and/or creative expressions.

ART 111	**HUM 121**	**MUS 113**
ART 114	**HUM 122**	**MUS 210**
ART 115	**HUM 130**	**PHI 215**
DRA 111	**HUM 150**	**PHI 240**
DRA 112	**HUM 160**	**REL 110**
DRA 122	**HUM 211**	**REL 111**
DRA 126	**HUM 212**	**REL 112**
HUM 110	**MUS 110**	**REL 211**
HUM 115	**MUS 112**	**REL 212**
HUM 120		

English literature courses may be taken with advisor's approval.
All prerequisites must be met.

Social/Behavioral Sciences

Students will demonstrate an understanding of social institutions and of the diversity of human experiences within a framework of historical and cultural contexts.

ANT 210	**HIS 131**	**PSY 241**
ANT 220	**HIS 132**	**PSY 281**
ANT 240	**POL 110**	**SOC 210**
ECO 151	**POL 120**	**SOC 213**
ECO 251	**PSY 150**	**SOC 220**
ECO 252	**PSY 237**	**SOC 225**
HIS 111	**PSY 239**	**SOC 240**
HIS 112		

Mathematics/Natural Science

Students will design, evaluate, and implement a strategy to solve a defined discipline-specific problem.

AST 111	**CHM 121**	**MAT 151**
BIO 110	**CHM 130**	**MAT 161**
BIO 111	**CHM 135**	**MAT 171**
BIO 140	**CHM 151**	**MAT 175**
BIO 161	**GEL 111**	**PHY 110**
BIO 163	**MAT 110**	**PHY 121**
BIO 168	**MAT 115**	**PHY 131**
BIO 175	**MAT 121**	**PHY 151**
BIO 275	**MAT 140**	**PHY 251**

Allied Health and Public Service

The Allied Health and Public Service 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 or child care 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/Behavioral 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. People 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.

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, and PHM are designated as five year "time out" courses and must have been completed within five years of graduation.

A.A.S. Degrees Conferred
Associate Degree Nursing
Dental Hygiene
Early Childhood Associate
Human Services Technology
Medical Assisting
Medical Laboratory Technology
Medical Sonography
Pharmacy Technology
Radiography
Surgical Technology
School-Age Education
Veterinary Medical Technology

Diplomas Awarded
Dental Assisting
Pharmacy Technology
Practical Nursing

Certificates Awarded
Early Childhood
Human Services & Substance Abuse Studies
Infant/Toddler Care
Phlebotomy
Special Education

Collaborations
Associate Degree Nursing RIBN* Option/
Western Carolina University

*Regionally Increasing Baccalaureate Nursing

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 offices and other related areas

This program is accredited by the American Dental Association Commission on Dental Accreditation (CODA), 211 East Chicago Avenue, Chicago, IL 60611, 1-800-621-8099, Ext. 2705, **www.ada.org.**

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/competitive-allied-health
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, BIO

First Semester (Fall)			Credits
BIO	161	Introduction to Human Biology	3
DEN	100	Basic Orofacial Anatomy	2
DEN	101	Preclinical Procedures	7
DEN	103	Dental Sciences	2
DEN	111	Infection/Hazard Control	2
DEN	112	Dental Radiography	3
Second Semester (Spring)			
DEN	102	Dental Materials	5
DEN	104	Dental Health Education	3
DEN	105	Practice Management	2
DEN	106	Clinical Practice I	5
COM	120	Interpersonal Communications	3
Third Semester (Summer)			
CIS	110	Introduction to Computers	3
DEN	107	Clinical Practice II	5
PSY	150	General Psychology	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.

This program is accredited by the **American Dental Association Commission on Dental Accreditation (CODA)**, 211 East Chicago Avenue, Chicago, IL 60611, 1-800-621-8099, Ext. 2705, **www.ada.org.**

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/competitive-allied-health
3. High school chemistry or equivalent from A-B Tech or other regionally-accredited college.
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 a 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

First Semester (Fall)			Credits
BIO	168	Anatomy and Physiology I	4
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 Laboratory	2
Second Semester (Spring)			
BIO	169	Anatomy and Physiology II	4
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	223	Dental Pharmacology	2
ENG	111	Expository Writing	3
Third Semester (Summer)			
BIO	175	General Microbiology	3
CIS	110	Introduction to Computers	3
DEN	140	Dental Hygiene Theory II	1
DEN	141	Dental Hygiene Clinic II	2
DEN	222	General and Oral Pathology	2
Fourth Semester (Fall)			
COM	231	Public Speaking	3
DEN	123	Nutrition/Dental Health	2
DEN	220	Dental Hygiene Theory III	2
DEN	221	Dental Hygiene Clinic III	4
DEN	224	Materials and Procedures	2
DEN	232	Community Dental Health Part A	2
SOC	240	Social Psychology	3
Fifth Semester (Spring)			
DEN	230	Dental Hygiene Theory IV	1
DEN	231	Dental Hygiene Clinic IV	4
DEN	232	Community Dental Health Part B	1
DEN	233	Professional Development	2
DEN	235	Dental Hygiene Concepts	2
HUM	115	Critical Thinking	3
Total Credit Hours Required			**75**

Early Childhood Associate

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

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

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

This program is accredited by the **National Association for the Education of Young Children (NAEYC)**, 1313 L St. NW, Suite 500, Washington, DC 20005, Phone: (202)-232-8777, **www.naeyc.org.**

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 a 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: ACA, CIS, and EDU

First Semester (Fall)		**Credits**
ACA 151	Success and Study Skills	1
CIS 110	Introduction to Computers	3
EDU 119	Intro to Early Childhood Education	4
EDU 144	Child Development I	3
EDU 146	Child Guidance	3
ENG 111	Expository Writing	3
	(or ENG 110)	
Second Semester (Spring)		
EDU 131	Child, Family & Community	3
EDU 145	Child Development II	3
EDU 214	Early Childhood Interm. Practicum	4
EDU 271	Educational Technology	3
PSY 150	General Psychology	3
Third Semester (Summer)		
COM 120	Interpersonal Communication	3
MAT 140	Survey of Mathematics	3
Fourth Semester (Fall)		
EDU 151	Creative Activities	3
EDU 154	Social/Emotional/Behavior Development	3
	(or EDU 262)	
EDU 221	Children with Exceptionalities	3
EDU 251	Exploration Activities (or EDU 184)	3
EDU 280	Language and Literacy Experiences	3
Fifth Semester (Spring)		
EDU 153	Health, Safety and Nutrition	3
EDU 248	Developmental Delays	3
	(or EDU 234, EDU 114, or EDU 261)	
EDU 284	Early Childhood Capstone Practicum	4
	Humanities/Fine Arts Elective	3
Total Credit Hours Required		**67**

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(8), "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."

First Semester (Fall)		Credits
EDU 119	Intro to Early Childhood Education	4
EDU 146	Child Guidance	3
EDU 151	Creative Activities	3
Second Semester (Spring)		
EDU 144	Child Development I	3
ENG 111	Expository Writing	3
Total Credit Hours Required		**16**

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 Dev	3
EDU 221	Children with Exceptionalities	3
EDU 248	Developmental Delays	3
Total Credit Hours Required		**18**

Infant/Toddler Care Certificate (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.

Course work 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 (8), "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 a 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 131	Child, Family & Community	3
EDU 144	Child Development I	3
EDU 153	Health, Safety & Nutrition	3
EDU 234	Infant, Toddlers, and Twos	3
Total Credit Hours Required		**16**

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.

This program is accredited by the **National Association for the Education of Young Children (NAEYC)**, 1313 L St. NW, Suite 500, Washington, DC 20005, Phone: (202)-232-8777, **www.naeyc.org.**

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: ACA and EDU

First Semester (Fall)		Credits
ACA 115	Success and Study Skills	1
CIS 110	Introduction to Computers*	3
EDU 144	Child Development I	3
EDU 163	Classroom Management & Instruction	3
EDU 216	Foundations of Education	4
ENG 111	Expository Writing*	3
Second Semester (Spring)		
ENG 113	Literature Based Research*	3
EDU 131	Child, Family & Community	3
EDU 145	Child Development II	3
EDU 271	Educational Technology	3
	Humanities/Fine Arts Elective*	3
	Social/Behavioral Science Elective*	3
Third Semester (Summer)		
	Humanities/Fine Arts Elective*	3
	Social/Behavioral Science Elective*	3
Fourth Semester (Fall)		
EDU 221	Children with Exceptionalities	3
	Math Elective**	3
	Science Elective*	4
	Humanities/Fine Arts Elective*	3
	Social/Behavioral Science Elective*	3
Fifth Semester (Spring)		
EDU 285	Internship Experience-School Age	4
EDU 289	Adv. Issues/School Age	2
COM 231	Public Speaking*	3
	Science Elective*	4
	Social/Behavioral Science Elective*	3
Total Credit Hours Required		**73**

*Core 44 class

**A math lab is required for some courses

Human Services Technology

The Human Services Technology curriculum prepares students for entry-level positions in institutions and agencies that provide social, community, and educational services. Along with core courses, students take courses that 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. Students pursuing the A.A.S. degree in Human Services Technology should be aware that employers in the human services field can require prospective volunteers, interns, and employees to pass criminal background, health, drug, and citizenship checks before they will be allowed to work at an organization.

Human Services Technology Associate in Applied Science Degree (A45380)

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

First Semester (Fall)		**Credits**
ACA 115	Success and Study Skills	1
ENG 111	Expository Writing	3
PSY 150	General Psychology	3
SOC 225	Social Diversity	3
HSE 110	Introduction to Human Services	3
SAB 110	Substance Abuse Overview	3

Second Semester (Spring)		
CIS 110	Introduction to Computers	3
DDT 110	Developmental Disabilities	3
HSE 123	Interviewing Techniques	3
HSE 220	Case Management	3
SWK 110	Introduction to Social Work (or SAB 140*)	3

Third Semester (Summer)		
COM 231	Public Speaking	3
HUM 115	Critical Thinking	3
PSY 281	Abnormal Psychology	3
PSY 241	Developmental Psychology	3

Fourth Semester (Fall)		
BIO 163	Basic Anatomy and Physiology (or BIO 161**)	5
HSE 112	Group Process I	2
HSE 125	Counseling	3
HSE 251	Activities Planning	3
MHA 238	Psychopathology	3

Fifth Semester (Spring)		
Foreign Language Elective (or SAB 210*)		2-3
HSE 210	Human Services Issues	2
HSE 225	Crisis Intervention	3
HSE 240	Issues in Client Services	3
SOC 213	Sociology of the Family	3

Total Credit Hours Required **72-73**

*Students who are pursing the AAS exclusively must take SWK 110 instead of SAB 140 and a foreign language elective instead of SAB 210. Students who are pursing the AAS and the "Human Services & Substance Abuse Studies" Certificate at the same time must take SAB 140 instead of SWK 110 and SAB 210 instead of a foreign language elective. To satisfy the foreign language elective requirement, students may select from one of the following courses and must take any accompanying lab as required: FRE 111, SPA 110, or SPA 111. SPA 110 is not recommended for students who desire to eventually pursue a bachelor's degree.

**Students must take either BIO 163 or BIO 161. BIO 163 is usually recommended for students who desire to eventually pursue a bachelor's degree.

Human Services & Substance Abuse Studies Certificate (C45380L1)

This certificate offers students an opportunity to learn about substance abuse and professional human services practice. The certificate has been designed to enhance the professional knowledge base of individuals who have obtained or who desire to obtain entry-level employment in human services settings, particularly those serving individuals affected by substance abuse issues.

The certificate's course work can be of particular value to:

1. Workers already employed in the human services field who desire to increase their knowledge of substance abuse and professional human services practice.
2. Individuals seeking to obtain or renew credentials as a substance abuse professional through the North Carolina Substance Abuse Professional Practice Board (NCSAPPB); consult the NCSAPPB website for credentialing requirements.
3. Students who are currently completing or who have previously completed the requirements of the College's associate's degree in Human Services Technology who desire to expand their knowledge of substance abuse as a component of wider human services practice.

Student interested in completing the certificate have the following options:

1. Since the certificate's course work can be counted toward the course requirements for the College's associate's degree in Human Services Technology, students can graduate with both the certificate and the associate's degree at the same time.
2. Students can earn the certificate and then complete the requirements of the associate's degree at a later time.
3. The certificate can be pursued separately from other credentials offered by the College, including its associate's degree in Human Services Technology.

Specific Requirements

1. General college admission requirements.
2. 50% of the credits toward this certificate must be earned at the College.
3. Students must pass all courses required to earn the certificate with a grade of "C" or higher.
4. Students must satisfy any course prerequisite requirements and pass such courses with a grade of "C" or higher.
5. Students pursuing the certificate should be aware that employers in the human services field (substance abuse and otherwise) can require prospective volunteers, interns, and employees to pass criminal background, drug screen, and citizenship verification checks before they are allowed to work at an organization.

Major Requirements		**Credits**
SAB 110	Substance Abuse Overview	3
SAB 140	Pharmacology	3
SAB 210	Substance Abuse Counseling	3

Select <u>three</u> courses from the following list:

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
HSE 251	Activities Planning	3
DDT 110	Developmental Disabilities	3
MHA 238	Psychopathology	3
SWK 110	Introduction to Social Work	3

Total Credit Hours Required	**16-18**

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.

The program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP). Program criteria are governed by the Medical Assisting Education Review Board (MAERB). A student must be a graduate of a CAAHEP-accredited Medical Assisting program to be eligible to sit for the American Association of Medical Assistants' certification examination to become Certified Medical Assistants.

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. 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/competitive-allied-health
4. Acceptable reports of medical examinations by the first day of second semester.
5. Satisfactory completion of required immunizations by the first day of second semester.
6. Criminal background checks and drug screenings will be required prior to admissions to any Mission Hospitals, Inc. clinical sites.
7. Current CPR certification for the Professional Rescuer or Healthcare Provider by the first day of fifth semester.

Medical Assisting Associate in Applied Science Degree (A45400)

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

First Semester (Fall)		Credits
MED 110	Orientation to Medical Assisting	1
MED 121	Medical Terminology I	3
MED 118	Medical Law and Ethics	2
MED 130	Admin Office Procedures I	2
MED 138	Infection/Hazard Control	2
BIO 161	Intro to Human Biology	3
OST 131	Keyboarding	2
Second Semester (Spring)		
MED 122	Medical Terminology II	3
MED 131	Admin Office Procedure II	2
MED 140	Exam Room Procedures I	5
MED 274	Diet Therapy and Nutrition	3
MED 270	Symptomatology	3
Third Semester (Summer)		
CIS 110	Introduction to Computers	3
ENG 111	Expository Writing (or ENG 110)	3
MAT 115	Mathematical Models	3
COM 120	Interpersonal Communication (or COM 140)	3
Fourth Semester (Fall)		
MED 150	Laboratory Procedures I	5
MED 240	Exam Room Procedures II	5
MED 272	Drug Therapy	3
SPA 120	Spanish for the Workplace	3
Fifth Semester (Spring)		
MED 276	Patient Education	2
MED 260	Clinical Externship	5
MED 262	Clinical Perspectives	1
	Humanities/Fine Arts Elective	3
	Social/Behavioral Science Elective	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 the Board of Certification for Medical Laboratory Technicians by the American Society of Clinical Pathologists. 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, Phone: (773) 714-8880, **www.naacls.org.**

Specific Requirements

1. General college admission requirements.
2. High school units:
   a. High school-level chemistry or college-level Chemistry 092 required.
   b. Biology strongly 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/competitive-allied-health
4. Acceptable reports of medical examinations by first day of MLT 252 Practicum I.
5. Satisfactory completion of required immunizations by first day of MLT 252 Practicum I.
6. Criminal background checks, drug screens, and seasonal flu vaccines are required prior to admission to clinical sites.
7. 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

First Semester (Fall)			Credits
BIO	163	Basic Anatomy and Physiology	5
CHM	130	General, Organic & Biochemistry	3
CHM	130A	General, Organic & Biochemistry Lab	1
MAT	115	Mathematical Models (or MAT 140 or Higher)	3
MLT	110	Introduction to MLT	3
MLT	111	Urinalysis and Body Fluids	2
MLT	140	Introduction to Microbiology	3
Second Semester (Spring)			
MLT	120	Hematology/Hemostasis I	4
MLT	126	Immunology and Serology	2
MLT	130	Clinical Chemistry	4
MLT	240	Special Clinical Microbiology	3
ENG	111	Expository Writing	3
Third Semester (Summer)			
MLT	127	Transfusion Medicine	3
MLT	252	MLT Practicum I (Phlebotomy)	2
Fourth Semester (Fall)			
CIS	115	Introduction to Computers	3
PSY	150	General Psychology	3
MLT	254	MLT Practicum I (Blood Bank)	4
MLT	255	MLT Practicum I (Microbiology)	5
MLT	261	MLT Practicum II (Donor Therapy)	1
Fifth Semester (Spring)			
ENG	114	Professional Research and Reporting	3
PHI	240	Introduction to Ethics	3
MLT	215	Professional Issues	1
MLT	265	MLT Practicum II (Hematology)	5
MLT	275	MLT Practicum III (Clinical Chemistry)	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 ultrasound physics and instrumentation and specialty examinations administered by the American Registry of Diagnostic Medical Sonographers (ARDMS) and find employment in clinics, physicians' offices, mobile services, hospitals, and educational institutions.

Graduates will be eligible to take all ARDMS examinations in general and vascular concentrations.

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/competitive-allied-health
3. Keyboarding skills are highly recommended.
4. Final admission to the Medical Sonography program shall be contingent upon documentation of physical and emotional health that would provide evidence indicative of the applicant's ability to provide safe care to the public. Completed medical and immunization records must be submitted 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 kept current throughout the program.
7. Completion of an observation in an approved Sonography area after final acceptance into the program. Details are available from the Medical Sonography faculty.
8. Criminal background checks, drug screening, PPD testing, and seasonal flu vaccinations at cost to the student will be required prior to admission to clinical sites.
9. Sonography students will be required to complete clinical rotations that may require them to travel as much as two hours from campus.
10. Students applying to the Medical Sonography program are encouraged to have successfully completed: BIO 163 (or BIO 168 and BIO 169), CIS 110, ENG 111, COM 120 , PHY 125, MAT 115 and Social/Behavioral Sciences and Humanities/Fine Arts Electives prior to program admission due to the rigorous nature of the Medical Sonography curriculum.

Medical Sonography Associate in Applied Science Degree (A45440)

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

First Semester (Fall)		Credits
BIO 163	Basic Anatomy and Physiology	5
ENG 111	Expository Writing	3
PHY 125	Health Sciences Physics	4
SON 110	Intro to Sonography	3
SON 130	Abdominal Sonography	3
Second Semester (Spring)		
MAT 115	Mathematical Models	3
SON 111	Sonographic Physics	4
SON 120	SON Clinical Ed I	5
SON 131	Abdominal Sonography II	2
SON 140	Gynecological Sonography	2
Third Semester (Summer)		
SON 121	SON Clinical Ed II	5
SON 241	Obstetrical Sonography I	2
Fourth Semester (Fall)		
CIS 110	Introduction to Computers	3
COM 120	Intro to Interpersonal Communication	3
SON 220	SON Clinical Ed III	8
SON 242	Obstetrical Sonography II	2
SON 250	Vascular Sonography	2

Fifth Semester (Spring)

SON 221	SON Clinical Ed IV	8
SON 225	Case Studies	1
SON 289	Sonographic Topics	2
	Humanities/Fine Arts Elective	3
	Social/Behavioral Sciences Elective	3

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 their lifespan in a variety of settings.

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

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, physicians' offices, industry, and community agencies.

This program is approved by the
North Carolina Board of Nursing
P.O. Box 2129, Raleigh, NC 27602
(919) 782-3211, **www.ncbon.com.**

Specific Requirements

1. General college admission requirements.
2. High School units:
   a. Chemistry and Biology strongly suggested
   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/competitive-allied-health
4. Final admission to the Associate Degree Nursing program shall be contingent upon documentation of physical and emotional health that would provide evidence indicative of the applicant's ability to provide safe nursing care to the public.
5. To be eligible for admission in Fall, all nursing program applicants must by November:
   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 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 or BIO 275, CIS 110, ENG 111, ENG 114, PSY 150, PSY 241, and a Humanities/Fine Arts Elective prior to program admission due to the rigorous nature of the ADN curriculum.
9. Applicants for initial licensure in North Carolina must have a criminal background check. Affiliated clinical sites for nursing will require a criminal background check and 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. Students who begin their nursing education at A-B Tech 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

First Semester (Fall)		Credits
BIO 168	Anatomy and Physiology I	4
PSY 150	General Psychology	3
NUR 111	Intro to Health Concepts	8
NUR 117	Pharmacology	2
Second Semester (Spring)		
BIO 169	Anatomy and Physiology II	4
NUR 112	Health-Illness Concepts	5
NUR 114	Holistic Health Concepts	5
Third Semester (Summer)		
ENG 111	Expository Writing	3
PSY 241	Developmental Psychology	3
NUR 212	Health System Concepts	5
Fourth Semester (Fall)		
ENG 114	Professional Research & Reporting	3
BIO 175	General Microbiology	3
NUR 113	Family Health Concepts	5
NUR 211	Health Care Concepts	5
Fifth Semester (Spring)		
NUR 213	Complex Health Systems	10
	Humanities/Fine Arts Elective	3
Total Credit Hours Required		**71**

Associate Degree Nursing Regionally Increasing Baccalaureate Nursing (RIBN) Option

The RIBN option is an A.A.S. Dual Enrollment Program offered in collaboration with Western Carolina University. Students are accepted into 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).
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 A-B 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 the NC Forgivable Education Loan Program.
6. Home school will be A-B Tech years 1, 2, and 3.
7. Year 1: enroll in general education courses at A-B Tech and WCU as advised by the RIBN Nursing Student Advisor
8. Year 2 and 3: enroll in Associate Degree Nursing courses at A-B Tech and continue enrollment in WCU courses as advised by RIBN Nursing Student Advisor.
9. Year 4: home school will be WCU
10. Successfully pass NCLEX - RN to progress to year 4.
11. See the RIBN nursing advisor for the recommended course sequence.

This program is approved by the **North Carolina Board of Nursing**, P.O. Box 2129, Raleigh, NC 27602, (919)-782-3211, **www.ncbon.com.**

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 and licensure, the graduate will:

1. Practice professional nursing behaviors incorporating personal 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.

This program is approved by the North Carolina Board of Nursing, P.O. Box 2129, Raleigh, NC 27602, (919)-782-3211, **www.ncbon.com.**

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/competitive-allied-health
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, all nursing program applicants must, by November:
   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 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.
8. Applicants for initial licensure in North Carolina must have a criminal background check. Affiliated clinical sites will require a criminal background check and 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.

Practical Nursing Diploma (D45660)

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

First Semester (Fall)			Credits
BIO	168	Anatomy and Physiology I	4
NUR	101	Practical Nursing I	11
PSY	150	General Psychology	3
Second Semester (Spring)			
BIO	169	Anatomy and Physiology II	4
ENG	111	Expository Writing	3
NUR	102	Practical Nursing II	12
Third Semester (Summer)			
NUR	103	Practical Nursing III	10
Total Credit Hours Required			**47**

LPN to Associate Degree Nursing Bridge Option

A LPN-to-ADN Advanced Placement Option will begin in the summer of 2014. Applications will be accepted in the fall of 2013; the application period will be October 1 through October 31, and seats are limited. Please see Nancy Markhoff, Administrative Assistant in the Nursing department (Rhododendron 443), or Leanna Valentine, Chair of Nursing (Rhododendron 442) for complete details and to obtain an application packet. For additional questions, you may contact the Nursing department at 828-398-7259.

Pharmacy Technology

The Pharmacy Technology Program prepares individuals to assist the pharmacist in duties that a technician can legally perform and to function within the boundaries prescribed by the pharmacist and the employment agency.

Students will prepare prescription medications, mix intravenous solutions and other specialized medications, update patient profiles, maintain inventories, package medications in unit-dose or med-card form, and gather data used by pharmacists to monitor drug therapy.

Employment opportunities include retail, hospitals, nursing homes, research laboratories, wholesale drug companies, and pharmaceutical manufacturing facilities. Graduates from the program may be eligible to take the national certification examination to become a Certified Pharmacy Technician.

Pharmacy Technology Associate in Applied Science Degree (A45580)

Courses requiring a grade of "C" or better: ACA, PHM, and BIO

First Semester (Fall)		Credits
ACA 115	Success and Study Skills	1
CIS 110	Intro to Computers	3
PHM 110	Introduction to Pharmacy	3
PHM 111	Pharmacy Practice I	4
PHM 115	Pharmacy Calculations	3
PHM 115A	Pharmacy Cal. Lab	1
PHM 120	Pharmacology I	3
Second Semester (Spring)		
BIO 161	Intro to Human Biology	3
PHM 118	Sterile Products	4
PHM 125	Pharmacology II	3
PHM 140	Trends in Pharmacy	2
PHM 155	Community Pharmacy	3
PHM 165	Pharmacy Prof Practice	2
Third Semester (Summer)		
COM 120	Intro to Interpersonal Communication	3
ENG 111	Expository Writing	3
PHM 132	Pharmacy Clinical	2
Fourth Semester (Fall)		
MAT 115	Mathematical Models	3
PHM 150	Hospital Pharmacy	4
PHM 160	Pharmacy Dosage Forms	3
PHM 134	Pharmacy Clinical	4
PSY 150	General Psychology	3
Fifth Semester (Spring)		
HUM 115	Critical Thinking (or PHI 240 Introduction to Ethics)	3
PHM 138	Pharmacy Clinical	8
Total Credit Hours Required		**71**

Pharmacy Technology Diploma (D45580)

First Semester (Fall)		Credits
ACA 115	Success and Study Skills	1
CIS 110	Intro to Computers	3
PHM 110	Introduction to Pharmacy	3
PHM 111	Pharmacy Practice I	4
PHM 115	Pharmacy Calculations	3
PHM 115A	Pharmacy Cal. Lab	1
PHM 120	Pharmacology I	3
Second Semester (Spring)		
BIO 161	Intro to Human Biology	3
PHM 118	Sterile Products	4
PHM 125	Pharmacology II	3
PHM 140	Trends in Pharmacy	2
PHM 155	Community Pharmacy	3
PHM 165	Pharmacy Prof Practice	2
Third Semester (Summer)		
COM 120	Intro to Interpersonal Communication	3
ENG 111	Expository Writing	3
PHM 132	Pharmacy Clinical	2
Total Credit Hours Required		**43**

Phlebotomy

The Phlebotomy curriculum prepares individuals to obtain blood and other specimens for the purpose of laboratory analysis.

Course work includes proper specimen collection and handling, communication skills, and maintaining patient data.

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

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, drug screens, and seasonal flu vaccines are 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)

First Semester (Fall)			Credits
PBT	100	Phlebotomy Technology	6
PBT	101	Phlebotomy Practicum	3
PSY	118	Interpersonal Psychology (or PSY 150)	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.
3. High school biology, high school algebra, and keyboarding skills are highly recommended.
4. Final admission to the Radiography program shall be contingent upon documentation of physical and emotional health that would provide evidence indicative of the applicant's ability to provide safe care to the public.
5. 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 kept current throughout the program.
8. Completion of a minimum of six hours 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, drug screening, PPD testing, and/or seasonal flu vaccinations at cost to the student will be required prior to admission to clinical sites.
10. Students applying to the Radiography program are encouraged to have successfully completed: BIO 163 (or BIO 168 and BIO 169), CIS 110, ENG 111, COM 120, HUM 115 and the Social/Behavioral Science elective prior to program admission due to the rigorous nature of the Radiography curriculum.

This program is accredited by Joint Review Committee on Education in Radiologic Technology (JRCERT), 20 N. Wacker Drive, Suite 2850, Chicago, IL 60606-3182, **www.jrcert.org**, Phone: (312)-704-5300, Fax: (312)-704-5304

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, and Marion.

Radiography Associate in Applied Science Degree (A45700)

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

First Semester (Fall)			Credits
BIO	163	Basic Anatomy and Physiology	5
ENG	111	Expository Writing (or ENG 110)	3
RAD	110	Radiography Introduction and Patient Care	3
RAD	111	RAD Procedures I	4
RAD	151	RAD Clinical Education I	2
RAD	182	RAD Clinical Elective	2

Second Semester (Spring)			
CIS	110	Introduction to Computers	3
COM	120	Intro to Interpersonal Communication	3
RAD	112	RAD Procedures II	4
RAD	121	Radiographic Imaging I	3
RAD	161	RAD Clinical Education II	5

Third Semester (Summer)			
RAD	122	Radiographic Imaging II	2
RAD	131	Radiographic Physics I	2
RAD	171	RAD Clinical Education III	4

Fourth Semester (Fall)			
RAD	211	RAD Procedures III	3
RAD	231	Radiographic Physics II	2
RAD	241	Radiobiology/Protection	2
RAD	251	RAD Clinical Education IV	7
		Social/Behavioral Science Electives	3

Fifth Semester (Spring)			
HUM	115	Critical Thinking	3
RAD	245	Image Analysis	2
RAD	261	RAD Clinical Education V	7
RAD	271	Radiography Capstone	1
Total Credit Hours Required			**75**

Surgical Technology

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

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

Employment opportunities include labor/delivery/emergency departments, inpatient/outpatient surgery centers, dialysis units/facilities, physicians' offices, and central supply processing units.

Students of programs accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) are required to take the national certification exam administered by the National Board on Certification in Surgical Technology and Surgical Assisting (NBSTSA) within a four-week period prior to or after graduation.

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/competitive-allied-health
3. Final admission to the Surgical Technology program shall be contingent upon documentation of physical and emotional health that would provide evidence 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 require criminal background checks and drug screens 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: ACA, BIO, SUR

First Semester (Fall)		**Credits**
ACA 115	Success and Study Skills	1
BIO 163	Basic Anatomy and Physiology	5
ENG 111	Expository Writing	3
SUR 110	Introduction to Surgical Technology	3
SUR 111	Perioperative Patient Care	7
Second Semester (Spring)		
BIO 175	General Microbiology	3
SUR 122	Surgical Procedures I	6
SUR 123	Surgical Clinicial Practice I	7
Third Semester (Summer)		
CIS 110	Introduction to Computers	3
SUR 134	Surgical Procedures II	5
SUR 135	Surgical Clinical Practice II	4
Fourth Semester (Fall)		
ENG 114	Professional Research & Reporting (or COM 120 or COM 231)	3
PSY 150	General Psychology	3
SUR 211	Advanced Theoretical Concepts	2
SUR 212	SUR Clinical Supplement	4
Fifth Semester (Spring)		
HUM 115	Critical Thinking (or PHI 240)	3
SOC 210	Introduction to Sociology	3
SUR 210	Advanced SUR Clinical Practice	2
SUR 137	Professional Success Preparation	1
Total Credit Hours Required		**68**

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. Official transcript of any prior college credit on file with admissions office.
   d. 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. Clinical agencies and/or credentialing bodies require criminal background checks and drug screens prior to admission to clinical sites.

Copies of 1d. as well as 2-6 must be on file with the Surgical Technology Department.

The CST and Surgical Technology certificate or diploma will provide 33 hours of credit toward the A.A.S. degree. The program will accept transferred curriculum courses from regionally-accredited institutions in related and general education course work, as well as major area course work. 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 course placement is contingent upon seat availability.

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

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

First Semester (Fall)			Credits
BIO	163	Basic Anatomy & Physiology	5
CIS	110	Introduction to Computers	3
ENG	111	Expository Writing	3
PSY	150	General Psychology	3
SUR	211	Advanced Theoretical Concepts	2
Second Semester (Spring)			
BIO	175	General Microbiology	3
BUS	137	Principles of Management (or SUR 212)	3
ENG	114	Professional Research & Reporting (or COM 120 or COM 231)	3
HUM	115	Critical Thinking (or PHI 240)	3
SOC	210	Introduction to Sociology (or SOC 215)	3
SUR	210	Advanced Surgical Clinical Practice	2
Total Credit Hours Required			**33**

Excluding SUR Diploma courses.

Program Totals with SUR Diploma/Certificate courses: 33 credits plus above 33 credits = 66 At least 25% of required total credit hours (17 hours must be earned at A-B Tech.

Veterinary Medical Technology

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

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

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

This program is accredited by the **American Veterinary Medical Association (AVMA) Committee on Veterinary Technician Education and Activities (CVTEA)**, 1931 North Meacham Road, Suite 100, Schaumburg, IL 60173-4360, **www.avma.org**, Phone: 1-800-248-2862, Fax: 847-925-1329

Specific Requirements

1. General college admission requirements.
2. High school units:
   a. Chemistry required.
   b. Biology and 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/competitive-allied-health
4. 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.
5. Satisfactory completion of required immunizations.
6. 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: ACA, CHM, COE, VET

First Semester (Fall)			Credits
ACA	115	Success and Study Skills	1
CIS	110	Introduction to Computers	3
VET	110	Animal Breeds & Husbandry	3
VET	120	Vet. Anatomy and Physiology	4
VET	121	Veterinary Medical Terminology	3
VET	137	Veterinary Office Practices	2
Second Semester (Spring)			
CHM	130	General Organic and Biochemistry	3
CHM	130A	General Organic and Biochemistry Lab	1
MAT	110	Mathematical Measure (or MAT 140)	3
ENG	111	Expository Writing (or ENG 110)	3
VET	123	Veterinary Parasitology	3
VET	125	Veterinary Diseases I	2

Third Semester (Summer)

VET 131	Veterinary Laboratory Techniques I	3
VET 133	Veterinary Clinical Practices I	3

Fourth Semester (Fall)

ENG 114	Prof. Research and Reporting	3
	(or COM 120 or 231)	
VET 126	Veterinary Diseases II	2
VET 211	Veterinary Lab Techniques II	3
VET 213	Clinical Practices II	4
VET 215	Veterinary Pharmacology	3
	Humanities/Fine Arts Elective	3

Fifth Semester (Spring)

VET 212	Veterinary Lab Techniques III	3
VET 214	Veterinary Clinical Practices III	4
VET 217	Large Animal Clinical Practices	3
VET 237	Animal Nutrition	3
	Social/Behavioral Sciences Elective	3

Sixth Semester (Summer)

COE 112	Cooperative Work Experience	2

Program Totals	**73**

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, Hospitality Management, 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. Some programs offer weekend classes.

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, located at the College's Enka site.

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
Brewing, Distillation and Fermentation (pending state and SACS approval)
Business Administration
Computer Information Technology
Cosmetology
Culinary Arts
Cyber Crime Technology
Digital Media Technology
Entrepreneurship
Healthcare Business Informatics
Hospitality Management
Human Resources Management
Information Systems Security
Marketing and Retailing
Medical Office Administration
Networking Technology
Office Administration
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

Business Administration
Cosmetology
Foodservice Technology
Medical Office Administration
Medical Transcription
Mobile Development
Office Administration
Therapeutic Massage

Certificates Awarded

Accounting - Level I and Level II
Computer Information Technology - Microcomputer Applications
Computer Information Technology - PC Installation and Maintenance
Computer Information Technology - Computer Basics
Computer Information Technology - GIS Fundamentals Certificate
Cosmetology Instructor
Digital Media Technology - Digital Video
Digital Media Technology - Interactive Multimedia
Entrepreneurship
Esthetics Technology
Hospitality Management - Leadership in Hospitality
Human Resources Management
Information Systems Security - CNSS 4011/4013 Certificate
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
Office Administration - Office Management
Web Technologies - Database Management
Web Technologies - Web Designer
Web Technologies - Web Programmer
Web Technologies - Mobile Web Application Developer
Web Technologies - Geospatial Database and Web

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, 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: ACA, ACC, BUS, CIS, CTS, ECO and MKT

First Semester (Fall)			Credits
ACA	115	Success & Study Skills	1
ACC	120	Principles of Financial Accounting	4
CIS	110	Introduction to Computers	3
HUM	115	Critical Thinking	3
MAT	115	Mathematical Models (or MAT 151/151A)	3

Second Semester (Spring)			
ACC	121	Principles of Managerial Accounting	4
ACC	150	Accounting Software Applications	2
BUS	115	Business Law I	3
CTS	130	Spreadsheet	3
MKT	120	Principles of Marketing	3

Third Semester (Summer)			
BUS	137	Principles of Management	3
COM	231	Public Speaking	3
ECO	251	Principles of Microeconomics	3
ENG	111	Expository Writing (or ENG 110)	3

Fourth Semester (Fall)			
ACC	129	Individual Income Taxes	3
ACC	140	Payroll Accounting	2
ACC	220	Intermediate Accounting I	4
BUS	225	Business Finance	3
ECO	252	Principles of Macroeconomics	3

Fifth Semester (Spring)			
ACC	130	Business Income Taxes	3
ACC	180	Practices in Bookkeeping	3
ACC	240	Government and Not-for-Profit Accounting	3
ACC	269	Auditing & Assurance Services	3
BUS	110	Introduction to Business	3
BUS	147	Business Insurance	3

Total Credit Hours Required	**74**

Accounting Associate in Applied Science Degree - Evening Schedule (A25100)

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

First Semester (Fall)			Credits
ACA	115	Success & Study Skills	1
ACC	120	Principles of Financial Accounting	4
HUM	115	Critical Thinking	3

Second Semester (Spring)			
ACC	121	Principles of Managerial Accounting	4
CIS	110	Introduction to Computers	3
MAT	115	Mathematical Models (or MAT 151/151A)	3

Third Semester (Summer)			
BUS	137	Principles of Management	3
ENG	111	Expository Writing (or ENG 110)	3

Fourth Semester (Fall)			
ACC	129	Individual Income Taxes	3
BUS	115	Business Law I	3
ECO	251	Principles of Microeconomics	3
MKT	120	Principles of Marketing	3

Fifth Semester (Spring)			
ACC	130	Business Income Taxes	3
ACC	150	Accounting Software Applications	2
CTS	130	Spreadsheet	3
ECO	252	Principles of Macroeconomics	3

Sixth Semester (Summer)			
BUS	110	Introduction to Business	3
COM	231	Public Speaking	3

Seventh Semester (Fall)			
ACC	140	Payroll Accounting	2
ACC	220	Intermediate Accounting I	4
ACC	240	Government and Not-for-Profit ACC	3
BUS	147	Business Insurance	3

Eighth Semester (Spring)			
ACC	180	Practices in Bookkeeping	3
ACC	269	Auditing	3
BUS	225	Business Finance	3
Total Credit Hours Required			**74**

Accounting Level I Certificate (C25100L1)

Accounting Level I provides training for the entry- level bookkeeper. This certification can lead to additional certifications from various professional organizations such as the American Institute of Professional Bookkeepers (AIPB).

Major Requirements			Credits
ACC	120	Principles of Financial Accounting	4
ACC	121	Principles of Managerial Accounting	4
ACC	140	Payroll Accounting	2
ACC	150	Accounting Software Applications	2
ACC	180	Practices in Bookkeeping	3
BUS	115	Business Law I	3
Total Credit Hours Required			**18**

Accounting Level II Certificate (C25100L2)

Accounting Level II takes students to an advanced certification focusing on tax preparer skills. This certification can lead to additional certifications from various organizations such as the Internal Revenue Service (IRS).

Major Requirements			Credits
ACC	129	Individual Income Taxes	3
ACC	130	Business Income Taxes	3
ACC	220	Intermediate Accounting I	4
ACC	240	Government & Not-for-Profit Acct	3
ACC	269	Auditing	3
Total Credit Hours Required			**16**

Baking and Pastry Arts

This curriculum is designed to provide 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, and/or further academic studies.

Students will be provided theoretical knowledge/ practical applications that provide critical competencies to meet industry demands, including environmental stewardship, operational efficiencies and professionalism. Course work includes specialty/ artisanal breads, desserts/pastries, decorative work, high-volume production and food marketing.

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

Specific Program Requirements

1 General college admission requirements.

2. Completion of first dose of Hepatitis A vaccine is required by the first day of food preparation and service classes. Second Hepatitis A vaccine must be completed within six to 12 months of the first vaccination.

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

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

First Semester (Fall)			Credits
ACA	115	Success & Study Skills	1
CUL	110	Sanitation & Safety	2
CUL	110A	Sanitation & Safety Lab	1
CUL	142	Fundamentals of Food	5
CUL	150	Food Science	2
CUL	160	Baking I	3
MAT	115	Mathematical Models	3
PSY	150	General Psychology	3
Second Semester (Spring)			
BPA	120	Petit Fours & Pastries	3
BPA	130	European Cakes and Tortes	3
BPA	150	Artisan & Specialty Breads	4
CIS	110	Introduction to Computers	3
COM	231	Public Speaking	3
HRM	220	Cost Control - Food & Bev	3
Third Semester (Summer)			
COE	112	Co-op Work Experience I	2
Fourth Semester (Fall)			
BPA	210	Cake Design & Decorating	3
BPA	240	Plated Desserts	3
BPA	250	Dessert/Bread Production	5
CUL	112	Nutrition for Foodservice	3
ENG	111	Expository Writing (or ENG 110)	3

Fifth Semester (Spring)

BPA	220	Confection Artistry	4
BPA	230	Chocolate Artistry	3
BPA	260	Pastry & Baking Marketing	3
HRM	245	Human Resource Mgmt-Hosp	3
CUL	273	Career Development	1
		Humanities/Fine Arts Elective	3

Total Credit Hours Required **75**

Brewing, Distillation and Fermentation
(pending state and SACS approval)

The Brewing, Distillation and Fermentation curriculum is designed to prepare individuals for various careers in the brewing, distillation and fermentation industry. Classroom instruction, practical laboratory applications of brewing, distillation and fermentation principles and practices are included in the program of study.

Course work in brewing, distillation and fermentation includes production, operations, safety and sanitation and associated process technologies. Related course work in agriculture, management, equipment, packaging, maintenance, and business ventures are offered.

Graduates should qualify for employment opportunities in brewing, distillation and fermentation production, marketing and related industries. Students may be eligible to sit for the professional International Brewers Distillation (IBD) certification exams which correspond to the program of study.

Brewing, Distillation and Fermentation Associate in Applied Science Degree (A55130)
Pathway: Brewing Production, Marketing and Management

Courses requiring a grade of "C" or better: ACA, BDF, HRM

First Semester (Fall) **Credits**

ACA	115	Success & Study Skills	1
BDF	111	BDF Safety & Sanitation	4
BDF	114	Craft Beer Brewing	2
BDF	125	Bev Tech & Calculations	2
CHM	130	General, Organic and Biochemistry	3
CHM	130A	General, Organic and Biochemistry Lab	1
HRM	225	Beverage Management	3
SST	110	Intro to Sustainable Technology	3

Second Semester (Spring)

BDF	110	Fermentation Production	4
BDF	115	Applied Craft Bev Microbiology	4
BDF	261	Bev Marketing and Sales	3
BDF	261A	Bev Marketing and Sales Lab	1
CIS	113	Computer Basics	1
ENG	111	Expository Writing	3
HRM	220	Cost Control-Food & Bev	3

Third Semester (Summer)

BDF	270	Craft Beverage Business Lab (or COE 112)	2

Fourth Semester (Fall)

ACC	120	Principles of Financial Accounting	4
BDF	170	Bev Tour & Tasting Mgmt	3
BDF	180	Sensory Evaluation	3
BDF	230	Advanced Brewing	4
BDF	250	Packaging, Materials, & Quality	3

Fifth Semester (Spring)

BDF	175	Distillation Operations (or BDF 240)	4
BDF	215	Legal Issues-Fermentation	3
COM	231	Public Speaking	3
ECO	151	Survey of Economics	3
HRM	135	Facilities Management	3
		Humanities/Fine Arts Elective	3

Total Credit Hours Required **76**

Business Administration

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

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

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

Business Administration Associate in Applied Science (A25120)

Courses requiring a grade of "C" or better: ACA, ACC, BUS, CIS, ECO, MKT, and WEB 115

First Semester (Fall)			Credits
ACA	115	Success and Study Skills	1
ACC	120	Principles of Financial Accounting	4
BUS	110	Introduction to Business	3
BUS	115	Business Law I	3
HUM	115	Critical Thinking	3
Second Semester (Spring)			
ACC	121	Principles of Managerial Accounting	4
BUS	116	Business Law II	3
BUS	137	Principles of Management	3
BUS	153	Human Resource Management	3
MKT	120	Principles of Marketing	3
Third Semester (Summer)			
CIS	110	Introduction to Computers	3
COM	231	Public Speaking	3
ECO	251	Principles of Microeconomics	3
ENG	111	Expository Writing (or ENG 110)	3
MAT	115	Mathematical Models	3
Fourth Semester (Fall)			
BUS	225	Business Finance	3
BUS	240	Business Ethics	3
BUS	280	REAL Small Business	4
CTS	130	Spreadsheet	3
ECO	252	Principles of Macroeconomics	3
Fifth Semester (Spring)			
BUS	147	Business Insurance	3
BUS	239	Business Applications Seminar	2
BUS	255	Organizational Behavior in Business	3
		Major Elective*	3
		Major Elective*	3
Total Credit Hours Required			**75**

*Major Electives: BUS 151, BUS 260, BUS 270, ETR 210, ETR 220, ETR 240, MKT 121, MKT 123, MKT 220, WEB 115

Business Administration Associate in Applied Science - Evening Program (A25120)

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

First Semester (Fall)			Credits
ACA	115	Success and Study Skills	1
ACC	120	Principles of Financial Accounting	4
BUS	115	Business Law I	3
HUM	115	Critical Thinking	3
Second Semester (Spring)			
ACC	121	Principles of Managerial Accounting	4
BUS	110	Introduction to Business	3
BUS	116	Business Law II	3
CIS	110	Introduction to Computers	3
Third Semester (Summer)			
BUS	137	Principles of Management	3
ENG	111	Expository Writing (or ENG 110)	3
Fourth Semester (Fall)			
BUS	240	Business Ethics	3
ECO	251	Principles of Microeconomics	3
MKT	120	Principles of Marketing	3
Fifth Semester (Spring)			
BUS	153	Human Resource Management	3
CTS	130	Spreadsheet	3
ECO	252	Principles of Macroeconomics	3
Sixth Semester (Summer)			
COM	231	Public Speaking	3
MAT	115	Mathematical Models	3
		Major Elective*	3
Seventh Semester (Fall)			
BUS	147	Business Insurance	3
BUS	280	REAL Small Business	4
		Major Elective*	3
Eighth Semester (Spring)			
BUS	225	Business Finance	3
BUS	239	Business Applications Seminar	2
BUS	255	Organizational Behavior in Business	3
Total Credit Hours Required			**75**

*Major Electives: BUS 151, BUS 260, BUS 270, ETR 210, ETR 220, ETR 240, MKT 121, MKT 123, MKT 220, WEB 115

Business Administration Diploma (D25120)

The Business Administration Diploma is designed as a supplemental program to provide a basic understanding of business principles and practices for students enrolled in or completing a non-business related program. The diploma is not intended to be a stand-alone credential leading to employment in a business field.

First Semester (Fall)

ACA	115	Success & Study Skills	1
ACC	120	Principles of Financial Accounting	4
BUS	110	Introduction to Business	3
BUS	115	Business Law I	3
BUS	137	Principles of Management	3
BUS	240	Business Ethics	3
ENG	111	Expository Writing (or ENG 110)	3

Second Semester (Spring)

BUS	151	People Skills	3
BUS	153	Human Resources Management	3
CIS	110	Introduction to Computers	3
ECO	251	Principles of Microeconomics	3
MAT	115	Mathematical Models	3
MKT	120	Principles of Marketing	3

Total Credit Hours Required **38**

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 that 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: ACA, CIS, COE, CTS, DBA, GIS, NET, NOS, SEC and WEB

First Semester (Fall)			**Credits**
ACA	115	Success & Study Skills	1
CIS	110	Introduction to Computers	3
ENG	111	Expository Writing	3
NET	110	Networking Concepts	3
NOS	110	Operating System Concepts	3
WEB	115	Web Markup and Scripting	3

Second Semester (Spring)

CIS	115	Intro to Programming and Logic	3
DBA	110	Database Concepts	3
GIS	111	Introduction to GIS	3
NOS	130	Windows Single User	3
WEB	111	Introduction to Web Graphics	3

Third Semester (Summer)

ENG	114	Prof. Research and Reporting	3
MAT	115	Mathematical Models (or MAT 171)	3
		Humanities/Fine Arts Elective	3
		Social/Behavioral Science Elective	3

Fourth Semester (Fall)

CTS	120	Hardware/Software Support	3
CTS	135	Integrated Software Intro	4
CTS	285	Systems Analysis and Design	3
NOS	230	Windows Admin 1	3
		Major Elective 1*	3

Fifth Semester (Spring)

CTS	115	Information System Business Concept	3
CTS	287	Emerging Technologies	3
CTS	289	System Support Project	3
SEC	110	Security Concepts	3
		Major Elective 2*	3

Total Credit Hours Required **74**

*Major 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 COE 212 Work Experience IV and
		COE 215 Work Experience Seminar IV)

Option II - Tech Support:

Elective 1	CTS 217	Computer Training and Support
Elective 2	CTS 220	Adv. Hardware/Software Support
		(or COE 212 Work Experience IV and
		COE 215 Work Experience Seminar IV)

Option III - Business Support:

Elective 1	CTS 217	Computer Train/Support
Elective 2	WEB 210	Web Design
		(or COE 212 Work Experience IV and
		COE 215 Work Experience Seminar IV)

Option IV - Geographic Information Systems:

Elective 1	GIS 121	Georeferencing and Mapping
Elective 2	GIS 215	GIS Data Models
		or COE 212 Work Experience IV and
		COE 215 Work Experience Seminar IV)

Computer Information Technology Associate in Applied Science Degree (A25260) - Evening Schedule *(Begins in even years only)*

First Semester (Fall)			**Credits**
ACA	115	Success & Study Skills	1
CIS	110	Introduction to Computers	3
NOS	110	Operating System Concepts	3

Second Semester (Spring)

CIS	115	Intro to Programming and Logic	3
GIS	111	Introduction to GIS	3
WEB	115	Web Markup and Scripting	3

Third Semester (Summer)

ENG	111	Expository Writing	3
MAT	115	Mathematical Models (or MAT 171)	3
		Humanities/Fine Arts Elective	3

Fourth Semester (Fall)

DBA	110	Database Concepts	3
NOS	130	Windows Single User	3
WEB	111	Introduction to Web Graphics	3

Fifth Semester (Spring)

CTS	120	Hardware/Software Support	3
CTS	135	Integrated Software Intro	4

Sixth Semester (Summer)

ENG	114	Prof. Research and Reporting	3
NET	110	Networking Concepts	3

Seventh Semester (Fall)

CTS	115	Info Sys Business Concept	3
CTS	285	Systems Analysis and Design	3
NOS	230	Windows Admin I	3
		Major Elective 1*	3

Eighth Semester (Spring)

CTS	287	Emerging Technologies	3
CTS	289	System Support Project	3
		Major Elective 2*	3

Ninth Semester (Summer)

SEC	110	Security Concepts	3
		Social/Behavioral Science Elective	3

Total Credit Hours Required **74**

*Major 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 COE 212 Work Experience IV and
		COE 215 Work Experience Seminar IV)

Option II - Tech Support:

Elective 1	CTS 217	Computer Training and Support
Elective 2	CTS 220	Adv. Hardware/Software Support
		(or COE 212 Work Experience IV and
		COE 215 Work Experience Seminar IV)

Option III - Business Support:

Elective 1	CTS 217	Computer Train/Support
Elective 2	WEB 210	Web Design
		(or COE 212 Work Experience IV and
		COE 215 Work Experience Seminar IV)

Option IV - Geographic Information Systems:

Elective 1	GIS121 Georeferencing and Mapping
Elective 2	GIS215 GIS Data Models
	(or COE 212 Work Experience IV and
	COE 215 Work Experience Seminar IV)

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. 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
WEB	115	Web Markup and Scripting	3
Total Credit Hours Required			**16**

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 complete 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	217	Computer Training/Support	3
CTS	220	Advanced Hardware/Software Support	3
NOS	110	Operating System Concepts	3
NOS	130	Windows Single User	3
Total Credit Hours Required			**18**

Computer Basics Certificate (C25260L6)

The Computer Basics certificate provides students with an essential set of skills to prepare for the workplace. Students will learn to: (1) use the most popular software application package, (2) create and design databases; (3) design web sites and (4) perform operating system basics on different platforms.

This certificate is designed for students who want to improve their skills for the workplace. Successful applications for this certificate must complete all courses listed below with at least a grade of C.

Major Requirements			Credits
CIS	110	Introduction to Computers	3
CIS	115	Introduction to Programming and Logic	3
DBA	110	Database Concepts	3
NOS	110	Operating System Concepts	3
WEB	115	Web Markup and Scripting	3
Total Credit Hours Required			**15**

GIS Fundamentals Certificate (C25260L7)

The Geospatial Technology (GIS) Certificate: Fundamentals 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; principles of map design and effective cartographic communication; 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 technology skills. If a student does not have prior computer proficiency, other coursework might be required to meet course pre-requisites.

Successful applicants for the certificate must have completed all courses listed below with at least a grade of C.

Major Requirements			Credits
CIS	115	Intro to Programming and Logic	3
GIS	111	Introduction to GIS	3
GIS	121	Georeferencing and Mapping	3
GIS	215	GIS Data Models	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 Hepatitis B vaccine. First dose to be completed by the first day of class. Second Hepatitis B vaccine to be completed at least one month after the first dose. Third dose must be completed six months after the first.
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 pregnant, be color blind, or have sensitivity to chemicals.
5. Students should be physically able to use cosmetology equipment such as clippers and shears and be able to stand for long periods of time.

Cosmetology Associate in Applied Science (A55140)

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

First Semester (Fall)			Credits
ACA	115	Success &Study Skills	1
CIS	113	Computer Basics	1
COS	111	Cosmetology Concepts I	4
COS	112	Salon I	8
Second Semester (Spring)			
BUS	151	People Skills	3
COS	113	Cosmetology Concepts II	4
COS	114	Salon II	8
Third Semester (Summer)			
COM	120	Intro Interpersonal Com	3
COS	115	Cosmetology Concepts III	4
COS	116	Salon III	4
Fourth Semester (Fall)			
COS	117	Cosmetology Concepts IV	2
COS	118	Salon IV	7
ENG	111	Expository Writing (or ENG 110)	3
Fifth Semester (Spring)			
BUS	280	REAL Small Business (or BUS 137)	4/3
COS	260	Design Applications	2
MAT	115	Mathematical Models	3
PSY	150	General Psychology	3
		Humanities/Fine Arts Elective	3
Total Credit Hours Required			**67/66**

Cosmetology Associate in Applied Science (A55140) - Evening Schedule

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

First Semester (Fall)			Credits
ACA	115	Success &Study Skills	1
CIS	113	Computer Basics	1
COS	111AB	Cosmetology Concepts I	2
COS	112AB	Salon I	4
Second Semester (Spring)			
BUS	151	People Skills	3
COS	111BB	Cosmetology Concepts I	2
COS	112BB	Salon I	4
Third Semester (Summer)			
COS	113AB	Cosmetology Concepts II	2
COS	114AB	Salon II	4
Fourth Semester (Fall)			
COS	113BB	Cosmetology Concepts II	2
COS	114BB	Salon II	4
ENG	111	Expository Writing (or ENG 110)	3

Fifth Semester (Spring)

COS	115	Cosmetology Concepts III	4
COS	116	Salon III	4

Sixth Semester (Summer)

COM	120	Intro Interpersonal Com	3
COS	117AB	Cosmetology Concepts IV	1
COS	118AB	Salon IV	2
PSY	150	General Psychology	3

Seventh Semester (Fall)

COS	117BB	Cosmetology Concepts IV	1
COS	118BB	Salon IV	5
MAT	115	Mathematical Models	3

Eighth Semester (Spring)

BUS	280	REAL Small Business (or BUS 137)	4/3
COS	260	Design Applications	2
		Humanities/Fine Arts Elective	3

Total Credit Hours Required **67/66**

Cosmetology – Diploma (D55140)

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

First Semester (Fall)			**Credits**
ACA	115	Success &Study Skills	1
COS	111	Cosmetology Concepts I	4
COS	112	Salon I	8

Second Semester (Spring)

COS	113	Cosmetology Concepts II	4
COS	114	Salon II	8

Third Semester (Summer)

COM	120	Intro Interpersonal Com	3
COS	115	Cosmetology Concepts III	4
COS	116	Salon III	4

Fourth Semester (Fall)

COS	117	Cosmetology Concepts IV	2
COS	118	Salon IV	7
PSY	150	General Psychology	3

Total Credit Hours Required **48**

Cosmetology – Diploma (D55140) - Evening Schedule

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

First Semester (Fall)			**Credits**
ACA	115	Success &Study Skills	1
COS	111AB	Cosmetology Concepts I	2
COS	112AB	Salon I	4

Second Semester (Spring)

COS	111BB	Cosmetology Concepts I	2
COS	112BB	Salon I	4

Third Semester (Summer)

COS	113AB	Cosmetology Concepts II	2
COS	114AB	Salon II	4

Fourth Semester (Fall)

COS	113BB	Cosmetology Concepts II	2
COS	114BB	Salon II	4

Fifth Semester (Spring)

COS	115	Cosmetology Concepts III	4
COS	116	Salon III	4

Sixth Semester (Summer)

COM	120	Intro Interpersonal Com	3
COS	117AB	Cosmetology Concepts IV	1
COS	118AB	Salon IV	2
PSY	150	General Psychology	3

Seventh Semester (Fall)

COS	117BB	Cosmetology Concepts IV	1
COS	118BB	Salon IV	5

Total Credit Hours Required **48**

Cosmetology Instructor

The Cosmetology Instructor curriculum provides a course of study for learning the skills needed to teach the theory and practice of cosmetology as required by the North Carolina Board of Cosmetic Arts.

Course work includes requirements for becoming an instructor, introduction to teaching theory, methods and aids, practice teaching, and development of evaluation instruments.

Graduates of the program may be employed as cosmetology instructors in public or private education and business.

Specific Program Requirements

1. General college admission requirements.
2. Completion of required Hepatitis B vaccine. First dose to be completed by the first day of class. Second Hepatitis B vaccine to be completed at least one month after the first dose. Third dose must be completed six months after the first.
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 pregnant, be color blind, 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.
6. Applicants of the Cosmetology Instructor program should hold a current North Carolina State Board of Cosmetic Arts Cosmetologist license.

Cosmetology Instructor – Certificate (C55160)

First Semester (Fall)		Credits
COS 271	Instructor Concepts I	5
COS 272	Instructor Practicum I	7
Second Semester (Spring)		
COS 273	Instructor Concepts II	5
COS 274	Instructor Practicum II	7
Total Credit Hours Required		**24**

Culinary Arts

This 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 foodservice and health care facilities.

Students will be provided theoretical knowledge/ practical applications that provide critical competencies to meet industry demands, including environmental stewardship, operational efficiencies and professionalism. Courses include sanitation/ safety, baking, garde manger, culinary fundamentals/ production skills, nutrition, customer service, purchasing/cost control, and human resource management.

Graduates should qualify for entry-level opportunities including prep cook, line cook, and station chef. American Culinary Federation certification may be available to graduates. With experience, graduates may advance to positions including sous chef, pastry chef, executive chef, or foodservice manager.

Specific Program Requirements

1. General college admission requirements.
2. Completion of first dose of Hepatitis A vaccine is required by the first day of food preparation and service classes. Second Hepatitis A vaccine must be completed within six to 12 months of the first vaccination.

Culinary Arts Associate in Applied Science Degree (A55150)

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

First Semester (Fall)		Credits
ACA 115	Success & Study Skills	1
CUL 110	Sanitation & Safety	2
CUL 110A	Sanitation & Safety Lab	1
CUL 140	Culinary Skills I	5
CUL 150	Food Science	2
ENG 111	Expository Writing (or ENG 110)	3
MAT 115	Mathematical Models	3
PSY 150	General Psychology	3
Second Semester (Spring)		
CIS 110	Introduction to Computers	3
CUL 160	Baking I	3
CUL 170	Garde Manger I	3
CUL 240	Culinary Skills II	5
CUL 240A	Culinary Skills II Lab	1
HRM 220	Cost Control - Food & Bev	3
Third Semester (Summer)		
COE 112	Co-op Work Experience I	2
Fourth Semester (Fall)		
CUL 112	Nutrition for Food Service	3
CUL 130	Menu Design	2
CUL 214	Wine Appreciation	2
CUL 230	Global Cuisines (or CUL 275)	5
CUL 260	Baking II (or CUL 285)	3
CUL 270	Garde Manger II	3

Fifth Semester (Spring)			
COM	231	Public Speaking	3
CUL	135	Food & Beverage Service	2
CUL	135A	Food & Beverage Serv Lab	1
CUL	250	Classical Cuisine	5
CUL	273	Career Development	1
HRM	245	Human Resource Mgmt - Hosp	3
		Humanities/Fine Arts Elective	3

Total Credit Hours Required **76**

Cyber Crime Technology

This curriculum will prepare students to enter the field of computer crime investigations and private security. Students completing this curriculum will be capable of investigating computer crimes, properly seize and recover computer evidence and aid in the prosecution of cyber criminals.

Course work in this curriculum will include a division of work in the disciplines of criminal justice and computer information systems. Additionally, students will be required to take specific cyber crime classes.

Graduates should qualify to become computer crime investigators for local or state criminal justice agencies. Also, these graduates should be competent to serve as computer security specialists or consultants with private business.

The program is offered in collaboration with Catawba Valley Community College, Hickory, North Carolina. General education and related courses may be taken at A-B Tech. Major area (CCT) classes are taken through Catawba Valley Community College. The degree is awarded by Catawba Valley Community College.

Cyber Crime Technology Associate in Applied Science Degree (A55210)

Courses requiring a grade of "C" or better: ACA, CCT, CIS, CJC, CTS, NET, NOS, and SEC

First Semester (Fall)			**Credits**
ACA	115	Success & Study Skills	1
CJC	111	Introduction to Criminal Justice	3
CJC	131	Criminal Law	3
CCT	110	Introduction to Cyber Crime	3
CCT	112	Ethics and High Technology	3
CIS	110	Introduction to Computers	3

Second Semester (Spring)			
CJC	112	Criminology	3
CCT	121	Computer Crime Investigations	4
NOS	110	Operating Systems Concepts	3
CTS	120	Hardware/Software Support	3
NET	125	Networking Basics	3

Third Semester (Summer)			
ENG	111	Expository Writing	3
MAT	115	Mathematical Models	3
PSY	150	General Psychology	3

Fourth Semester (Fall)			
CCT	231	Technology Crimes and Law	3
CCT	240	Data Recovery Techniques	3
CCT	250	Networking Vulnerabilities I	3
SEC	110	Security Concepts	3

Fifth Semester (Spring)			
CCT	285	Trends in Cyber Crime	3
CCT	289	Capstone Project	3
ENG	114	Professional Research and Reporting	3
		Humanities/Fine Arts Elective	3

Total Credit Hours Required **65**

Digital Media Technology

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

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

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

Digital Media Technology Associate in Applied Science Degree (A25210)

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

First Semester (Fall)			Credits
ACA	115	Success & Study Skills	1
CIS	110	Introduction to Computers	3
DME	110	Introduction to Digital Media	3
DME	115	Graphic Design Tools	3
WEB	115	Web Markup and Scripting	3

Second Semester (Spring)			
CIS	115	Introduction to Programming and Logic	3
DME	130	Digital Animation I	3
DME	215	Adv Graphic Design Tools	3
ENG	111	Expository Writing	3
WEB	210	Graphic Design	3

Third Semester (Summer)			
ENG	114	Prof. Research & Reporting	3
MAT	115	Mathematical Models (or MAT 171)	3

Fourth Semester (Fall)			
DME	120	Intro to Multimedia Applications	3
DME	140	Introduction to Audio/Video Media	3
DME	210	User Interface Design	3
DME	230	Digital Animation II	3
		Major Elective 1*	3

Fifth Semester (Spring)			
DME	260	Emerging Technologies in Digital Media	3
DME	270	Professional Practices in Digital Media	3
DME	285	Systems Project	3
		Major Elective 2*	3

Sixth Semester (Summer)			
		Humanities/Fine Arts Elective	3
		Social/Behavioral Science Elective	3

Total Credit Hours Required **67**

*Major Electives: Students have the ability to select an area of interest through the selection of their major electives. The following are the four 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	WEB course approved by advisor
Elective 2	DME 220	Interactive Multimedia Programming (or COE 212 Work Experience IV and COE 215 Work Experience Seminar IV)

Artistic Track:

Elective 1	ART	Art course approved by advisor (or WEB 111)
Elective 2	ART	Art course approved by advisor (or COE 212 Work Experience IV and COE 215 Work Experience Seminar IV)

Video Track:

Elective 1	FVP 250	Production Specialties (or ART 266)
Elective 2	DME 240	Media Compression

GIS Track:

Elective 1	GIS 111	Introduction to GIS
Elective 2	GIS 121	Georeferencing and Mapping (or GIS 222)

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

First Semester (Fall)			Credits
ACA	115	Success & Study Skills	1
CIS	110	Introduction to Computers	3
DME	110	Introduction to Digital Media	3
MAT	115	Mathematical Models (or MAT 171)	3

Second Semester (Spring)			
DME	115	Graphic Design Tools	3
DME	130	Digital Animation I	3
WEB	115	Web Markup and Scripting	3

Third Semester (Summer)			
ENG	111	Expository Writing	3
		Social/Behavioral Science Elective	3

Fourth Semester (Fall)			
CIS	115	Introduction to Programming and Logic	3
DME	215	Adv Graphic Design Tools	3
WEB	210	Web Design	3

Fifth Semester (Spring)			
DME	120	Intro to Multimedia Applications	3
DME	140	Introduction to Audio/Video Media	3
DME	230	Digital Animation II	3

Sixth Semester (Summer)

ENG 114	Prof. Research & Reporting	3
	Humanities/Fine Arts Elective	3

Seventh Semester (Fall)

DME 210	User Interface Design	3
DME 260	Emerging Technologies in Digital Media	3
	Major Elective 1*	3

Eighth Semester (Spring)

DME 270	Professional Practices in Digital Media	3
DME 285	System Project	3
	Major Elective 2*	3

Total Credit Hours Required **67**

*Major Electives: Students have the ability to select an area of interest through the selection of their major electives. The following are the four 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	WEB course approved by advisor
Elective 2	DME 220	Interactive Multimedia Programming (or COE 212 Work Experience IV and COE 215 Work Experience Seminar IV)

Artistic Track:

Elective 1	ART	Art course approved by advisor (or WEB 111)
Elective 2	ART	Art course approved by advisor (or COE 212 Work Experience IV and COE 215 Work Experience Seminar IV)

Video Track:

Elective 1	FVP 250	Production Specialties (or ART 266)
Elective 2	DME 240	Media Compression

GIS Track:

Elective 1	GIS 111	Introduction to GIS
Elective 2	GIS 121	Georeferencing and Mapping (or GIS 222)

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 course work might be required to meet course pre-requisites.

Successful applicants for the certificate must complete all courses listed below with at least a grade of C.

Major Requirements		**Credits**
DME 115	Graphic Design Tools	3
DME 140	Introduction to Audio/Video Media	3
DME 240	Media Compression	3
FVP 250	Production Specialties I	3
Total Credit Hours Required		**12**

Digital Media Technology Interactive Multimedia Certificate (C25210L2)

The Interactive Multimedia Certificate provides training in multiple aspects of interactive multimedia using HTML5 web development methods and practices. Topics will include . HTML markup, CSS2 and CSS3, javascript, and software to create HTML5 animation and interactivity.

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

Successful applicants for this certificate must complete all courses listed below with at least a grade of C.

Major Requirements		**Credits**
DME 120	Intro to Multimedia Applications	3
DME 130	Digital Animation I	3
DME 220	Interactive Multimedia Programming	3
WEB 115	Web Markup and Scripting	3
WEB 210	Web Design	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: ACA, ACC, BUS, CIS, ECO and ETR

First Semester (Fall)			Credits
ACA	115	Success & Study Skills	1
ACC	120	Principles of Financial Accounting	4
BUS	110	Introduction to Business	3
CIS	110	Introduction to Computers	3
ENG	111	Expository Writing	3
HUM	115	Critical Thinking	3

Second Semester (Spring)			
ACC	121	Principles of Managerial Accounting	4
CTS	130	Spreadsheet	3
ENG	114	Professional Research & Reporting	3
ETR	210	Introduction to Entrepreneurship	3
ETR	220	Innovation and Creativity	3
PSY	150	General Psychology	3

Third Semester (Summer)			
BUS	137	Principles of Management	3
COM	231	Public Speaking	3
ECO	251	Principles of Microeconomics	3
MAT	115	Mathematical Models (or MAT 151/151A)	3

Fourth Semester (Fall)			
ECO	252	Principles of Macroeconomics	3
ETR	215	Law for Entrepreneurs	3
ETR	230	Entrepreneur Marketing	3
ETR	240	Funding for Entrepreneurs	3
WEB	115	Web Markup and Scripting	3

Fifth Semester (Spring)			
ACC	150	Accounting Software Applications	2
BUS	175	Contract Negotiations	3
BUS	280	REAL Small Business	4
ETR	270	Entrepreneurship Issues	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 the certificate must complete all courses listed below with at least a grade of C.

Major Requirements			Credits
ACC	120	Principles of Financial Accounting	4
BUS	280	REAL Small Business	4
ETR	210	Introduction to Entrepreneurship	3
ETR	240	Funding for Entrepreneurs	3
WEB	115	Web Markup and Scripting	3
Total Credit Hours Required			**17**

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 that 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 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 complete 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 Hepatitis B vaccine. First dose to be completed by the first day of class. Second Hepatitis B vaccine to be completed at least one month after the first dose. Third dose must be completed six months after the first.

3. Esthetics Technology students must clock out when leaving the laboratory. To earn hours, students must be physically present in the laboratory.

4. Students should be physically able to operate esthetics equipment and safely use products used in esthetics.

Esthetics Technology Certificate (C55230)

First Semester (Fall)		Credits
COS 119	Esthetics Concepts I	2
COS 120	Esthetics Salon I	6
Second Semester (Spring)		
COS 125	Esthetics Concepts II	2
COS 126	Esthetics Salon II	6
Total Credit Hours Required		**16**

Foodservice Technology

This curriculum is designed to introduce students to the foodservice industry and prepare them for entry-level positions in industrial, institutional or commercial production foodservice operations.

Courses include sanitation, basic and intermediate foodservice production skills, baking, menus, purchasing and basic cost control.

Graduates should qualify for employment as line cooks, prep cooks, or bakers in production foodservice settings or entry-level kitchen management in an institutional foodservice setting.

Specific Program Requirements

1. General college admission requirements.

2. Completion of first dose of Hepatitis A vaccine is required by the first day of food preparation and service classes. Second Hepatitis A vaccine must be completed within six to 12 months of the first vaccination.

Foodservice Technology Diploma (D55250)

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

First Semester (Fall)		Credits
ACA 115	Success & Study Skills	1
CUL 110	Sanitation & Safety	2
CUL 110A	Sanitation & Safety Lab	1
CUL 140	Culinary Skills I	5
ENG 111	Expository Writing (or ENG 110)	3
HRM 110	Intro to Hosp & Tourism	3
PSY 150	General Psychology	3
Second Semester (Spring)		
CUL 130	Menu Design	2
CUL 160	Baking I	3
CUL 170	Garde Manger I	3
CUL 240	Culinary Skills II	5
CUL 260	Baking II	3
CUL 273	Career Development	1
HRM 260	Procurement for Hosp	3
Total Credit Hours Required		**38**

Healthcare Business Informatics

The Healthcare Business Informatics curriculum prepares individuals for employment as specialists in installation, data management, data archiving/retrieval, system design and support, and computer training for medical information systems.

Students learn about the field through multidisciplinary coursework, including the study of terminology relating to informatics, systems analysis, networking technology, computer/network security, data warehousing, archiving and retrieval of information, and healthcare computer infrastructure support.

Graduates should qualify for employment as database/data warehouse analysts, technical support professionals, informatics technology professionals, systems analysts, networking and security technicians, and computer maintenance professionals in the healthcare field.

Healthcare Business Informatics Associate in Applied Science Degree (A25510)

Courses requiring a grade of "C" or better: ACA, BUS, CIS, COE, CTS, DBA, ETR, HBI, MED, NET, NOS, OST, SEC, WEB

First Semester (Fall)			Credits
ACA	115	Success & Study Skills	1
CIS	110	Introduction to Computers	3
ENG	111	Expository Writing	3
OST	141	Med Terms I - Med Office	3
SEC	110	Security Concepts	3
NOS	110	Operating System Concepts	3
Second Semester (Spring)			
DBA	110	Database Concepts	3
HBI	110	Issues and Trends in HBI	3
HBI	113	Survey of Med Insurance	3
OST	142	Med Terms II - Med Office	3
ENG	114	Prof. Research and Reporting	3
Third Semester (Summer)			
OST	149	Medical Legal Issues	3
MAT	115	Mathematical Models (or MAT 161/161A)	3
Fourth Semester (Fall)			
CIS	115	Intro to Programming and Logic	3
CTS	120	Hardware/Software Support	3
DBA	120	Database Programming I	3
HBI	250	Data Management and Utilization	3
		Major Elective 1*	3
Fifth Semester (Spring)			
CTS	115	Information System Business Concepts	3
ETR	210	Intro to Entrepreneurship (or BUS 110)	3
HBI	289	System Support Project	3
NET	110	Networking Concepts	3
		Major Elective 2*	3
Sixth Semester (Summer)			
		Humanities/Fine Arts Elective	3
		Social/Behavioral Science Elective	3
Total Credit Hours Required			**73**

*Major Electives: COE 212, COE 215, CTS 135, CTS 217, CTS 220, DBA 210, WEB 115, WEB 182

Healthcare Business Informatics - Evening Program

(Offered in odd numbered years)
Courses requiring a grade of "C" or better: ACA, BUS, CIS, COE, CTS, DBA, ETR, HBI, MED, NET, NOS, OST, SEC, WEB

First Semester (Fall)			Credits
ACA	115	Success & Study Skills	1
CIS	110	Introduction to Computers	3
NOS	110	Operating System Concepts	3
OST	141	Med Terms I - Med Office	3
Second Semester (Spring)			
DBA	110	Database Concepts	3
HBI	110	Issues and Trends in HBI	3
OST	142	Med Terms II - Med Office	3
Third Semester (Summer)			
ENG	111	Expository Writing	3
MAT	115	Mathematical Models or MAT171 - Precalculus Algebra	3
Fourth Semester (Fall)			
HBI	113	Survey of Med Insurance	3
DBA	120	Database Programming I	3
NET	110	Networking Concepts	3
Fifth Semester (Spring)			
CTS	120	Hardware/Software Support	3
ETR	210	Intro to Entrepreneurship (or BUS 110)	3
OST	149	Medical Legal Issues	3
Sixth Semester (Summer)			
ENG	114	Prof. Research and Reporting	3
		Social/Behavioral Science Elective	3
Seventh Semester (Fall)			
CIS	115	Intro to Programming and Logic	3
HBI	250	Data Management and Utilization	3
		Major Elective 1	3
Eighth Semester (Spring)			
CTS	115	Info Sys Business Concepts	3
HBI	289	System Support Project	3
		Major Elective 2	3

Ninth Semester (Summer)

SEC 110	Security Concepts	3
	Humanities Elective	3
Total Credit Hours Required		73

*Major Electives: COE212, COE215, CTS 135, CTS 217, CTS220, DBA 210, WEB 115, WEB 182

Hospitality Management

This curriculum prepares individuals 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 guest services, leadership, management, restaurant operations, lodging operations, marketing, sanitation, food preparation, food and beverage management and other critical areas.

Graduates should qualify for management or entry-level supervisory positions in food and lodging operations, including restaurants, foodservice, beverage service, catering, front office, reservations and housekeeping. Opportunities are also available in product services, and technology support and sales.

Mountain Tech Lodge

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

Specific Program Requirements

1. General college admission requirements.
2. Completion of first dose of Hepatitis A vaccine is required by the first day of food preparation and service classes. The second Hepatitis A dose must be completed within six to 12 months of the first.

Hospitality Management Associate in Applied Science Degree (A25110)

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

First Semester (Fall)		**Credits**
ACA 115	Success & Study Skills	1
CUL 110	Sanitation & Safety	2
CUL 110A	Sanitation & Safety Lab	1
CUL 142	Fundamentals of Food	5
HRM 110	Intro to Hosp & Tourism	3
HRM 124	Guest Service Management	3
MAT 115	Mathematical Models	3

Second Semester (Spring)

ACC 120	Principles of Financial Accounting	4
CUL 135	Food & Beverage Service	2
CUL 135A	Food & Beverage Serv Lab	1
ENG 111	Expository Writing (or ENG 110)	3
HRM 120	Front Office Procedures	3
HRM 120A	Front Office Procedures Lab	1
HRM 220	Cost Control-Food & Bev	3

Third Semester (Summer)

COE 112	Co-op Work Experience I	2

Fourth Semester (Fall)

CIS 110	Introduction to Computers	3
HRM 210	Meetings & Event Planning	3
HRM 215	Restaurant Management	3
HRM 215A	Restaurant Management Lab	1
HRM 225	Beverage Management	3
HRM 240	Marketing for Hospitality	3
HRM 245	Human Resource Mgmt-Hosp	3

Fifth Semester (Spring)

COM 231	Public Speaking	3
CUL 273	Career Development	1
HRM 135	Facilities Management (or HRM 275)	3
HRM 140	Legal Issues-Hospitality	3
HRM 280	Mgmt Problems - Hospitality	3
PSY 150	General Psychology	3
	Humanities/Fine Arts Elective	3
Total Credit Hours Required		**75**

Leadership in Hospitality Certificate (C25110L1)

The Leadership in Hospitality 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.

Major Requirements		**Credits**
CUL 110	Sanitation & Safety	2
HRM 140	Legal Issues-Hospitality	3
HRM 210	Meetings & Event Planning	3
HRM 240	Marketing for Hospitality	3
HRM 245	Human Resource Mgmt-Hosp	3
HRM 275	Leadership-Hospitality	3
Total Credit Hours Required		**17**

Human Resources Management

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

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

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

This program is offered in the evening only.

Human Resources Management Associate in Applied Science Degree (A2512C) - Evening Program

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

First Semester (Fall)			Credits
ACA	115	Success & Study Skills	1
ACC	120	Principles of Financial Accounting	4
BUS	110	Introduction to Business	3
BUS	151	People Skills	3
HUM	115	Critical Thinking	3

Second Semester (Spring)

BUS	153	Human Resource Management	3
BUS	255	Org Behavior Business	3
CIS	110	Introduction to Computers	3
ENG	111	Expository Writing (or ENG 110)	3

Third Semester (Summer)

BUS	137	Principles of Management	3

Fourth Semester (Fall)

ACC	140	Payroll Accounting	2
BUS	115	Business Law I	3
BUS	256	Recruit Select & Per Plan	3
MAT	115	Mathematical Models	3

Fifth Semester (Spring)

BUS	217	Employment Laws and Regulations	3
BUS	240	Business Ethics	3
BUS	270	Professional Development	3
CTS	130	Spreadsheet	3

Sixth Semester (Summer)

COM	231	Public Speaking	3

Seventh Semester (Fall)

BUS	234	Training and Development	3
BUS	258	Compensation and Benefits	3
ECO	251	Principles of Microeconomics	3
MKT	120	Principles of Marketing	3

Eighth Semester (Spring)

BUS	147	Business Insurance	3
BUS	259	HRM Applications	3
ECO	252	Principles of Macroeconomics	3

Total Credit Hours Required **76**

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. Course work 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 complete all courses listed below with at least a grade of C.

Major Requirements			Credits
BUS	153	Human Resources Management	3
BUS	217	Employment Law and Regulations	3
BUS	234	Training and Development	3
BUS	256	Recruit Select & Per Plan	3
BUS	258	Compensation and Benefits	3
BUS	259	HRM Applications	3

Total Credit Hours Required **18**

Information Systems Security

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

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

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

NSA-NIATP Courseware Certification

Courseware in the Information Systems Security program has been certified by the National Security Agency, National Information Assurance Education and Training Program meeting the requirements as set forth by the national training standards Information Systems Security (INFOSEC) Professionals NSTISSI No. 4011 and Systems Administrators (SA), CNSSI 4013. This certification gives A-B Tech the authority to recognize candidates who demonstrate that they have met 4011 and 4013 training standards. Candidates who have met the standard will be issued a certificate of recognition acknowledging their completion of the CNSS 4011 and 4013 requirements.

Information Systems Security Associate in Applied Science Degree (A25270)

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

First Semester (Fall)			Credits
ACA	115	Success & Study Skills	1
CIS	111	Basic PC Literacy	2
NET	125	Networking Basics	3
NOS	110	Operating Systems Concepts	3
SEC	110	Security Concepts	3

Second Semester (Spring)

DBA	110	Database Concepts	3
NET	126	Routing Basics	3
NOS	120	Linux/UNIX Single User	3
NOS	130	Windows Single User	3
SEC	160	Secure Admin I	3

Third Semester (Summer)

ENG	111	Expository Writing	3
MAT	161	College Algebra	3
MAT	161A	College Algebra Lab	1
PSY	150	General Psychology	3

Fourth Semester (Fall)

CTI	240	Virtualization Admin I	3
NET	225	Routing and Switching I	3
NET	226	Routing and Switching II	3
SEC	210	Intrusion Detection	3
SEC	220	Defense-In-Depth	3

Fifth Semester (Spring)

BUS	110	Introduction to Business	3
CIS	115	Introduction to Programming and Logic	3
SEC	150	Secure Communication	3
SEC	293S	Selected Topics in Information Security	3

Sixth Semester (Summer)

ENG	114	Professional Research and Reporting	3
HUM	110	Technology and Society	3
SEC	289	Security Capstone Project	3

Total Credit Hours Required **73**

CNSS 4011/4013 Certificate (C25270L1)

This certificate is intended for information security professionals and system administrators responsible for the security oversight or management of critical networks. A-B Tech is authorized to recognize individuals completing the national training requirements set forth by the Committee on National Security Systems in Information Systems Security (INFOSEC) Professionals NSTISSI No. 4011 and Systems Administrators (SA), CNSSI 4013. Candidates who demonstrate their attainment of the knowledge and skills required by these training standards will be issued a certificate of recognition acknowledging their completion of the requirements.

The instruction included in this program is required for those INFOSEC professionals and systems administrators employed by a federal government department or agency. It is also desirable for those same individuals working for a private sector entity under contract to provide management services to the federal government to have this training.

Applicants to this program must already have at least an Associate of Applied Science degree in an information technology field, be enrolled in an information technology-related degree program, or have permission from the department chair.

Major Requirements			Credits
NET	125	Networking Basics	3
SEC	110	Security Concepts	3
SEC	160	Security Admin I	3
SEC	220	Defense-In-Depth	3
Total Credit Hours Required			**12**

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 complete 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 Hepatitis B vaccine. First dose to be completed by the first day of class. Second Hepatitis B vaccine to be completed at least one month after the first dose. Third dose must be completed six months after the first.
3. Manicuring/Nail Technology students must clock out when leaving the laboratory. To earn hours, students must be physically present in the laboratory.
4. Students should be physically able to operate manicuring/nail technology equipment and safely use manicuring/nail technology products for long periods of time.

Manicuring/Nail Technology Certificate (C55400)

Major Requirements			Credit
COS	121	Manicure/Nail Technology I	6
COS	222	Manicure/Nail Tech 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: ACA, ACC, BUS, CIS, CTS, ECO and MKT

First Semester (Fall)			Credits
ACA	115	Success and Study Skills	1
ACC	120	Principles of Financial Accounting	4
BUS	110	Introduction to Business	3
BUS	115	Business Law I	3
CIS	110	Introduction to Computers	3
HUM	115	Critical Thinking	3
MKT	120	Principles of Marketing	3
Second Semester (Spring)			
ACC	121	Principles of Managerial Accounting	4
BUS	137	Principles of Management	3
MKT	122	Visual Merchandising	3
MKT	221	Consumer Behavior	3
WEB	115	Web Markup and Scripting	3
Third Semester (Summer)			
ECO	251	Principles of Microeconomics	3
ENG	111	Expository Writing (or ENG 110)	3
MAT	115	Mathematical Models	3
Fourth Semester (Fall)			
CTS	130	Spreadsheet	3
ECO	252	Principles of Macroeconomics	3
MKT	121	Retailing	3
MKT	123	Fundamentals of Selling	3
MKT	224	International Marketing	3

Fifth Semester (Spring)		
COM 231	Public Speaking	3
MKT 220	Advertising and Sales Promotion	3
MKT 225	Marketing Research	3
MKT 227	Marketing Applications	3
MKT 229	Special Events Production	2
Total Credit Hours Required		**74**

Marketing and Retailing Associate in Applied Science Degree - Evening Program (A2512F)

First Semester (Fall)		**Credits**
ACA 115	Success and Study Skills	1
ACC 120	Principles of Financial Accounting	4
BUS 110	Introduction to Business	3
HUM 115	Critical Thinking	3
Second Semester (Spring)		
ACC 121	Principles of Managerial Accounting	4
CIS 110	Introduction to Computers	3
MKT 120	Principles of Marketing	3
Third Semester (Summer)		
BUS 137	Principles of Management	3
ENG 111	Expository Writing (or ENG 110)	3
MAT 115	Mathematical Models	3
Fourth Semester (Fall)		
BUS 115	Business Law I	3
ECO 251	Principles of Microeconomics	3
MKT 123	Fundamentals of Selling	3
Fifth Semester (Spring)		
CTS 130	Spreadsheet	3
ECO 252	Principles of Macroeconomics	3
MKT 220	Advertising and Sales Promotion	3
WEB 115	Web Markup and Scripting	3
Sixth Semester (Summer)		
COM 231	Public Speaking	3
Seventh Semester (Fall)		
MKT 121	Retailing	3
MKT 122	Visual Merchandising	3
MKT 221	Consumer Behavior	3
Eighth Semester (Spring)		
MKT 224	International Marketing	3
MKT 225	Marketing Research	3
MKT 227	Marketing Applications	3
MKT 229	Special Events Production	2
Total Credit Hours Required		**74**

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 the certificate must complete all courses listed below with at least a grade of C.

Major Requirements		**Credits**
BUS 110	Introduction to Business	3
MKT 120	Principles of Marketing	3
MKT 121	Retailing	3
MKT 122	Visual Merchandising	3
MKT 221	Consumer Behavior	3
Total Credit Hours Required		**15**

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 Associate in Applied Science Degree (A25310)

Courses requiring a grade of "C" or better: ACA, ACC, BUS, CIS and OST

Entrance requirements: Keyboarding placement test into OST 134 consisting of 25 gross words a minute (gwam) at 98% accuracy using the touch system and college English placement test.

First Semester (Fall)			Credits
ACA	115	Success & Study Skills	1
CIS	110	Introduction to Computers	3
ENG	111	Expository Writing (or ENG 110)	3
OST	136	Word Processing	3
OST	141	Med Terms I-Med Office	3
OST	164	Text Editing Applications	3
Second Semester (Spring)			
BIO	163	Basic Anatomy & Physiology	5
OST	134	Text Entry and Formatting	3
OST	142	Med Terms II-Med Office	3
OST	148	Medical Coding, Billing & Insurance	3
OST	184	Records Management	3
Third Semester (Summer)			
COM	231	Public Speaking	3
OST	132	Keyboard Skill Building	2
OST	149	Medical Legal Issues	3
OST	243	Med Office Simulation	3
OST	289	Administrative Office Management	3
Fourth Semester (Fall)			
ACC	120	Principles of Financial Accounting	4
MAT	115	Mathematical Models	3
OST	137	Office Software Applications	3
OST	286	Professional Development	3
		Humanities/Fine Arts Elective	3
Fifth Semester (Spring)			
BUS	151	People Skills	3
OST	233	Office Publications Design	3
PSY	150	General Psychology	3
		Major Elective*	3
Total Credit Hours Required			**75**

*Major Electives: BUS 110, BUS 153, CTS 130, DBA 110, SPA 120, or OST 247 and OST 248 (departmental approval required).

Medical Office Administration Diploma (D25310)

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

Entrance requirements: Keyboarding placement test into OST 134 consisting of 25 gross words a minute (gwam) at 98% accuracy using the touch system and college English placement test.

First Semester (Fall)			Credits
ACA	115	Success and Study Skills	1
CIS	110	Introduction to Computers	3
ENG	111	Expository Writing (or ENG 110)	3
OST	136	Word Processing	3
OST	141	Medical Terms I-Med Office	3
OST	164	Text Editing Applications	3
Second Semester (Spring)			
BIO	163	Basic Anatomy and Physiology	5
OST	134	Text Entry and Formatting	3
OST	142	Medical Terms II-Med Office	3
OST	148	Medical Coding, Billing, and Insurance	3
OST	184	Records Management	3
		Major Elective*	3
Third Semester (Summer)			
OST	132	Keyboard Skill Building	2
OST	149	Medical Legal Issues	3
OST	243	Medical Office Simulation	3
OST	289	Administrative Office Management	3
Total Credit Hours Required			**47**

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

Medical Office Administration Medical Coding Certificate (C25310L1)

The Medical Coding Certificate program will prepare individuals for entry-level employment opportunities in the allied health specialty of medical coding. This is an introductory program that may, with experience and additional training, lead to national certification. 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).

Major Requirements			Credits
BIO	163	Basic Anatomy and Physiology	5
OST	141	Medical Terms I - Med Office	3
OST	142	Medical Terms II - Med Office	3
OST	148	Medical Coding, Billing, and Insurance	3
OST	247	Procedure Coding	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 Association for Healthcare Documentation Integrity to become Certified Medical Transcriptionists.

Medical Transcription - Diploma (D25320)

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

Entrance requirements: Keyboarding placement test into OST 134 consisting of 25 gross words a minute (gwam) at 98% accuracy using the touch system and college English placement test.

First Semester (Fall)			Credits
ACA	115	Success and Study Skills	1
CIS	110	Introduction to Computers	3
OST	134	Text Entry and Formatting	3
OST	136	Word Processing	3
OST	141	Med Terms I - Med Office	3
OST	164	Text Editing Applications	3

Second Semester (Spring)			
BIO	163	Basic Anatomy and Physiology	5
ENG	111	Expository Writing (or ENG 110)	3
OST	132	Keyboard Skill Building	2
OST	142	Med Terms II - Med Office	3
OST	201	Medical Transcription I	4

Third Semester (Summer)			
OST	149	Medical Legal Issues	3
OST	184	Records Management	3
OST	202	Medical Transcription II	4
OST	286	Professional Development	3

Fourth Semester (Fall)			
COE	111	Co-Op Work Experience*	1
Total Credit Hours Required			**47**

*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.

Course work 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: ACA, BUS, CIS, CTI, CTS, DBA, NET, NOS, and SEC

First Semester (Fall)			Credits
ACA	115	Success and Study Skills	1
BUS	110	Introduction to Business	3
CIS	111	Basic PC Literacy	2
NET	125	Networking Basics	3
NOS	110	Operating Systems Concepts	3

Second Semester (Spring)

CTS	120	Hardware/Software Support	3
NET	126	Routing Basics	3
NOS	120	Linux/UNIX Single User	3
NOS	130	Windows Single User	3
SEC	110	Security Concepts	3

Third Semester (Summer)

ENG	111	Expository Writing	3
MAT	161	College Algebra	3
MAT	161A	College Algebra Lab	1
PSY	150	General Psychology	3

Fourth Semester (Fall)

CTI	240	Virtualization Admin I	3
NET	225	Routing and Switching I	3
NET	226	Routing and Switching II	3
NOS	220	Linux/UNIX Admin I	3
NOS	230	Windows Admin I	3

Fifth Semester (Spring)

CIS	115	Introduction to Programming and Logic	3
CTI	241	Virtualization Admin II	3
DBA	110	Database Concepts	3
NET	175	Wireless Technology	3

Sixth Semester (Summer)

ENG	114	Professional Research and Reporting	3
HUM	110	Technology and Society	3
NET	289	Networking Project	3

Total Credit Hours Required **73**

Networking Technology - Evening Program

First Semester (Fall) **Credits**

ACA	115	First-Year Seminar	1
BUS	110	Introduction to Business	3
CIS	111	Basic PC Literacy	2
NOS	110	Operating System Concepts	3

Second Semester (Spring)

NET	125	Networking Basics	3
NOS	120	Linux/UNIX Single User	3
NOS	130	Windows Single User	3

Third Semester (Summer)

DBA	110	Database Concepts	3
ENG	111	Expository Writing	3

Fourth Semester (Fall)

NET	126	Routing Basics	3
NOS	220	Linux/UNIX Admin I	3
NOS	230	Windows Admin I	3

Fifth Semester (Spring)

SEC	110	Security Concepts	3
NET	225	Routing and Switching I	3
NET	226	Routing and Switching II	3

Sixth Semester (Summer)

CTS	120	Hardware/Software Support	3
MAT	161	College Algebra	3
MAT	161A	College Algebra Lab	1

Seventh Semester (Spring)

CIS	115	Intro to Programming and Logic	3
CTI	240	Virtualization Admin I	3
NET	175	Wireless Technology	3

Eighth Semester (Summer)

CTI	241	Virtualization Admin II	3
HUM	110	Technology and Society	3
PSY	150	General Psychology	3

Ninth Semester (Summer)

ENG	114	Professional Research and Reporting	3
NET	289	Networking Project	3

Program Totals **73**

Networking Technology Systems Administration Certificate (C25340L3)

This certificate will prepare individuals to perform tasks commonly associated with systems administrators. Students will learn how to monitor, manage, and troubleshoot computer systems and servers. Upon successful completion of this certificate program students will be able to install, manage, and configure Microsoft Windows™ and Linux operating systems. Applicants must also successfully complete a basic computer concepts assessment or have completed CIS 110 or CIS 111.

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 I	3

NOS 230	Windows Admin I	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 Associate (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 successfully complete a basic computer concepts assessment or have completed CIS 110 or CIS 111.

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 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: ACA, ACC, BUS, CIS, CTS, DBA, OST and WEB

First Semester (Fall)		**Credits**
ACA 115	Success and Study Skills	1
ACC 120	Principles of Financial Accounting	4
CIS 110	Introduction to Computers	3
ENG 111	Expository Writing (or ENG 110)	3
OST 131	Keyboarding	2
OST 286	Professional Development	3
Second Semester (Spring)		
CTS 130	Spreadsheet	3
MAT 115	Mathematical Models	3
OST 134	Text Entry and Formatting	3
OST 136	Word Processing	3
OST 164	Text Editing Applications	3
OST 184	Records Management	3
Third Semester (Summer)		
ACC 140	Payroll Accounting	2
COM 231	Public Speaking	3
OST 132	Keyboard Skill Building	2
OST 289	Administrative Office Management	3
PSY 150	General Psychology	3
Fourth Semester (Fall)		
BUS 260	Business Communications	3
DBA 110	Database Concepts	3
OST 137	Office Software Applications	3
WEB 115	Web Markup and Scripting	3
	Major Elective*	3
Fifth Semester (Spring)		
CTS 217	Computer Training/Support	3
OST 233	Office Publications Design	3
	Humanities/Fine Arts Elective	3
	Major Electives*	5
Total Credit Hours Required		**76**

*Major Electives: ACC 150, BUS 110, BUS 115, BUS 137, BUS 153, BUS 240, CIS 165, NET 110, SPA 120

Office Administration Diploma (D25370)

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

First Semester (Fall)		**Credits**
ACA 115	Success and Study Skills	1
ACC 120	Principles of Financial Accounting	4
CIS 110	Introduction to Computers	3
ENG 111	Expository Writing (or ENG 110)	3
OST 131	Keyboarding	2
OST 286	Professional Development	3

Second Semester (Spring)			
CTS	130	Spreadsheet	3
OST	134	Text Entry and Formatting	3
OST	136	Word Processing	3
OST	164	Text Editing Applications	3
OST	184	Records Management	3

Third Semester (Summer)			
ACC	140	Payroll Accounting	2
COM	231	Public Speaking	3
OST	132	Keyboard Skill Building	2
OST	289	Administrative Office Management	3
		Major Elective*	3

Total Credit Hours Required **44**

*Major Electives: ACC 150, BUS 110, BUS 115, BUS 137, BUS 153, CIS 165, DBA 110, NET 110, SPA 120

Office Administration – Office Management Certificate (C25370L2)

The Office Management Certificate will prepare individuals for entry-level office management positions in business, government, and industry.

Requirements for the certificate include successful completion of the listed courses and the following documented prerequisite office skills:

- Keyboarding skill level at 40 net words a minute (nwam) for 5 minutes (or OST 134)
- Theory and hands-on skill using Windows and Microsoft Office software (Word, Excel, PowerPoint) with 80 percent accuracy (or CIS 110)

Major Requirements			Credits
ACC	120	Principles of Financial Accounting	4
OST	136	Word Processing	3
OST	164	Text Editing Applications	3
OST	289	Administrative Office Management	3
OST	184	Records Management	3

Total Credit Hours Required **16**

Office Administration – Word Processing/ Desktop Publishing Certificate (C25370L1)

This certificate program provides essential training in word processing and desktop publishing. Students will learn state-of-the-art computer software that is used in offices and businesses today.

Major Requirements			Credits
CIS	110	Introduction to Computers	3
OST	131	Keyboarding	2
OST	134	Text Entry and Formatting	3
OST	136	Word Processing	3
OST	233	Office Publications Design	3

Total Credit Hours Required **14**

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 include hospitals/ rehabilitation centers, health departments, home health, medical offices, nursing homes, spas/health/ sports clubs, and private practice. Graduates may be eligible to take the Massage and Bodywork Licensing Exam or the National Certification for Therapeutic Massage and Bodywork.

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 Hepatitis B vaccine. First dose to be completed by the first day of class. Second Hepatitis B vaccine to be completed at least one month after the first dose. Third dose must 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 STATUES (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: ACA, BIO, BUS, CIS, COE, MTH and PSY

First Semester (Fall)			**Credits**
ACA	115	Success &Study Skills	1
BIO	168	Anatomy and Physiology I	4
MTH	110	Fundamentals of Massage	10
PSY	150	General Psychology	3
Second Semester (Spring)			
BIO	169	Anatomy and Physiology II	4
BUS	280	REAL Small Business	4
MTH	120	Ther-Massage Applications	10
MTH	121	Clinical Supplement I	1
Third Semester (Summer)			
CIS	113	Computer Basics	1
COM	120	Intro Interpersonal Com	3
ENG	111	Expository Writing (or ENG 110)	3
		Social/Behavioral Science Elective	3
Fourth Semester (Fall)			
BIO	271	Pathophysiology	3
MTH	125	Ethics of Massage	2
MTH	210	Adv Skills of Massage	8
MTH	221	Clinical Supplement II	2
Fifth Semester (Spring)			
COE	111	Co-Op Work Experience I	1
MTH	220	Outcome-Based Massage	7
		Humanities/Fine Arts Elective	3
Total Credit Hours Required			**73**

Therapeutic Massage Diploma (D45750)

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

First Semester (Fall)			**Credits**
ACA	115	Success & Study Skills	1
BIO	168	Anatomy and Physiology I	4
MTH	110	Fundamentals of Massage	10
MTH	125	Ethics of Massage	2
PSY	150	General Psychology	3
Second Semester (Spring)			
BIO	169	Anatomy and Physiology II	4
BUS	280	REAL Small Business	4
MTH	120	Ther Massage Applications	10
MTH	121	Clinical Supplement I	1
Third Semester (Summer)			
CIS	113	Computer Basics	1
ENG	111	Expository Writing (or ENG 110)	3
Total Credit Hours Required			**43**

Therapeutic Massage Diploma (D45750) Evening Program

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

First Semester (Fall)			**Credits**
ACA	115	Success & Study Skills	1
BIO	168	Anatomy and Physiology I	4
MTH	110AB	Fundamentals of Massage	5
Second Semester (Spring)			
BIO	169	Anatomy and Physiology II	4
BUS	280	REAL Small Business	4
MTH	110BB	Fundamentals of Massage	5
Third Semester (Summer)			
CIS	113	Computer Basics	1
ENG	111	Expository Writing (or ENG 110)	3
PSY	150	General Psychology	3
Fourth Semester (Fall)			
MTH	120	Ther Massage Applications	10
Fifth Semester (Spring)			
MTH	121	Clinical Supplement I	1
MTH	125	Ethics of Massage	2
Total Credit Hours Required			**43**

Therapeutic Massage Diploma (D45750) Weekend Program

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

First Semester (Fall)			Credits
ACA	115	Success & Study Skills	1
BIO	168	Anatomy and Physiology I	4
MTH	110AB	Fundamentals of Massage	5
Second Semester (Spring)			
BIO	169	Anatomy and Physiology II	4
BUS	280	REAL Small Business	4
MTH	110BB	Fundamentals of Massage	5
Third Semester (Summer)			
CIS	113	Computer Basics	1
ENG	111	Expository Writing (or ENG 110)	3
PSY	150	General Psychology	3
Fourth Semester (Fall)			
MTH	120AB	Ther Massage Applications	5
MTH	125	Ethics of Massage	2
Fifth Semester (Spring)			
MTH	120BB	Ther Massage Applications	5
MTH	121	Clinical Supplement I	1
Total Credit Hours Required			**43**

Web Technologies

The Web Technologies curriculum prepares graduates for careers in the information technology arena using computers and mobile devices to disseminate and collect information via the Internet.

Course work in this program covers the terminology and use of computers, Internet-ready devices, servers, databases, programming languages, as well as Internet 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 Internet and mobile applications, websites, web services, and related areas of Internet technologies.

Web Technologies Associate in Applied Science (A25290)

Courses requiring a grade of "C" or better: ACA, CIS, CSC, CTS, DBA, GIS, NET, SGD, WEB

First Semester (Fall)			Credits
ACA	115	Success and Study Skills	1
CIS	110	Introduction to Computers	3
CIS	115	Intro to Programming and Logic	3
NET	110	Networking Concepts	3
WEB	110	Internet/Web Fundamentals	3
WEB	115	Web Markup and Scripting	3
Second Semester (Spring)			
DBA	110	Database Concepts	3
DBA	120	Database Programming I	3
WEB	111	Intro to Web Graphics	3
WEB	182	PHP Programming	3
WEB	210	Web Design	3
Third Semester (Summer)			
ENG	111	Expository Writing	3
MAT	115	Mathematical Models (or MAT 171)	3
		Social/Behavioral Science Elective	3
Fourth Semester (Fall)			
WEB	214	Social Media	3
WEB	215	Adv Markup and Scripting	3
WEB	225	Content Management Sys	3
WEB	250	Database Driven Websites	3
		Major Elective 1*	3
Fifth Semester (Spring)			
CTS	115	Info Sys Business Concepts	3
WEB	120	Introduction to Internet Multimedia	3
WEB	213	Internet Mkt & Analytics	3
WEB	289	Internet Technologies Project	3
		Major Elective 2*	3
Sixth Semester (Summer)			
ENG	114	Professional Research and Reporting	3
		Humanities/Fine Arts Elective	3
Total Credit Hours Required			**76**

*Major Elective 1: CSC 134, DBA 210, GIS 111, GIS 222, SGD 168, WEB 141, WEB 151

*Major Elective 2: COE 212, COE 215, CSC 151, GIS 232, GIS 262, SGD 268, WEB 125, WEB 186, WEB 251

Web Technologies Associate in Applied Science (A25290) – Evening Schedule

(Begins in even-numbered years only)

Courses requiring a grade of "C" or better: ACA, CIS, CSC, CTS, DBA, GIS, NET, SGD, WEB

First Semester (Fall)		**Credits**
ACA 115	First-Year Seminar	1
CIS 110	Introduction to Computers	3
CIS 115	Intro to Programming and Logic	3
Second Semester (Spring)		
DBA 110	Database Concepts	3
WEB 110	Internet/Web Fundamentals	3
WEB 115	Web Markup and Scripting	3
Third Semester (Summer)		
ENG 111	Expository Writing	3
MAT 115	Mathematical Models or (MAT 171)	3
Fourth Semester (Fall)		
WEB 111	Intro to Web Graphics	3
WEB 182	PHP Programming	3
WEB 210	Web Design	3
WEB 213	Internet Mkt & Analytics	3
Fifth Semester (Spring)		
DBA 120	Database Programming I	3
NET 110	Networking Concepts	3
WEB 214	Social Media	3
WEB 215	Adv Markup and Scripting	3
Sixth Semester (Summer)		
ENG 114	Professional Research and Reporting	3
	Humanities/Fine Arts Elective	3
Seventh Semester (Fall)		
WEB 120	Intro Internet Multimedia	3
WEB 225	Content Management Sys	3
WEB 250	Database Driven Websites	3
	Major Elective 1*	3
Eighth Semester (Spring)		
CTS 115	Info Sys Business Concepts	3
WEB 289	Internet Technologies Project	3
	Major Elective 2*	3
Ninth Semester (Summer)		
	Social/Behavioral Science Elective	3
Total Credit Hours Required		**76**

*Major Elective 1: CSC 134, DBA 210, GIS 111, GIS 222, SGD 168, WEB 141, WEB 151

*Major Elective 2: COE 212, COE 215, CSC 151, GIS 232, GIS 262, SGD 268, WEB 125, WEB 186, WEB 251

Web Technologies - Mobile Development Diploma (D25290)

The Mobile Development diploma prepares students for entry-level jobs in the mobile design and development industry. Students learn to incorporate graphics and media, principles of interface and user experience design, programming and technologies to create mobile and Internet-based projects. The program develops skills through practical application of current and emerging standards and technologies.

Graduates should qualify for employment as web/mobile designers and/or developers.

Courses requiring a grade of "C" or better: CIS, DBA, GIS, SGD, WEB

First Semester (Fall)		**Credits**
CIS 110	Introduction to Computers	3
CIS 115	Introduction to Programming and Logic	3
WEB 110	Internet/Web Fundamentals	3
WEB 111	Intro to Web Graphics	3
WEB 115	Web Markup and Scripting	3
Second Semester (Spring)		
DBA 110	Introduction to Databases	3
GIS 111	Introduction to GIS	3
SGD 168	Mobile SG Programming I	3
SGD 268	Mobile SG Programming II	3
WEB 125	Mobile Design	3
Third Semester (Summer)		
ENG 111	Expository Writing	3
MAT 115	Mathematical Models	3
Fourth Semester (Fall)		
GIS 262	GIS Programming Trends	3
WEB 141	Mobile Interface Design	3
WEB 151	Mobile Application Dev I	3
WEB 251	Mobile Application Dev II	3
Total Credit Hours Required		**48**

Mobile Development Diploma – Evening Schedule

(Begins in odd-numbered years only)

Courses requiring a grade of "C" or better: CIS, DBA, GIS, SGD, WEB

First Semester (Fall)		Credits
CIS 110	Introduction to Computers	3
CIS 115	Introduction to Programming and Logic	3
GIS 111	Introduction to GIS	3
WEB 110	Internet/Web Fundamentals	3
Second Semester (Spring)		
DBA 110	Introduction to Databases	3
DME 115	Graphic Design Tools I	3
WEB 115	Web Markup and Scripting	3
WEB 125	Mobile Design	3
Third Semester (Summer)		
ENG 111	Expository Writing	3
MAT 115	Mathematical Models	3
Fourth Semester (Fall)		
SGD 168	Mobile SG Programming I	3
SGD 268	Mobile SG Programming II	3
WEB 141	Mobile Interface Design	3
Fifth Semester (Spring)		
GIS 262	GIS Programming Trends	3
WEB 151	Mobile Application Dev I	3
WEB 251	Mobile Application Dev II	3
Total Credit Hours Required		**48**

Web Technologies – Web Designer Certificate (C25290L1)

The Web Designer certificate provides students with an essential set of courses that prepares them to design and create 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, Internet marketing, 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. If a student does not have prior computer proficiency, other course work might be required to meet course pre-requisites.

Successful applicants for this certificate must complete all courses listed below with at least a grade of C.

Major Requirements		Credits
WEB 110	Internet/Web Fundamentals	3
WEB 111	Intro to Web Graphics	3
WEB 115	Web Markup and Scripting	3
WEB 210	Web Design	3
WEB 213	Internet Mkt & Analytics	3
WEB 214	Social Media	3
Total Credit Hours Required		**18**

Web Technologies – Web Programmer Certificate (C25290L2)

The Web Programming certificate provides courses in the programming/database aspects of Internet-related technologies. Course work 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. If a student does not have prior computer proficiency, other course work might be required to meet course pre-requisites.

Successful applicants for this certificate must complete all courses listed below with at least a grade of C.

Major Requirements		Credits
CIS 115	Intro to Programming and Logic	3
DBA 120	Database Programming I	3
WEB 115	Web Markup and Scripting	3
WEB 182	PHP Programming	3
WEB 250	Database Driven Websites	3
	Major Electives*	3
Total Credit Hours Required		**18**

*Major Electives: CSC 151, WEB 186, WEB 215

Database Management Certificate (C25290L3)

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 course work might be required to meet course prerequisites.

Successful applicants for the certificate must complete all courses listed below with at least a grade of C.

Major Requirements		Credits
CIS 115	Intro to Programming and Logic	3
DBA 110	Database Concepts	3
DBA 120	Database Programming I	3
DBA 210	Database Administration	3
WEB 115	Web Markup and Scripting	3
WEB 182	PHP Programming	3
Total Credit Hours Required		**18**

Mobile Web Application Developer (C25290L4)

The Mobile Development Certificate provides students with an essential set of courses to enable them to create effective mobile web sites and applications. Students will learn essential skills for mobile application development and gain proficiency in the software tools necessary to create mobile web sites and applications. Courses cover multiple aspects of Internet and mobile-related technologies, including: programming languages and web markup, server-side technologies and tools, mobile web development, responsive design and application optimization for mobile devices.

This certificate is designed for students who have experience with computers and wish to acquire a credential that provides evidence of their proficiency in mobile development, or for web and/or graphic designers who wish to add mobile design and development to their skill-set. If a student does not have the prior proficiency, other course work might be required to meet course prerequisites.

Successful applicants for the certificate must complete all courses listed below with at least a grade of C.

Major Requirements		Credits
WEB 115	Web Markup and Scripting	3
CIS 115	Intro to Programming and Logic	3
WEB 125	Mobile Design	3
WEB 151	Mobile Application Dev I	3
WEB 251	Mobile Application Dev II	3
Total Credit Hours Required		**15**

Geospatial Database and Web Certificate (C25290L5)

The Geospatial Technology (GIS) Certificate: Database and Web 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; enterprise/multi-user database implementation and management; 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 technology skills.

Successful applicants for the certificate must complete all courses listed below with at least a grade of C.

Major Requirements		Credits
CIS 110	Introduction to Computers	3
DBA 110	Database Concepts	3
GIS 111	Introduction to GIS	3
GIS 222	Internet Mapping	3
GIS 232	Spatial Databases	3
WEB 115	Web Markup and Scripting	3
Total Credit Hours Required		**18**

Emergency Services

The Division of Emergency Services includes the following professional programs: Basic Law Enforcement, Criminal Justice Technology, Emergency Medical Science, and Fire Protection Technology. The Division offers training in both curriculum and continuing education. It offers a variety of academic credentials, including associate degrees, certificates, and diplomas. Many of the Division's curriculum courses are designed to meet licensure/certification requirements necessary for employment.

In addition to classroom and laboratory instruction, each program provides experiential learning through field/clinical experiences. These field/clinical experiences occur at emergency services sites in the community, including medical, law enforcement, and fire and rescue settings.

Applicants should become familiar with the selection criteria and application deadlines for the specific program. Persons interested in a public service career are advised that professional licensure, certification, employment, or admission to clinical/work experience sites may be denied to anyone who has been convicted of a felony or other crime involving moral turpitude.

A.A.S. Degrees Conferred
Criminal Justice Technology
Emergency Medical Science
Fire Protection Technology

Certificates Awarded
Basic Law Enforcement Training
Courts and the Law
Criminal Investigations and Crime Scenes
Criminal Justice Administration & Management
Criminal Justice & Special Populations
Essential Police Operations
Fire Protection Technology
System of Criminal Justice

Basic Law Enforcement Training

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

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

Students must successfully complete and pass all units of study which include the certification examination by the North Carolina Criminal Justice Education and Training Standards Commission and the North Carolina Sheriffs' Education and Training Standards Commission to receive a certificate.

Specific Requirements

1. General college admission requirements.
2. Individuals must meet the Minimum Standard for Employment Criteria outlined in North Carolina Code Book - General Statute 17-A and Title-12, Chapter 9, North Carolina Administrative Code.
3. Individuals must be sponsored by a North Carolina law enforcement agency. The letter of sponsorship must:
   a. Be signed by the agency head; i.e., Chief or Sheriff.
   b. Include a statement of sponsorship that certifies that the applicant meets the standards for certification as stated in number two above.
   c. State that a background investigation was conducted.
4. Individuals must submit their sponsorship letter and college application to the School Director at least 15 days prior to the courses' scheduled start date. Applicants are accepted on a first-come, first-served basis. Priority will be given to full-time employees of law enforcement agencies.
5. Individuals must provide the School Director with a certified criminal record check for local and state records for the time period since the trainee became 16 years of age 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.
7. Prior to admission each student must achieve a reading score of at least the tenth grade level. This testing can be done AFTER submitting an application for enrollment. A student's placement test will be scheduled by the School Director after all paperwork has been turned in.

Basic Law Enforcement Training Certificate Program (C55120)

Major Requirements			**Credits**
CJC	100	Basic Law Enforcement Training	19
Total Credit Hours Required			**19**

Criminal Justice Technology

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

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

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

Criminal Justice Technology Associate in Applied Science Degree (A55180)

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

First Semester (Fall)			**Credits**
ACA	115	Success and Study Skills	1
CIS	110	Introduction to Computers	3
CJC	111	Introduction to Criminal Justice	3
CJC	113	Juvenile Justice	3
CJC	231	Constitutional Law	3
ENG	111	Expository Writing	3
Second Semester (Spring)			
CJC	112	Criminology	3
CJC	131	Criminal Law	3
		Major Electives (Choose 2)*	6
HUM	115	Critical Thinking	3
PSY	150	General Psychology	3
Third Semester (Fall)			
CJC	221	Investigative Principles	4
		Major Electives (Choose 2)*	6
ENG	114	Professional Research & Reporting	3
SOC	225	Social Diversity	3
		(or PSY 281, PSY 237 or SOC 210)	
Fourth Semester (Spring)			
CJC	212	Ethics and Community Relations	3
CJC	255	Issues in Criminal Justice Application	3
MAT	115	Mathematical Models	3
		(or MAT 151, or MAT 161)	
SPA	120	Spanish for the Workplace	3
		(or SPA-110, SPA 111, COM 120, COM 231)	
		Major Electives	3
Total Credit Hours Required			**65**

*3 Credit Hour Electives: CJC 121, CJC 122, CJC 132, CJC 141, CJC 151, CJC 160, CJC 170, CJC 213, CJC 214, CJC 215, CJC 222, CJC 223, CJC 225, CJC 232, CCT 121, or CCT 231.

*2 Credit Hour Electives: CJC 114, CJC 120

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.

System of Criminal Justice Certificate (C55180L1)

This certificate program is intended to provide an overview of the components of the Criminal Justice system. Topics include a detailed look at the major procedural processes of the overall system, which includes the application of ethical and principled law enforcement, the responsibilities of courts and corrections, and the rights and protections of all persons served by this broad system.

Major Requirements			**Credits**
CJC	111	Introduction to Criminal Justice	3
CJC	112	Criminology	3
CJC	131	Criminal Law	3
CJC	212	Ethics and Community Relations	3
CJC	231	Constitutional Law	3
Total Credit Hours Required			**15**

Essential Police Operations Certificate (C55180L2)

This certificate program is intended to provide overview and practical look at the field of law enforcement, including its history and current trends, current and traditional operations, along with practices that failed, applied technology, training and career development. Philosophical orientations influencing departments are also examined, including community policing, professional ethics and community relations, investigative trends and relevant constitutional law protections.

Major Requirements			Credits
CJC	121	Law Enforcement Operations	3
CJC	122	Community Policing	3
CJC	212	Ethics and Community Relations	3
CJC	221	Investigative Principles	4
CJC	231	Constitutional Law	3
Total Credit Hours Required			**16**

Criminal Justice Administration & Management Certificate (C55180L3)

This certificate program is intended to explore the technical aspects of the administration of law enforcement and considerations when addressing special problems, from inside and outside an agency or with regard to special populations or crime problems on the street or in the social realm. Topics include law enforcement operations, the management of critical incidents, professional ethics and community relations, and how departments are typically organized and managed.

Major Requirements			Credits
CJC	121	Law Enforcement Operations	3
CJC	170	Critical Incident Management	3
CJC	212	Ethics and Community Relations	3
CJC	215	Organization & Administration	3
CJC	231	Constitutional Law	3
Total Credit Hours Required			**15**

Courts and the Law Certificate (C55180L4)

This certificate program is intended to provide an overview of the operation of the court systems. Topics include criminal law complaints, enforcement, defenses and case adjudication. Broad areas of related civil ramifications and constitutional law protections and rights are examined along with special applications in juvenile justice, and the procedure of various courts.

Major Requirements			Credits
CJC	113	Juvenile Justice	3
CJC	131	Criminal Law	3
CJC	132	Court Procedures & Evidence	3
CJC	231	Constitutional Law	3
CJC	232	Civil Liability	3
Total Credit Hours Required			**15**

Criminal Investigations and Crime Scenes Certificate (C55180L5)

This certificate program is intended to provide a glimpse into the world of professional criminal investigator and forensic criminalist and the traditional practices and considerations of those endeavors. Topics include law enforcement typical investigative procedures, investigative traditions and trends, investigations by crime category, specific procedures such as crime scene photography or interviewing, and the controls of criminal and constitutional law.

Major Requirements			Credits
CJC	114	Investigative Photography (or CJC 120)	2
CJC	121	Law Enforcement Operations	3
CJC	221	Investigative Principles	4
CJC	222	Criminalistics	3
CJC	231	Constitutional Law	3
Total Credit Hours Required			**15**

Criminal Justice and Special Populations Certificate (C55180L6)

This certificate program is intended to provide insight into the considerations inherent in serving special populations within the Criminal Justice system. Topics explored include juvenile justice, substance abuse, victimology, organized crime, crisis intervention and those individuals afforded special protection under law.

Major Requirements			Credits
CJC	113	Juvenile Justice	3
CJC	213	Substance Abuse	3
CJC	214	Victimology	3
CJC	223	Organized Crime	3
CJC	225	Crisis Intervention	3
Total Credit Hours Required			**15**

Emergency Medical Science

This curriculum is designed to prepare graduates to enter the workforce as paramedics. Additionally, the program can provide an Associate in Applied Science (A.A.S.) 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. Complete the TEAS exam. Exam score will determine placement in program*.
   d. High School transcript or GED scores on file with admissions office.
   e. Official transcript of any prior college credit on file with admissions office.
2. Must be 18 years of age by 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 will be required prior to admission to clinical sites.

*Some Allied Health programs are selective due to the high volume of applicants and the limited number of students who can be enrolled in the programs. These selective programs have specific application periods, separate program applications and differing eligibility requirements.

Emergency Medical Science Associate in Applied Science Degree (A45340)

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

First Semester (Fall)			Credits
ACA	115	Success and Study Skills	1
BIO	168	Anatomy and Physiology I	4
CIS	111	Basic PC Literacy (or CIS 110)	2
EMS	110	EMT-Basic	7
EMS	111	Prehospital Environment	3
EMS	150	Emergency Vehicles and EMS Comm	2
Second Semester (Spring)			
BIO	169	Anatomy and Physiology II	4
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
ENG	111	Expository Writing	3
Third Semester (Summer)			
EMS	210	Advanced Patient Assessment	2
EMS	220	Cardiology	4
EMS	221	Clinical Practicum II	3
Fourth Semester (Fall)			
EMS	140	Rescue Scene Management	2
EMS	140A	Rescue Scene Skills Lab	1
EMS	231	Clinical Practicum III	3
EMS	250	Advanced Medical Emergencies	3
EMS	260	Advanced Trauma Emergencies	2
ENG	114	Professional Research and Reporting	3

SOC	225	Social Diversity	3

Fifth Semester

EMS	230	Pharmacology II for EMS	2
EMS	240	Special Needs Patients	2
EMS	241	Clinical Practicum IV	3
EMS	270	Life Span Emergencies	3
EMS	285	EMS Capstone	2
PHI	240	Introduction to Ethics	3

Total Credit Hours Required **76**

Emergency Medical Science Bridge Program (A45340BR)

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.

Specific Requirements

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

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)

First Semester (Fall)			**Credits**
BIO	168	Anatomy and Physiology I	4
CIS	111	Basic PC Literacy (or CIS 110)	2
EMS	140	Rescue Scene Management	2
EMS	140A	Rescue Skills Lab	1
EMS	150	Emergency Vehicles and EMS Communication	2
ENG	111	Expository Writing	3

Second Semester (Spring)

BIO	169	Anatomy and Physiology II	4
EMS	230	Pharmacology II For EMS	2
EMS	280	EMS Bridge Course	3
EMS	285	EMS Capstone	2

Third Semester (Summer)

ENG	114	Professional Research & Reporting	3
PHI	240	Introduction to Ethics	3
SOC	225	Social Diversity	3

Total Credit Hours Required **34**

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.

Course work 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: ACA, FIP

First Semester (Fall)			Credits
ACA	115	Success and Study Skills	1
CIS	110	Introduction to Computers	3
ENG	111	Expository Writing	3
FIP	120	Introduction to Fire Protection	3
FIP	140	Industrial Fire Protection	3
Second Semester (Spring)			
ENG	114	Professional Research and Reporting	3
FIP	124	Fire Prevention and Public Education	3
FIP	128	Detection and Investigation	3
MAT	115	Mathematical Models	3
Third Semester (Fall)			
FIP	230	Chemistry of Hazardous Materials I	5
FIP	132	Building Construction	3
Fourth Semester (Spring)			
FIP	152	Fire Protection Law	3
FIP	220	Fire Fighting Strategies	3
FIP	136	Inspections and Codes	3
FIP	232	Hydraulics and Water Distribution	3
COM	231	Public Speaking	3
Fifth Semester (Fall)			
FIP	224	Fire Instructor I and II	4
FIP	240	Fire Service Supervision	3
PSY	150	General Psychology	3
FIP	236	Emergency Management	3
Sixth Semester (Spring)			
FIP	228	Local Government Finance	3
FIP	260	Fire Protection Planning	3
FIP	276	Managing Fire Services	3
		Humanities/Fine Arts Elective	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**

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
Computer-Aided Drafting Technology
Computer Engineering Technology
Computer-Integrated Machining Technology
Construction Management Technology
Diesel and Heavy Equipment Technology
Electrical Systems Technology
Electronics Engineering Technology
Industrial Systems Technology - Biogas Option
Industrial Systems Technology - Industrial Maintenance Option
Mechanical Engineering Technology
Sustainability Technologies
Welding Technology

Diplomas Awarded

Air Conditioning, Heating, and Refrigeration Technology
Automotive Systems Technology
Construction Management - Building Construction Science
Diesel and Heavy Equipment Technology
Electrical Systems Technology
Industrial Systems Technology
Computer-Integrated Machining Technology
Welding Technology

Certificates

Air Conditioning, Heating and Refrigeration Technology - Basic
Air Conditioning, Heating and Refrigeration Technology - Intermediate
Automotive Systems Technology - Certificate I
Automotive Systems Technology - Certificate II
Automotive Systems Technology - Certificate III
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
Computer-Integrated Machining Technology - Basic
Computer-Integrated Machining Technology - CNC Programming
Computer-Integrated Machining Technology - Advanced CNC Programming
Computer-Integrated Machining Technology - Fundamentals of Metals
Construction Management Technology
Construction Management Technology - Basic Construction and Millwork
Diesel and Heavy Equipment Technology
Electrical Systems Technology - Electrical Wiring
Electrical Systems Technology - Instrumentation & Control
Electrical Systems Technology - Building Automation & Controls
Industrial Systems Technology - Basic Maintenance
Industrial Systems Technology - Metal Fabrication
Mechanical Engineering Technology - Automation & Robotics
Mechanical Engineering Technology - Plastic Injection Molding
Mechanical Engineering Technology - Mechanical Drafting
Welding Technology - Basic Welding I

Air Conditioning, Heating and Refrigeration Technology

The Air Conditioning, Heating, and Refrigeration Technology curriculum provides the basic knowledge to develop skills necessary to work with residential and light commercial systems.

Topics include mechanical refrigeration, heating and cooling theory, electricity, controls, and safety. The diploma program covers air conditioning, furnaces, heat pumps, tools and instruments.

Diploma graduates will be able to assist in the startup, preventive maintenance, service, repair, and/or installation of residential and light commercial systems.

Note: Certificates described individually below.

Air Conditioning, Heating and Refrigeration Technology Diploma (D35100)

Courses requiring a grade of "C" or better: AHR and ELC

First Semester (Fall)		**Credits**
AHR 111	Introduction to Electricity	3
AHR 112	Heating Technology	4
AHR 130	HVAC Controls	3
AHR 170	Heating Lab	1
ELC 132	Electrical Drawings	2
PHY 121	Applied Physics	4
	(or a MAT equivalent)	
WLD 113	Soldering and Brazing	2
Second Semester (Spring)		
AHR 110	Introduction to Refrigeration	5
AHR 113	Comfort Cooling	4
AHR 114	Heat Pump Technology	4
AHR 172	Heat Pump Lab	1
AHR 213	HVACR Building Code	2
	(or AHR 211 or AHR 212)	
COM 120	Introduction to Interpersonal Communication	3
	(or COM 231 or ENG 110 or ENG 111)	
Third Semester (Summer)		
AHR 160	Refrigerant Certification	1
Total Credit Hours Required		**39**

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

Courses requiring a grade of "C" or better: AHR, and ELC

First Semester (Fall)		**Credits**
AHR 111	Introduction to Electricity	3
AHR 112	Heating Technology	4
Second Semester (Spring)		
AHR 130	HVAC Controls	3
AHR 170	Heating Lab	1
ELC 132	Electrical Drawings	2
WLD 113	Soldering and Brazing	2
Third Semester (Fall)		
AHR 110	Introduction to Refrigeration	5
AHR 213	HVACR Building Code	2
	(or AHR 211 or AHR 212)	
COM 120	Intro to Interpersonal Communication	3
	(or COM 231 or ENG 110 or ENG 111)	
Fourth Semester (Spring)		
AHR 113	Comfort Cooling	4
PHY 121	Applied Physics	4
	(or a MAT equivalent)	
Fifth Semester (Summer)		
AHR 160	Refrigerant Certification	1
Sixth Semester (Fall)		
AHR 114	Heat Pump Technology	4
AHR 172	Heat Pump Lab	1
Total Credit Hours Required		**39**

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

The Basic Air Conditioning and Heating certificate program teaches the student 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 Technology	4
AHR 160	Refrigerant Certification	1
AHR 170	Heating Lab (or AHR 120)	1
AHR 213	HVACR Building Code	2
ELC 132	Electrical Drawings	2
Total Credit Hours Required		**18**

Air Conditioning, Heating and Refrigeration Technology Intermediate Certificate (C35100L2)

The Intermediate Air Conditioning and Heating certificate program teaches students 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 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	Comfort Cooling	4
AHR 114	Heat Pump Technology	4
AHR 130	HVAC Controls	3
AHR 160	Refrigerant Certification	1
AHR 172	Heat Pump Lab	1
AHR 211	Residential System Design (or AHR 212)	3
WLD 113	Soldering and Brazing	2
Total Credit Hours Required		**18**

Automotive Systems Technology

A program that prepares individuals to apply technical knowledge and skills to repair, service, and maintain all types of automobiles. Includes instruction in brake systems, electrical systems, engine performance, engine repair, suspension and steering, automatic and manual transmissions and drive trains, and heating and air condition systems

National Automotive Technicians Education Foundation 101 Blue Seal Drive, SE, Suite 101, Leesburg, VA 20175; Phone: 703-669-6650; Fax: 703-669-6125
http://www.natef.org/certified.cfm

Automotive Systems Technology Associate in Applied Science Degree (A60160)

Courses requiring a grade of "C" or better: ACA, AUT, COE, TRN

First Semester (Fall)		Credits
ACA 115	Success and Study Skills	1
AUT 116	Engine Repair	3
AUT 116A	Engine Repair Lab	1
PHY 121	Applied Physics 1	4
	(or PHY 110/110A, or CHM 121/121A)	
TRN 110	Intro to Transport Tech	2
TRN 120	Basic Transp Electricity	5
Second Semester (Spring)		
AUT 151	Brake Systems	3
AUT 151A	Brake Systems Lab	1
AUT 181	Engine Performance I	3
AUT 281	Advanced Engine Performance	3
ENG 110	Freshman Composition (or ENG 111)	3
TRN 145	ADV Transp Electronics	3
Third Semester (Summer)		
AUT 141	Suspension and Steering Systems	3
AUT 141A	Suspension and Steering Systems Lab	1
TRN 130	Intro to Sustainable Transp	3
TRN 140	Transp Climate Control	2
TRN 140A	Transp Climate Control Lab	2
Fourth Semester (Fall)		
AUT 231	Manual Trans/Axles/D. Trains	3
AUT 231A	Manual Trans/Axles/D. Trains Lab	1
CIS 110	Introduction to Computers	3
COE 112	Co-op Work Experience I	2
	Communications Elective*	3

Fifth Semester (Spring)

AUT 221	Automatic Transmissions/Transaxles	3
AUT 221A	Automatic Transmissions/Transaxles Lab	1
COE 122	Co-op Work Experience II	2
	Social/Behavioral Science Elective	3
	Humanities/Fine Arts Elective	3

Total Credit Hours Required **67**

*Communications Elective: COM 120, COM 231, or ENG 114

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

Courses requiring a grade of "C" or better: ACA, AUT, COE, TRN

First Semester (Fall) **Credits**

ACA 115	Success and Study Skills	1
ENG 110	Freshman Composition (or ENG 111)	3
TRN 110	Intro to Transport Tech	2
TRN 120	Basic Transp Electricity	5

Second Semester (Spring)

AUT 116	Engine Repair	3
AUT 116A	Engine Repair Lab	1
AUT 181	Engine Performance I	3
TRN 145	ADV Transp Electronics	3

Third Semester (Summer)

AUT 281	Advanced Engine Performance	3
TRN 140	Transp Climate Control	2
TRN 140A	Transp Climate Control Lab	2

Fourth Semester (Fall)

AUT 141	Suspension and Steering Systems	3
AUT 141A	Suspension and Steering Systems Lab	1
AUT 151	Brake Systems	3
AUT 151A	Brake Systems Lab	1

Fifth Semester (Spring)

PHY 121	Applied Physics 1	4
	(or MAT 121, PHY 110/110A, or CHM 121/121A)	
TRN 130	Intro to Sustainable Transp	3

Sixth Semester (Fall)

AUT 231	Manual Trans/Axles/D. Trains	3
AUT 231A	Manual Trans/Axles/D. Trains Lab	1
CIS 110	Introduction to Computers	3
COE 112	Co-op Work Experience I	2
	Communications Elective*	3

Seventh Semester (Spring)

AUT 221	Automatic Transmissions	3
AUT 221A	Automatic Transmissions Lab	1
COE 122	Co-op Work Experience II	2
	Social/Behavioral Science Elective	3
	Humanities/Fine Arts Elective	3

Total Credit Hours Required **67**

*Communications Elective: COM 120, COM 231, or ENG114

Automotive Systems Technology Diploma (D60160)

Courses requiring a grade of "C" or better: ACA, AUT

First Semester (Fall) **Credits**

ACA 115	Success and Study Skills	1
AUT 116	Engine Repair	3
AUT 116A	Engine Repair Lab	1
PHY 121	Applied Physics 1	4
	(or MAT 121, PHY 110/110A, or CHM 121/121A)	
TRN 110	Intro to Transport Tech	2
TRN 120	Basic Transp Electricity	5

Second Semester (Spring)

AUT 151	Brake Systems	3
AUT 151A	Brake Systems Lab	1
AUT 181	Engine Performance I	3
AUT 281	Advanced Engine Performance	3
ENG 110	Freshman Composition (or ENG 111)	3
TRN 145	ADV Transp Electronics	3

Third Semester (Summer)

AUT 141	Suspension and Steering Systems	3
AUT 141A	Suspension and Steering Systems Lab	1
TRN 130	Intro to Sustainable Transp	3
TRN 140	Transp Climate Control	2
TRN 140A	Transp Climate Control Lab	2

Total Credit Hours Required **43**

Automotive Systems Technology Diploma (D60160) - Evening

Courses requiring a grade of "C" or better: ACA, AUT

First Semester (Fall)			Credits
ACA	115	Success and Study Skills	1
ENG	110	Freshman Composition (or ENG 111)	3
TRN	110	Intro to Transport Tech	2
TRN	120	Basic Transp Electricity	5

Second Semester (Spring)			
AUT	116	Engine Repair	3
AUT	116A	Engine Repair Lab	1
AUT	181	Engine Performance I	3
TRN	145	ADV Transp Electronics	3

Third Semester (Summer)			
AUT	281	Advanced Engine Performance	3
TRN	140	Transp Climate Control	2
TRN	140A	Transp Climate Control Lab	2

Fourth Semester (Fall)			
AUT	141	Suspension and Steering Systems	3
AUT	141A	Suspension and Steering Systems Lab	1
AUT	151	Brake Systems	3
AUT	151A	Brake Systems Lab	1

Fifth Semester (Spring)			
PHY	121	Applied Physics 1	4
		(or MAT 121, PHY 110/110A, or CHM 121/121A)	
TRN	130	Intro to Sustainable Transp	3

Total Credit Hours Required	**43**

Automotive Systems Technology - Certificate I (C60160L6)

First Semester (Fall)			Credits
AUT	116	Engine Repair	3
AUT	116A	Engine Repair Lab	1
AUT	151	Brake Systems	3
AUT	151A	Brake Systems Lab	1
TRN	110	Intro to Transport Tech	2
TRN	120	Basic Transp Electricity	5

Total Credit Hours Required	**15**

Automotive Systems Technology - Certificate II (C60160L7)

Second Semester (Spring)			
AUT	181	Engine Performance I	3
AUT	281	Advanced Engine Performance	3
TRN	130	Intro to Sustainable Transp	3
TRN	145	ADV Transp Electronics	3

Total Credit Hours Required	**12**

Automotive Systems Technology - Certificate III (C60160L8)

AUT	141	Suspension and Steering Systems	3
AUT	141A	Suspension and Steering Sys. Lab	1
AUT	221	Automatic Transmissions/Transaxles	3
AUT	221A	Automatic Transmissions/Transaxles Lab	1
AUT	231	Manual Trans/Axles/D. Trains	3
AUT	231A	Manual Trans/Axles/D. Trains Lab	1

Total Credit Hours Required	**12**

Computer-Aided Drafting Technology

This curriculum prepares the students to apply technical skills and advanced computer software and hardware to develop plans and related documentation, and manage the hardware and software of a CAD system. Includes instruction in architectural drafting, computer-assisted drafting and design (CADD), creating and managing two and three-dimensional models, linking CAD documents to other software applications, and operating systems. Graduates should qualify for CAD jobs in architectural and engineering consulting firms and industrial design businesses.

Please note: The CAD program emphasizes sustainable design practices.

Computer-Aided Drafting Technology Associate in Applied Science Degree (A50150)

Courses requiring a grade of "C" or better: ACA, ARC, ART, BPR, CET, CIS, CIV, CST, DFT, EGR, GIS, LAR, MEC, SRV

First Semester (Fall)			**Credits**
ACA	115	Success and Study Skills (or EGR 110)	1
ARC	111	Intro to Architecture Technology	3
BPR	111	Blueprint Reading	2
DFT	151	CAD I	3
EGR	125	Application Software for Technicians (or CIS 110 or CIS 111)	2
SST	110	Intro to Sustainability	3

Second Semester (Spring)			
ARC	112	Construction Materials and Methods	4
ARC	113	Residential Architecture Technology I	3
DFT	152	CAD II	3
DFT	154	Intro to Solid Modeling	3
MAT	121	Algebra/Trigonometry I (or MAT 171/171A)	3

Third Semester (Summer)			
COM	231	Public Speaking (or ENG 114)	3
ENG	111	Expository Writing (or ENG 110)	3
		Humanities/Fine Arts Elective	3
		Social/Behavioral Science Elective	3

Fourth Semester (Fall)			
ARC	230	Environmental Systems	4
CST	211	Construction Surveying (or SRV 110)	3
DFT	153	CAD III	3
DFT	253	CAD Data Management	3
LAR	210	Principles of Landscape Architecture	2
		Major Elective*	3

Fifth Semester (Spring)			
CET	111	Computer Upgrade/Repair I	3
CIV	125	Civil/Surveying CAD	3
DFT	259	CAD Project	3
MEC	110	Introduction to CAD/CAM	2
Total Credit Hours Required			**71**

*Major Electives: ARC 131, ARC 210, ARC 240, ARC 261, ART 121, ART 171, BPR 121, CET 211, 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	3
DFT	154	Intro to Solid Modeling (or CIV 125 or DFT 253)	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
ARC	112	Construction Materials and Methods	4
ARC	113	Residential Architecture Technology	3
DFT	151	CAD I	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
DFT	151	CAD I	3
EGR	125	Application Software for Technicians (or CIS-110 or CIS-111)	2
LAR	210	Principles of Landscape Architecture	2
SST	110	Intro to Sustainability	3
CIV	125	Civil/Surveying CAD	3
Total Credit Hours Required			**13**

Computer Engineering Technology

A course of study that prepares the students to use basic engineering principles and technical skills for installing, servicing, and maintaining computers, peripherals, networks, and microprocessor and computer controlled equipment. Includes instruction in mathematics, computer electronics and programming, prototype development and testing, systems installation and testing, solid state and microminiature circuitry, peripheral equipment, and report preparation. Graduates should qualify for employment opportunities in electronics technology, computer service, computer networks, server maintenance, programming, and other areas requiring knowledge of electronic 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

First Semester (Fall)			Credits
CET	111	Computer Upgrade/Repair I	3
EGR	110	Introduction to Engineering	2
ELC	138	DC Circuit Analysis	4
ENG	111	Expository Writing	3
MAT	121	Algebra/Trigonometry I (or MAT 171/171A**)	3

Second Semester (Spring)			
CET	211	Computer Upgrade/Repair II	3
ELC	127	Software for Technicians	2
ELC	139	AC Circuit Analysis	4
MAT	122	Algebra/Trigonometry II (or MAT 172/172A**)	3
		Humanities/Fine Arts Elective	3

Third Semester (Summer)			
ELC	117	Motors and Controls	4
ELN	237	Local Area Networks	3
ELN	238	Advanced LANs	3
PHY	131	Physics-Mechanics (or PHY 151**)	4

Fourth Semester (Fall)			
CSC	143	Object-Oriented Programming (or CET 161)	3
ELC	128	Introduction to PLC	3
ELN	133	Digital Electronics	4
ELN	131	Analog Electronics I	4
		Social/Behavioral Science Elective	3

Fifth Semester (Spring)			
CET	212	Integrated Manufacturing Systems	2
ELN	232	Introduction to Microprocessors	4
ENG	114	Professional Research and Reporting	3
ELN	154	Introduction to Data Communications (or ELN 234)	3
		Major Electives*	3
Total Credit Hours Required			**76**

*Major Electives: CET 125, CHM 135, COE 112/COE 115, EGR 285, ELC 213, ELC 228, ELN 133A, ELN 150, MAT 151/MAT 151A, MAT 271.

**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**

Computer-Integrated Machining Technology

The Computer-Integrated Machining curriculum prepares students with the analytical, creative and innovative skills necessary to take a production idea from an initial concept through design, development and production, resulting in a finished product.

Coursework may include manual machining, computer applications, engineering design, computer-aided drafting (CAD), computer-aided machining (CAM), blueprint interpretation, advanced computerized numeric control (CNC) equipment, basic and advanced machining operations, precision measurement and high-speed multi-axis machining.

Graduates should qualify for employment as machining technicians in high-tech manufacturing, rapid-prototyping and rapid-manufacturing industries, specialty machine shops, fabrication industries, and high-tech or emerging industries such as aerospace, aviation, medical, and renewable energy, and to sit for machining certification examinations.

Computer-Integrated Machining Technology Associate in Applied Science Degree (A50210)

Courses requiring a grade of "C" or better: ACA, BPR, MAC, MEC, WLD

First Semester (Fall)			Credits
ACA	115	Success and Study Skills	1
BPR	111	Blueprint Reading I	2
MAC	111	Machining Technology I	6
MAC	121	Introduction to CNC	2
MAC	151	Machining Calculations	2
		Social/Behavioral Science Elective	3
Second Semester (Spring)			
BPR	121	Blueprint Reading: Mechanical	2
ENG	110	Freshman Composition (or ENG 111)	3
MAC	112	Machining Technology II	6
MAC	122	CNC Turning	2
MAC	124	CNC Milling	2
MAC	152	Advanced Machining Calculations	2
Third Semester (Summer)			
COM	231	Public Speaking (or COM 120)	3
Fourth Semester (Fall)			
MAC	226	CNC EDM Machining	2
MAC	241	Jigs and Fixtures I	4
MEC	231	CAM I	3
MAT	121	Algebra/Trigonometry (or PHY 121)	3
		Humanities/Fine Arts Elective	3
Fifth Semester (Spring)			
MAC	222	Advanced CNC Turning	2
MAC	224	Advanced CNC Milling	2
MAC	245	Mold Construction I	4
MAC	247	Production Tooling	2
MEC	232	CAM II	3
		Major Elective*	2
Total Credit Hours Required			**66**

*Major Electives: WLD 112, MAC 234, MAC 228, MAC 231, MAC 232

Computer-Integrated Machining Technology - Diploma (D50210)

Courses requiring a grade of "C" or better: ACA, BPR, MAC

First Semester (Fall)		Credits
ACA 115	Success and Study Skills	1
BPR 111	Blueprint Reading	2
MAC 111	Machining Technology	6
MAC 121	Introduction to CNC	2
MAC 151	Machining Calculations	2
WLD 112	Basic Welding Processes	2
Second Semester (Spring)		
BPR 121	Blueprint Reading: Mechanical	2
MAC 152	Advanced Machining Calculations	2
ENG 110	Freshman Composition (or ENG 111)	3
MAC 112	Machining Technology II	6
MAC 122	CNC Turning	2
MAC 124	CNC Milling	2
MAC 247	Production Tooling	2
Third Semester (Summer)		
COM 231	Public Speaking	3
	Social/Behavioral Science Elective	3
Total Credit Hours Required		**40**

Computer-Integrated Machining Technology Basic Machining Certificate (C50210L1)

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.

Students who complete the program 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 Computer-Integrated Machining Technology Associate Degree curriculum.

Major Requirements		Credits
BPR 111	Blueprint Reading	2
MAC 121	Introduction to CNC	2
MAC 124	CNC Milling	2
MAC 111	Machining Technology	6
Total Credit Hours Required		**12**

Computer-Integrated Machining Technology CNC Programming Certificate (C50210L2)

The purpose of this certificate program is to introduce basic CAD/CAM programming skills to individuals who want to learn 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	2
BPR 121	Blueprint Reading: Mechanical	2
MAC 121	Introduction to CNC	2
MAC 151	Machining Calculations	2
MAC 122	CNC Turning	2
MAC 124	CNC Milling	2
Total Credit Hours Required		**12**

Computer-Integrated Machining Technology Advanced CNC Programming Certificate (C50210L3)

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
BPR 121	Blueprint Reading: Mechanical	2
MAC 228	Advanced CNC Processes	3
MAC 231	CAM: CNC Turning	3
MAC 232	CAM: CNC Milling	3
MAC 234	Adv Multi-Axis Machining	3
Total Credit Hours Required		**14**

Computer-Integrated Machining Technology Fundamentals of Metals Certificate (C50210L4)

The purpose of this certificate program is to introduce students to metals manufacturing.

Major Requirements		Credits
BPR 111	Blueprint Reading	2
BPR 121	Blueprint Reading: Mechanical	2
MAC 111	Machining Technology I	6
MAC 112	Machining Technology II	6
Total Credit Hours Required		**16**

Construction Management Technology

These curriculums are designed to prepare individuals to apply technical knowledge and skills to the fields of architecture, construction, construction management, and other associated professions.

Course work includes instruction in sustainable building and design, print reading, building codes, estimating, construction materials and methods, and other topics related to design and construction occupations.

Graduates of this pathway should qualify for entry-level jobs in architectural, engineering, construction and trades professions as well as positions in industry and government.

A program that prepares individuals to supervise, manage, and inspect construction sites, buildings, and associated facilities. Includes instruction in site safety, personnel supervision, labor relations, diversity training, construction documentation, scheduling, resource and cost control, bid strategies, rework prevention, construction insurance and bonding, accident management and investigation, applicable law and regulations, and communication skills.

Graduates will qualify for entry-level positions in the field of construction management.

CMT students are eligible for entry-level management positions in traditional commercial and residential construction projects as well as non-traditional construction projects such as large wind turbine and photovoltaic solar projects.

Construction Management Technology Associate in Applied Science (A35190)

Courses requiring a grade of "C" or better: ACA, ALT, ARC, BPR, CIS, CIV, CMT, COE, ELC, EGR, SPA, SST, CAR

First Semester (Fall)		**Credits**
EGR 110	Intro. to Engineering Tech. (or ACA 115)	2
CIS 111	Basic PC Literacy (or EGR 125)	2
BPR 130	Blueprint Reading/Construction	3
ARC 112	Construction Materials and Methods	4
	Major Electives*	8
Second Semester (Spring)		
CST 241	Planning/Estimating I	3
ARC 131	Building Codes	3
ENG 110	Freshman Composition (or ENG 111)	3
SST 140	Green Building Concepts	3
	Other Required Elective*	3
	Major Electives*	4
Third Semester (Summer)		
COM120	Intro to Interpersonal Communications (or COM 231 or ENG 114)	3
	Social/Behavioral Science Elective	3
	Humanities/Fine Arts Elective	3
Fourth Semester (Fall)		
ACC 120	Principles of Financial Accounting	4
MAT 121	Algebra/Trig. I (or PHY 110/110A or PHY121)	3
CMT 210	Professional Construction Supervision**	3
CMT 212	Total Safety Performance**	3
Fifth Semester (Spring)		
CMT 214	Planning & Scheduling**	3
CMT 216	Cost & Productivity**	3
CMT 218	Human Relation Issues**	3
COE 111	Co-op Work Experience	1
SPA 120	Spanish for the Workplace	3
Total Credit Hours Required		**73**

*Major Electives: Select at least 12 semester hours credit from the following: ALT 120, ELC 113, CAB 119, ELC 111, SST 110, SST 120, CST 111, CST 112, CST 113, CST 244

*Other Required Elective**:** Select one of the following: CST 150, DFT 151, ELC 220

**CMT prefix classes are offered in the evenings only.

Construction Management Technology Associate in Applied Science – Evening Schedule (A35190)

Courses requiring a grade of "C" or better: ACA, ALT, ARC, BPR, CIS, CIV, CMT, COE, EGR, ELC, SPA, SST, CAR

First Semester (Fall)		**Credits**
EGR 110	Intro. to Engineering Tech. (or ACA 115)	2
CIS 111	Basic PC Literacy (or EGR 125)	2
	Major Electives*	4
Second Semester (Spring)		
SST 140	Green Building Concepts	3
	Other Required Electives*	3

Third Semester (Summer)

ENG 111	Expository Writing	3
	Social/Behavioral Science Elective	3

Fourth Semester (Fall)

BPR 130	Blueprint Reading/Construction	3
	Major Electives*	4

Fifth Semester (Spring)

ACC 120	Principles of Accounting I	4
	Major Electives*	4

Sixth Semester (Summer)

COM 120	Intro to Interpersonal Communications	3
	(or COM 120 or COM 231)	

Seventh Semester (Fall)

CMT 210	Professional Construction Supervision	3
CMT 212	Total Safety Performance	3
MAT 121	Algebra/Trig. I	3
	(or PHY 110/110A or PHY121)	

Eighth Semester (Spring)

CMT 214	Planning & Scheduling	3
CMT 216	Cost & Productivity	3
CMT 218	Human Relation Issues	3

Ninth Semester (Summer)

SPA 120	Spanish for the Workplace	3
	Humanities/Fine Arts Elective	3

Tenth Semester (Fall)

CST 241	Planning/Estimating I	3
ARC 112	Construction Materials and Methods	4

Eleventh Semester (Spring)

ARC 131	Building Codes	3
COE 111	Co-op Work Experience	1

Total Credit Hours Required **73**

*Major Electives: Select at least 12 semester hours credit from the following: ALT 120, ELC 113, CAB 119, DFT 119, ELC 111, SST 110, SST 120, CST 111, CST 112, CST 113, CST 244

*Other Required Elective: Select one of the following: CST 150, DFT 151, ELC 220

Construction Management - Building Construction Science Diploma (D35190)

Courses requiring a grade of "C" or better: ARC, BPR, CMT, CST , DFT and SST

First Semester (Fall)		**Credits**
ARC 112	Constr Matls & Methods	4
CIS 111	Basic PC Literacy (or EGR 125)	2
BPR 130	Blueprint Reading / Construction	3
CST 111	Construction I	4
CST 112	Construction II	4
CMT 210	Professional Construction Supervision*	3

Second Semester (Spring)

ARC 131	Building Codes	3
CST 113	Construction III	4
CST 244	Sustainable Bldg. Design	3
CST 241	Planning/ Estimating I	3
SST 120	Energy Use Analysis	3
SST 140	Green Building Concepts	3

Third Semester (Summer)

ENG 110	Freshman Composition	3
	(or ENG 111 or COM 120)	
MAT 121	Algebra/Trig I	3
	(or PHY 121 or PHY 110/110A)	

Total Credit Hours Required **45**

*CMT prefix classes are offered in the evenings only.

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.

Major Requirements		Credits
BPR 130	Blueprint Reading/Construction	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
Total Credit Hours Required		**18**

Construction Management Technology - Basic Construction & Millwork Certificate (C35190L2)

The Basic Construction and Cabinetry Certificate Is designed for those Individuals seeking basic skills for residential and light commercial carpentry and millwork.

BPR 130	Blueprint Reading/Construction	3
CST 111	Construction I	4
CST 112	Construction II	4
CAB 119	Cabinetry/ Millworking	7
Total Credit Hours Required		**18**

Diesel and Heavy Equipment Technology

A program that prepares individuals to apply technical knowledge and skills to repair, service, and maintain diesel engines in vehicles such as Heavy Duty Trucks over one ton classification, buses, ships, railroad locomotives, and equipment; as well as stationary diesel engines in electrical generators and related equipment.

Diesel and Heavy Equipment Technology Diploma (D60460)

Courses requiring a grade of "C" or better: ACA, HET, TRN

First Semester (Fall)		Credits
ACA 115	Success and Study Skills	1
HET 110	Diesel Engines	6
HET 125	Preventative Maintenance	2
MEC 111	Machine Processes I	3
PHY 121	Applied Physics I (or MAT 121)	4
TRN 110	Intro to Transport Tech	2

Second Semester (Spring)

ENG 110	Freshman Composition (or ENG 111)	3
HET 115	Electronic Engines	3
HET 119	Mechanical Transmissions	3
HYD 112	Hydraulics Medium/Heavy Duty	2
TRN 120	Basic Transp Electricity	5
TRN 120A	Basic Transp Electricity Lab	1
WLD 112	Basic Welding Processes	2

Third Semester (Summer)

CIS 110	Introduction to Computers	3
HET 231	Medium-Heavy Duty Brake Systems	2
HET 233	Suspension and Steering	4
TRN 140	Transp Climate Control	2
Total Credit Hours Required		**48**

Diesel and Heavy Equipment Technology Associate in Applied Science - Associate Degree Completion (A60460) (Evening Only Program)

To be taken after completion of Diploma (day) program

Fourth Semester (Fall)

COE 112	Cooperative Education	2
HET 114A	Powertrains	3
	Humanities/Fine Arts Elective	3

Fifth Semester (Spring)

HET 114B	Powertrains	2
COE 122	Cooperative Education	2
	Communications Elective*	3
	Social/Behavioral Science Elective	3
TRN 130	Intro to Sustainable Transp	3
Total Credit Hours Required		**69**

*Communications Elective: COM 120, COM 231, or ENG114

Diesel and Heavy Equipment Technology Certificate (C60460L1)

First Semester (Fall)			Credits
HET	110	Diesel Engines	6
HET	125	Preventative Maintenance	2
TRN	110	Intro to Transport Tech	2
Second Semester (Spring)			
TRN	120	Basic Transp Electricity	5
TRN	120A	Basic Transp Electricity Lab	1
Third Semester (Summer)			
HET	231	Med/Heavy Brake Systems (or HET 119)	2
Total Credit Hours Required			**18**

Electrical Systems 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 Systems Technology Associate in Applied Science Degree (A35130)

Courses requiring a grade of "C" or better: COE, EGR, ELC, ELN

First Semester (Fall)			Credits
EGR	110	Introduction to Engineering Technology I	2
ELC	112AB	DC/AC Electricity (or ELC 138)	3
ELC	113	Basic Wiring I	4
ENG	111	Expository Writing (or ENG 110)	3
MAT	121	Algebra/Trigonometry	3
Second Semester (Spring)			
ELC	127	Software for Technicians	2
ELC	112BB	DC/AC Electricity (or ELC 139)	2
ELC	115	Industrial Wiring	4
ELN	152	Fabrication Techniques	2
MAT	122	Algebra/Trigonometry II (or approved Natural Science/Mathematics Elective)	3
Third Semester (Summer)			
ELC	117	Motors and Controls	4
PHY	131	Physics-Mechanics (or PHY 151)	4
		Humanities/Fine Arts Elective	3
		Social/Behavioral Science Elective	3
Fourth Semester (Fall)			
ELC	128	Introduction to PLC	3
ELN	133	Digital Electronics	4
ELN	131	Analog Electronics I	4
ENG	114	Prof Research and Report Writing (or COM 120 or COM 231)	3
Fifth Semester (Spring)			
ELC	118	National Electrical Code	2
ELC	213	Instrumentation	4
ELC	228	PLC Applications	4
HYD	110	Hydraulics/Pneumatics	3
		Major Elective*	2
Total Credit Hours Required			**71**

*Major Elective: ELC 229, COE 112, ALT 120, SST 120, ELC 220

Electrical Systems Technology Associate in Applied Science Degree (A35130) – Evening Schedule

First Semester (Fall)			Credits
EGR	110	Intro to Engineering Technology	2
ELC	112	ABDC/AC Electricity (or ELC 138)	3
MAT	121	Algebra/Trigonometry	3
Second Semester (Spring)			
ELC	112	BBDC/AC Electricity (or ELC 139)	2
ELN	152	Fabrication Techniques	2
MAT	122	Algebra/Trigonometry II (or approved Natural Science/Mathematics Elective)	3
Third Semester (Summer)			
ENG	111	Expository Writing (or ENG 110)	3
PHY	131	Physics-Mechanics (or PHY 151)	4
Fourth Semester (Fall)			
ELC	127	Software for Technicians	2
ELC	113	Basic Wiring I	4
ELN	131	Analog Electronics I	4
Fifth Semester (Spring)			

ELC 115	Industrial Wiring	4
ELN 133	Digital Electronics	4
ELC 118	National Electrical Code	2

Sixth Semester (Summer)

	Humanities/Fine Arts Elective	3
	Social/Behavioral Science Elective	3

Seventh Semester (Fall)

ELC 117	Motors and Controls	4
ELC 128	Introduction to PLC	3
	Major Elective*	2

Eighth Semester (Spring)

ELC 213	Instrumentation	4
ELC 228	PLC Applications	4
HYD 110	Hydraulics/Pneumatics	3

Ninth Semester (Summer)

ENG 114	Prof Research and Report Writing	3
	(or COM 120 or COM 231)	

Total Credit Hours Required **71**

*Major Elective: ELC 229, COE 112, ALT 120, SST 120

Electrical Systems Technology Diploma (D35130)

Courses requiring a grade of "C" or better: EGR, ELC, ELN

First Semester (Fall) **Credits**

ELC 112	ABDC/AC Electricity (or ELC 138)	3
MAT 101	Algebra/Trigonometry (or MAT 121)	3

Second Semester (Spring)

ELC 112	BBDC/AC Electricity (or ELC 139)	2
ELN 152	Fabrication Techniques	2
ELC 127	Software for Technicians	2

Third Semester (Summer)

COM 120	Intro to Interpersonal Communications	3
	(or ENG 110 or ENG 111)	

Fourth Semester (Fall)

ELC 113	Basic Wiring I	4
ELC 117	Motors and Controls	4

Fifth Semester (Spring)

ELC 115	Industrial Wiring	4
ELC 128	Introduction to PLC	3
ELC 118	National Electrical Code	2
ELC 213	Instrumentation	4

Total Credit Hours Required **36**

Electrical Systems Technology Electrical Wiring Certificate (C35130L1)

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 Systems 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 Systems Technology Building Automation & Controls (C35130L3)

This advanced certificate is intended to 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
SST 120	Energy Use Analysis	3

Total Credit Hours Required **14**

Electronics Engineering Technology

A course of study that prepares the students to apply basic engineering principles and technical skills 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. Includes instruction in mathematics, basic electricity, solid-state fundamentals, digital concepts, and microprocessors or programmable logic controllers. Graduates should qualify for employment as electronics engineering technician, field service technician, instrumentation 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

First Semester (Fall)			Credits
CET	111	Computer Upgrade/Repair I	3
ELC	138	DC Circuit Analysis	4
EGR	110	Introduction to Engineering Tech	2
ENG	111	Expository Writing	3
MAT	121	Algebra/Trigonometry I (or MAT 171/171A**)	3
Second Semester (Spring)			
DFT	151	CAD I (or ELN 150)	3
ELC	127	Software for Technicians	2
ELC	139	AC Circuit Analysis	4
ELN	152	Fabrication Techniques	2
MAT	122	Algebra/Trigonometry II (or MAT 172/172A**)	3
Third Semester (Summer)			
ELC	117	Motors and Controls	4
PHY	131	Physics-Mechanics (or PHY 151**)	4
		Humanities/Fine Arts Elective	3
		Social/Behavioral Science Elective	3
Fourth Semester (Fall)			
ELC	128	Introduction to PLC	3
ELN	131	Analog Electronics I	4
ELN	133	Digital Electronics	4
ENG	114	Professional Research and Report Writing	3
Fifth Semester (Spring)			
ELN	232	Introduction to Microprocessors	4
ELN	234	Communication Systems	4
ELN	133A	Digital Electronics Lab	1
		Major Electives*	6
Total Credit Hours Required			**72**

*Major Elective: CET 125, CET 211, CET 212, CHM 135, EGR 285, ELC 133, ELC 213, ELC 228, ELC 229, 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.

Electronics Engineering Technology Associate in Applied Science Degree (A40200) - Evening Schedule

First Semester (Fall)			Credits
EGR	110	Introduction to Engineering Technology	2
ELC	138	DC Circuit Analysis	4
MAT	121	Algebra/Trigonometry (or MAT 171/171A**)	3
Second Semester (Spring)			
ELC	139	AC Circuit Analysis	4
ELN	152	Fabrication Techniques	2
MAT	122	Algebra/Trigonometry II (or MAT 172/172A**)	3
Third Semester (Summer)			
ENG	111	Expository Writing	3
PHY	131	Physics-Mechanics (or PHY 151**)	4
Fourth Semester (Fall)			
CET	111	Computer Upgrade/Repair I	3
ELC	127	Software for Technicians	2
ELN	131	Analog Electronics I	4
Fifth Semester (Spring)			
DFT	151	CAD I (or ELN 150)	3
ELN	133	Digital Electronics	4
ELN	133A	Digital Electronics Lab	1
Sixth Semester (Summer)			
		Humanities/Fine Arts Elective	3
		Social/Behavioral Science Elective	3

Seventh Semester (Fall)

ELC	117	Motors and Controls	4
ELC	128	Introduction to PLC	3
		Major Elective*	3

Eighth Semester (Spring)

ELN	232	Introduction to Microprocessors	4
ELN	234	Communication Systems	4
		Major Elective*	3

Ninth Semester (Summer)

ENG	114	Prof Research and Report Writing	3

Total Credit Hours Required **72**

*Major Elective: CET 125, CET 211, CET 212, CHM 135, EGR 285, ELC 213, ELC 228, ELC 229, ELN 237, MAT 151/151A, MAT 271, PHY 152, COE 112/115, SST 120

**Recommended courses for students seeking transfer for bachelor's degree in engineering technology.

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 print 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.

The Biogas Option is designed for preparing graduates for opportunities in landfill gas extraction and utilization. The Industrial Maintenance Option prepares graduates for opportunities in a multitude of entry-level maintenance related positions.

For student success in the program, the completion of all developmental course work is strongly recommended.

Industrial Systems Technology Associate in Applied Science Degree - Biogas Option (A50240)

Courses requiring a grade of "C" or better: ACA, ALT, BPR, COE, CMT, EGR, ELC, HYD, ISC, MEC, MNT, WAT, and WLD

First Semester (Fall)			**Credits**
ACA	115	Success and Study Skills	1
		(or EGR 110 or EGR 150)	
BPR	111	Blueprint Reading	2
CMT	210	Professional Construction Supervision	3
ELC	111	Introduction to Electricity	3
HYD	110	Hydraulics and Pneumatics	3
MNT	110	Introduction to Maintenance Procedures	2
PHY	121	Applied Physics I	4
		(or PHY 110/110A, CHM 121/121A, or MAT 121)	

Second Semester (Spring)

COM	231	Public Speaking	3
		(or COM 120 or ENG 114)	
EGR	115	Introduction to Technology	3
EGR	125	Application Software for Technicians	2
ENG	110	Freshman Composition (or ENG 111)	3
HYD	210	Advanced Hydraulics	2

Third Semester (Summer)

ELC	117	Motors and Controls	4
WAT	161	Solid Waste Management	2
		Humanities and Fine Arts Elective	3
		Social/Behavioral Science Elective	3

Fourth Semester (Fall)

ALT	130	Biogas Operations I	2
ALT	130A	Biogas Operations I Lab (or COE 111)	1
ELC	128	Introduction to PLC	3
ISC	222	Project Planning /Control	2
MNT	120	Industrial Wiring Methods (or ELC 113)	2
WLD	112	Basic Welding Processes	2

Fifth Semester (Spring)

ALT	131	Biogas Operations II	2
ALT	131A	Biogas Operations II Lab (or COE 121)	1
ELC	213	Instrumentation	4
ISC	121	Environmental Health and Safety	3
ISC	255	Engineering Economy	3
MEC	111	Machine Processing I (or MAC 111)	3
WLD	145	Thermoplastic Welding	2

Total Credit Hours Required **73**

Industrial Systems Technology Associate in Applied Science Degree - Industrial Maintenance Option (A50240)

Courses requiring a grade of "C" or better: ACA, AHR, ATR, BPR, CMT, EGR, ELC, HYD, ISC, MEC, MNT and WLD

First Semester (Fall)			Credits
ACA	115	Success and Study Skills	1
		(or EGR 110 or EGR 150)	
BPR	111	Blueprint Reading	2
EGR	115	Introduction to Technology	3
EGR	125	Application Software for Technicians	2
ELC	111	Introduction to Electricity	3
ENG	110	Freshman Composition (or ENG 111)	3
Second Semester (Spring)			
AHR	120	HVACR Maintenance	2
BPR	121	Blueprint Reading: Mechanical	2
CMT	210	Professional Construction Supervision	3
COM	231	Public Speaking (or COM 120 or ENG 114)	3
HYD	110	Hydraulics and Pneumatics	3
MEC	111	Machining Processing I (or MAC 111)	3
MNT	110	Introduction to Maintenance Procedures	2
Third Semester (Summer)			
ELC	128	Motors and Controls	4
		Humanities/Fine Arts Elective	3
		Social/Behavioral Science Elective	3
Fourth Semester (Fall)			
ELC	128	Introduction to PLC	3
ISC	121	Environmental Health and Safety	3
MNT	120	Industrial Wiring Methods (or ELC 113)	2
PHY	121	Applied Physics	4
		(or PHY 110/110A, CHM 121/121A, or MAT 121)	
WLD	112	Basic Welding Processes	2
		Major Elective*	2
Fifth Semester (Spring)			
ATR	112	Intro to Automation	3
ELC	213	Instrumentation	4
MNT	111	Maintenance Practices	3
MNT	240	Indust Equip Troubleshoot	2
		Major Elective*	3
Total Credit Hours Required			**73**

*Major Electives Select a total of 5 credit hours from: COE 111, COE 121, COE 112, , ELC 213, ELC 228, MEC 145, WLD 212

Industrial Systems Technology - Industrial Mechatronics Diploma (D50240)

Courses requiring a grade of "C" or better: ATR, BPR, EGR, ELC, HYD, ISC, MAC, MEC, MNT, WLD

First Semester (Fall)			Credits
ATR	112	Intro to Automation	3
BPR	111	Blueprint Reading	2
EGR	125	App. Software for Technicians (or CIS 110)	2
ELC	111	Introduction to Electricity	3
ELC	128	Introduction to PLC	3
PHY	121	Applied Physics I	4
		(or PHY 110/110A, CHM 121/121A or MAT 121)	
Second Semester (Spring)			
BPR	121	Blueprint Reading: Mechanical	2
ENG	110	Freshman Composition	3
		(or ENG 111 or COM 120)	
HYD	110	Hydraulics and Pneumatics	3
ISC	121	Environmental Health & Safety	3
MEC	111	Machine Processing I (or MAC 111)	3
MEC	145	Mfg. Materials 1	3
MNT	110	Intro to Maintenance Procedures	2
Third Semester (Summer)			
ELC	117	Motors and Controls	4
WLD	112	Basic Welding Processes	2
Total Credit Hours Required			**42**

Industrial Systems Technology Basic Maintenance Certificate (C50240L1)

The Industrial Systems Basic Maintenance program teaches the student 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
EGR	115	Introduction to Technology	3
ELC	111	Intro to Electricity	3
MNT	110	Intro to Maintenance Procedures	2
WLD	112	Basic Welding Processes	2
Total Credit Hours Required			**18**

Industrial Systems Technology Metal Fabrication Certificate (C50240L2)

The Industrial Systems Metal Fabrication program teaches the student concepts and skills needed to fabricate simple fixtures and equipment.

Major Requirements		Credit
BPR 111	Blueprint Reading	2
BPR 121	Blueprint Reading Mechanical	2
EGR 110	Intro to Engineering Tech (or EGR 150)	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		**16**

Mechanical Engineering Technology

A course of study that prepares the students to use basic engineering principles and technical skills to design, develop, test, and troubleshoot projects involving mechanical systems. Includes instruction in principles of mechanics, applications to specific engineering systems, design testing procedures, prototype and operational testing and inspection procedures, manufacturing system-testing procedures, test equipment operation and maintenance, computer applications, critical thinking, planning and problem solving, and oral and written communications. Graduates of the curriculum will find employment opportunities in the manufacturing or service sectors of engineering technology. Engineering technicians may obtain professional certification by application to organizations such as ASQC, SME, and NICET.

Mechanical Engineering Technology Associate in Applied Science Degree (A40320)

Courses requiring a grade of "C" or better: ACA, ATR, COE, DFT, EGR, ELC, HYD, ISC, MAT, MEC, PLA

First Semester (Fall)		Credits
EGR 110	Intro to Engineering Technology	2
EGR 115	Introduction to Technology	3
EGR 125	Application Software for Technicians	2
ELC 111	Introduction to Electricity	3
ENG 110	Freshman Composition (or** ENG 111)	3
MAT 121	Algebra Trigonometry I (or **MAT 171/171A, MAT 175)	3
Second Semester (Spring)		
ISC 121	Environmental Health and Safety	3
HYD 110	Hydraulics/Pneumatics	3
MEC 111	Machine Processes I (or MAC 111)	3
MEC 145	Mfg. Materials I	3
PHY 131	Physics-Mechanics (or **PHY 151)	4
Third Semester (Summer)		
COM 231	Public Speaking (or COM 120 or ENG 114)	3
	Humanities/Fine Arts Elective	3
	Social/Behavioral Science Elective	3
Fourth Semester (Fall)		
ATR 112	Intro to Automation	3
EGR 250	Statics/Strength of Materials	5
ELC 128	Introduction to PLC	3
PLA 110	Introduction to Plastics	2
PLA 120	Injection Molding	3
	*Major Elective	2
Fifth Semester (Spring)		
ATR 212	Industrial Robots	3
DFT 151	CAD I (or **DFT 170)	3
DFT 154	Introduction to Solid Modeling	3
MEC 155	Environmental Benign Manufacturing	3
MEC 260	Fundamentals of Machine Design	3
Total Credit Hours Required		**74**

*Major Elective- Select a total of 2 -3 credit hours from: BPR 111, DFT 111, COE 111, COE 121, ISC 222, ISC 132

** Recommended courses for students seeking transfer for bachelor's degree in Engineering Technology.

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	112	Intro to Automation	3
BPR	111	Blueprint Reading	2
EGR	115	Introduction to Technology	3
ISC	121	Environmental Health and Safety	3
PLA	110	Introduction to Plastics	2
PLA	120	Injection Molding	3
Total Credit Hours Required			**16**

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	145	Mfg Materials I	3
Total Credit Hours Required			**14**

Mechanical Engineering Technology - Automation & Robotics Certificate (C40320L5)

The Mechanical Engineering Technology Automation and Robotics Certificate program is designed to develop fundamental skills necessary to safely operate and maintain robotic and automated equipment. This certificate prepares students for employment opportunities in automated industries.

Major Requirements			Credits
ATR	112	Intro to Automation	3
ATR	212	Industrial Robots	3
EGR	115	Introduction to Technology	3
ELC	111	Intro to Electricity	3
ELC	128	Intro to PLC	3
Total Credit Hours Required			**15**

Sustainability Technologies

The Sustainability Technologies curriculum is designed to prepare individuals for employment in environmental, construction, renewable energy, or related industries, where key emphasis is placed on energy production and waste reduction along with sustainable technologies.

Course work includes renewable energy, green building technology, and environmental technologies. Additional topics may include sustainability, energy management, waste reduction, renewable energy, site assessment, and environmental responsibility.

Graduates should qualify for positions within the renewable energy, construction, and/or environmental industries. Employment opportunities exist in both the government and private industry sectors where graduates may function as renewable energy 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, BIO, SST

First Semester (Fall)			Credits
ARC	112	Construction Materials and Methods	4
EGR	110	Introduction to Eng. Tech (or EGR 150)	2
EGR	125	Application Software for Technicians	2
ELC	111	Introduction to Electricity	3
MAT	121	Algebra/Trigonometry I	3
		(or MAT 161/161A, MAT 171/171A, MAT 175)	
SST	110	Introduction to Sustainability	3
Second Semester (Spring)			
ALT	120	Renewable Energy Technology	3
ARC	111	Intro to Arch Technology	3
ARC	131	Building Codes	3
CST	111	Construction I	4
DFT	170	Engineering Graphics	3
SST	140	Green Building Concepts	3
Third Semester (Summer)			
ENG	111	Expository Writing	3
		Humanities/Fine Arts Elective	3
		Social/Behavioral Science Elective	3

Fourth Semester (Fall)

ELC 220	Photovoltaic Systems Tech.	3
CST 150	Building Sciences	3
ARC 261	Solar Technology	2
EGR 250	Statics/Strength of Materials	5
SST 130	Modeling Renewable Energy	3

Fifth Semester (Spring)

ENG 114	Professional Research and Reporting	3
BIO 140	Environmental Biology	3
BIO 140A	Environmental Biology Lab	1
SST 120	Energy Use Analysis	3
SST 210	Issues on 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 non-consumable electrode welding and cutting processes.

Courses provide the student with industry-standard skills developed through classroom training and practical application.

Successful graduates of the Welding Technology curriculum may be employed as entry-level technicians in 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: ACA, WLD

First Semester (Fall)		**Credits**
ACA 115	Success and Study Skills	1
PHY 121	Applied Physics I	4
WLD 110	Cutting Processes	2
WLD 115	SMAW (Stick) Plate	5
WLD 121	GMAW (MIG) Plate	4
WLD 131	GTAW (TIG) Plate	4

Second Semester (Spring)

ENG 110	Freshman Composition (or ENG 111)	3
WLD 116	SMAW (Stick) Plate/Pipe	4
WLD 122	GMAW (MIG) Plate/Pipe	3
WLD 132	GTAW (TIG) Plate/Pipe	3
WLD 141	Symbols and Specifications	3

Third Semester (Summer)

	Communications Elective*	3
	Humanities/Fine Arts Elective	3
	Social/Behavioral Science Elective	3

Fourth Semester (Fall)

MEC 111	Machine Processes I	3
WLD 151	Fabrication I	4
WLD 231	GTAW (TIG) Pipe	3
WLD 261	Certification Practices	2

Fifth Semester (Spring)

MEC 110	Intro to CAD/CAM	2
WLD 215	SMAW (Stick) Pipe	4
WLD 251	Fabrication II	3
WLD 262	Inspection & Testing	3

Total Credit Hours Required **69**

*Communications Elective: COM 120, COM 231, ENG 114

Welding Technology - Diploma (D50420)

Courses requiring a grade of "C" or better: ACA, WLD

First Semester (Fall)

ACA 115	Success and Study Skills	1
PHY 121	Applied Physics I	4
WLD 110	Cutting Processes	2
WLD 115	SMAW (Stick) Plate	5
WLD 121	GMAW (MIG) FCAW Plate	4
WLD 131	GTAW (TIG) Plate	4

Second Semester (Spring)

ENG 110	Freshman Composition	3
WLD 116	SMAW (Stick) Plate/Pipe	4
WLD 122	GMAW (MIG) Plate/Pipe	3
WLD 141	Symbols and Specifications	3
WLD 132	GTAW (TIG) Plate/Pipe	3

Total Credit Hours Required **36**

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**

Arts and Sciences

Degrees Conferred

Associate in Arts
Associate in Science
Associate of Applied Science General Occupational Technology

Diplomas Awarded

Transfer Core Diploma in Arts
Transfer Core Diploma in Science
General Occupational Technology Diploma

Honors Interdisciplinary Studies Program

This new program for honors students emphasizes interdependency between varied disciplines and 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 Honors 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.

For more information and eligibility requirements, please contact Gigi Derballa, 398-7329.

2+2 Agreements

The 2+2 Agreements are special arrangements that allow students who successfully complete a college transfer degree at A-B Tech to transfer seamlessly as a junior in a specific program at specified four-year colleges or universities (see below).

Fermentation

Students interested in the 2+2 Fermentation Track with Appalachian State should select the following General Education and Elective Courses:

ACA 115 (1)
BIO 111 (4)
BIO 112 (4)
BIO 275 (4)
BUS 110 (3)
CHM 151 (4)
CHM 152 (4)
COM 231 (3)
ECO 251 (3)
ENG 111 (3)
ENG 112/113/114 (3)
HIS (3)
MAT 151/151A (4)
MAT 175 (4)
MAT 271 (4)
Fine Arts (3)
Humanities/Communication/Literature (ENG) (3)
Math/Science Electives (5)
Social/Behavioral Sciences (3)

General Education for Transfer Degrees and Diplomas

Purpose

The General Education component of transfer degrees and diplomas provides students with a knowledge base of historical, societal, and environmental contexts for succeeding in the changing global community. The General Education component represents a full spectrum of English composition, communication, humanities and fine arts, social and behavioral sciences, natural sciences, and mathematics courses.

General Education courses facilitate student acquisition and sharing of knowledge, encourage social interaction, and promote an educated citizenry. General Education courses also develop broad, cross-curriculum knowledge and skill sets that prepare the student to successfully master the challenges of post-graduation endeavors.

Assessment of General Education Outcomes

Upon successful completion of a transfer degree, the student will demonstrate competency in four General Education outcomes. Each outcome is assessed in several General Education courses. General Education outcomes and the courses where these outcomes are assessed follow. Note that additional General Education courses beyond those listed are required under the Comprehensive Articulation Agreement for university transfer. See individual program requirements for further details. See the General Education for AAS Degrees section for General Education requirements for AAS degrees.

Communication

Students will deliver purposeful messages designed to increase knowledge, foster understanding, or promote change in an audience's attitudes or behaviors.

COM 110	COM 120	COM 140
COM 231	ENG 111	ENG 112
ENG 113	ENG 114	

Social/Behavioral Sciences

Students will demonstrate an understanding of social institutions and of the diversity of human experiences within a framework of historical and cultural contexts.

ANT 210	ANT 220	ANT 240
ECO 151	ECO 251	ECO 252
HIS 111	HIS 112	HIS 131
HIS 132	POL 110	POL 120
PSY 150	PSY 237	PSY 239
PSY 241	PSY 281	SOC 210
SOC 213	SOC 220	SOC 225
SOC 240		

Humanities/Fine Arts

Students will identify, assess, and formulate various perspectives of human values and/or creative expressions.

ART 111	ART 114	ART 115
DRA 111	DRA 112	DRA 122
DRA 126	ENG 131	ENG 231
ENG 232	ENG 241	ENG 242
ENG 243	ENG 261	ENG 262
HUM 110	HUM 115	HUM 121
HUM 122	HUM 130	HUM 150
HUM 160	HUM 211	HUM 212
MUS 110	MUS 112	MUS 113
MUS 210	PHI 215	PHI 240
REL 110	REL 111	REL 112
REL 211	REL 212	

Mathematics/Natural Science

Students will design, evaluate, and implement a strategy to solve a defined discipline-specific problem.

AST 111	BIO 110	BIO 111
BIO 140	CHM 135	CHM 151
GEL 111	MAT 140	MAT 151
MAT 161	MAT 171	MAT 175
MAT 271	PHY 110	PHY 151
PHY 251		

Curriculum Requirements for the Associate in Arts (A.A.) Degree (A10100)

Program Summary	Hours
General Education	44
English/Composition	*6*
Humanities/Communication/Fine Arts	*12*
Social/Behavioral Sciences	*12*
Natural Sciences	*8*
Mathematics	*6*
Other Courses	21
Total Credit Hours Required	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/Communication/Fine Arts (12 semester hours)

1. One communication course from the list below is required
2. **At least one literature (ENG) course from the list below is required**
3. HUM 220, Human Values and Meaning, is required
4. One additional course from the list below is required.

ART 111	ART 114	ART 115
COM 110	COM 120	COM 140
COM 231	DRA 111	DRA 112
DRA 122	DRA 126	ENG 131
ENG 231	ENG 232	ENG 241
ENG 242	ENG 243	ENG 261
ENG 262	FRE 111	FRE 112
FRE 211	FRE 212	HUM 110
HUM 115	HUM 120	HUM 121
HUM 122	HUM 130	HUM 150
HUM 160	HUM 211	HUM 212
HUM 220	MUS 110	MUS 112
MUS 113	MUS 210	PHI 215
PHI 240	REL 110	REL 111
REL 112	REL 211	REL 212
SPA 111	SPA 112	SPA 211
SPA 212		

Social/Behavioral Sciences (12 semester hours)

Select four courses from at least three of the following disciplines: anthropology, economics, history, political science, psychology, andsociology.

At least one course must be a history course.

ANT 210	HIS 131	PSY 281
ANT 220	HIS 132	SOC 210
ANT 240	POL 110	SOC 213
ECO 151	POL 120	SOC 220
ECO 251	PSY 150	SOC 225
ECO 252	PSY 237	SOC 240
HIS 111	PSY 239	
HIS 112	PSY 241	

Natural Sciences (8 semester hours)

Select two courses, including two accompanying corequisite laboratories from the astronomy, biology, chemistry, geology, or physics disciplines. Either BIO 110 or BIO 111 may count toward General Education core hours.

AST 111	BIO 140A	PHY 110
AST 111A	CHM 132	PHY 110A
BIO 110	CHM 135	PHY 151
BIO 111	CHM 151	PHY 152
BIO 112	CHM 152	PHY 251
BIO 120	GEL 111	PHY 252
BIO 130	GEL 113	
BIO 140	GEL 230	

Mathematics (6 semester hours)

MAT 140	MAT 171*	MAT 271
MAT 151*	MAT 172*	MAT 272
MAT 161*	MAT 175	MAT 273

*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 or ACA 122 College Transfer Success required
2. Additional Courses (20 Semester Hours):

   These include courses that have been approved for transfer

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

Total Semester Hours 65

Some colleges/universities require:

* physical education and/or health

* a two-semester sequence of foreign language

Check with the transfer institution for further information.

All college transfer courses submitted for graduation require a minimum grade of "C". Courses selected may vary according to requirements of the senior institution. 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.

ACC 120 (4)
ACC 121 (4)
ART 121 (3)
ART 122 (3)
ART 131 (3)
ART 132 (3)
ART 171 (3)
ART 231 (3)
ART 240 (3)
ART 241 (3)
ART 244 (3)
ART 260 (3)
ART 261 (3)
ART 264 (3)
ART 265 (3)
ART 266 (3)
ART 267 (3)
ART 271 (3)
ART 275 (3)
ART 281 (3)
ART 282 (3)
ART 283 (3)
ART 284 (3)
BIO 155 (3)
BIO 163 (5)
BIO 168 (4)
BIO 169 (4)
BIO 175 (3)
BIO 224 (2)
BIO 225 (2)
BIO 226 (2)
BIO 250 (4)
BIO 271 (3)
BIO 275 (4)
BUS 110 (3)
BUS 115 (3)
BUS 137 (3)
CHM 251 (4)
CHM 252 (4)
CHM 271 (3)
CIS 110 (3)
CIS 115 (3)
CJC 111 (3)
CJC 121 (3)
CJC 141 (3)
COM 150 (3)
CSC 134 (3)
CSC 151 (3)
CTS 115 (3)
DFT 170 (3)
DRA 120 (3)
DRA 130 (3)
DRA 131 (3)
DRA 135 (3)
DRA 140 (3)
DRA 145 (2)
DRA 170 (3)
DRA 171 (3)
EDU 216 (4)
EGR 150 (2)
EGR 220 (3)
EGR 230 (3)
ENG 125 (3)
ENG 126 (3)
ENG 135 (3)
ENG 235 (3)
ENG 272 (3)
ENG 273 (3)
ENG 274 (3)
FRE 181 (1)
FRE 182 (1)
GIS 111 (1)
HEA 110 (3)
HEA 112 (2)
HIS 162 (3)
HIS 212 (3)
HIS 221 (3)
HIS 226 (3)
HIS 227 (3)
HIS 236 (3)
HUM 120 (3)
HUM 121 (3)
HUM 160 (3)
HUM 230 (3)*
JOU 216 (3)
MAT 151A (1)
MAT 161A (1)
MAT 167 (3)
MAT 171A (1)
MAT 172A (1)
MAT 280 (3)
MAT 285 (3)
MUS 121 (4)
MUS 122 (4)
MUS 131 (1)
MUS 132 (1)
MUS 231 (1)
MUS 232 (1)
PED 110 (2)
PED 117 (1)
PED 118 (1)
PED 119 (1)
PED 120 (1)
PED 122 (1)
PED 123 (1)
PED 128 (1)
PED 130 (1)
PED 142 (1)
PED 143 (1)
PED 145 (1)
PED 171 (1)
PED 217 (1)
PED 218 (1)
PED 220 (1)
PED 235 (1)
PED 236 (1)
PHS 140 (3)
PSY 215 (3)
SOC 215 (3)
SOC 234 (3)
SOC 254 (3)
SPA 141 (3)
SPA 181 (1)
SPA 182 (1)

*Course is reserved for PTK members and Honors students.

Associate of Arts Advising Tracks

Advising Tracks provide students who are interested in majoring in specific disciplines at a four-year college or university with a suggested plan of study. Students are strongly advised to contact the school they wish to transfer to for specific requirements. Students should also contact the Transfer Advising Center in the Bailey Building for additional assistance.

Students interested in the following disciplines should select the discipline-specific General Education and Elective Courses below:

Art Education

ACA 115 or 122(1)
ART 114 (3)
ART 115 (3)
ART 121 (3)
ART 122 (3)
ART 131 (3)
ART 132/171/231/240/244/262/264/281/283 (6)
COM 110/120/140/231 (3)
ENG 111 (3)
ENG 112/113/114 (3)
HUM 220 (3)
MAT 140 (3)
MAT 151/151A (4)
HIS 111/112/131/132 (3)
Electives (1)
Literature (ENG) (3)
Natural Sciences (8)
Social/Behavioral Sciences (9)

Communication/Communication Studies

ACA 115 or 122(1)
CIS 110 (3)
COM 110 (3)
COM 120 (3)
COM 140 (3)
COM 150 (3)
COM 231 (3)
ENG 111 (3)
ENG 112/113 (3)
HIS (3)
HUM 115 (3)
HUM 220 (3)
MAT 140 (3)
MAT 151/151A (4)
PSY 150 (3)
SOC 210 (3)
SOC 225 (3)
Humanities/Communication/Fine Arts (3)
Literature (ENG) (3)
Natural Sciences (8)
Electives (1)

Criminal Justice

ACA 115 or 122(1)
CJC 111 (3)
CJC 121 (3)
CJC 141 (3)
COM 110/120/140/231(3)
ENG 111 (3)
ENG 112/113/114 (3)
HIS (3)
HUM 220 (3)
MAT 161/161A (4)
MAT 151/151A (4)
POL 120 (3)
PSY 150 (3)
SOC 210 (3)
Electives (9)
Humanities/Communication/Fine Arts (3) Literature (ENG) (3)
Natural Sciences (8)

English

ACA 115 or 122(1)
COM 110/120/140/231 (3)
ENG 111 (3)
ENG 112/113/114 (3)
ENG 231/241/261 (6)
ENG 232/242/262 (6)
HIS 111 (3)
HIS 112 (3)
HUM 220 (3)
MAT 151/151A (4)
MAT 161/161A (4)
SPA or FRE 111/181 (4)
SPA or FRE 112/182 (4)
Electives (1)
Natural Sciences (8)
Social/Behavioral Sciences (9)

Film and Media Studies

ACA 115 or 122(1)
ART 266 (3)
ART 267 (3)
COM 140 or 231 (3)
COM 150 (3)
DRA 112 (3)
ENG 111 (3)
ENG 113 (3)
ENG 235 (3)
HIS 111 (3)
HIS 112 (3)
HUM 160 (3)
HUM 220 (3)
MAT 140 (3)
MAT 151/151A (4)
PED (1)
PSY 150 (3)
SOC 225 (3)
ART 111, BUS 137, DRA 130,DRA 140, HUM 110 or JOU 216 (3)
Literature (ENG) (3)
Natural Sciences (8)

History

ACA 115 or 122(1)
ANT 210/220 (3)
COM 110/120/140/231 (3)
ENG 111 (3)
ENG 112/113 (3)
HIS 131 (3)
HIS 132 (3)
HUM 220 (3)
HIS 111 (3)
HIS 112 (3)
MAT 151/151A (4)
MAT 161/161A (4)
POL 110/120 (3)
SOC 210 (3)
SPA or FRE 111/181 (4)
SPA or FRE 112/182 (4)
Elective (1)
Humanities/ Communication/ Fine Arts (3)
Literature (ENG) (3)
Natural Sciences (8)

Liberal Studies
ACA 115 or 122(1)
CIS 110 (3)
COM 231 (3)
ENG 111 (3)
ENG 112 or 113 (3)
HIS (3)
HUM 115 (3)
HUM 220 (3)
MAT 140 (3)
MAT 151/151A (4)
MUS 110/112/113/210 (3)
PSY 150 (3)
SOC 210 (3)
SOC 225 (3)
SPA or FRE 111/181 (4)
SPA or FRE 112/182 (4)
SPA or FRE 211 (3)
Elective (2)
Literature (ENG) (3)
Natural Sciences (8)

Physical Education

ACA 115 or 122 (1)
BIO 111 (4)
BIO 112 (4)
COM 231 (3)
ENG 112 (3)
HEA 112 (2) ENG 111 (3)
HEA 110 (3)
HIS (3)
HUM 220 (3)
MAT 151/151A (4)
MAT 161/161A (4)
PED 110 (2)
PED Electives (3)
PSY 150 (3)
SOC 210 (3) PED (2)
Electives (6)
Fine Arts (3)
Humanities/ Communication/
Literature (ENG) (3)
Social/Behavioral Sciences (3)

Psychology

ACA 115 or 122(1)
BIO 110 (4)
BIO 140/140A or GEL 111 (4)
COM 110/120/140/231 (3)
ENG 111 (3) ENG 112 (3)
HIS 112 (3)
HUM 220 (3)
MAT 140 or higher (3)
MAT 151/151A (4)
PHI 240 (3)
PSY 150 (3)
PSY 241/281 (3)
SOC 210 (3)
SPA or FRE 111/181 (4)
SPA or FRE 112/182 (4)
Electives (10 - 11)
Literature (ENG) (3)

Social Work

ACA 115 or 122(1)
BIO 110 (4)
BIO 140/140A or GEL 111 (4)
COM 140 (3)
ENG 111 (3)
ENG 112 (3) HIS 132 (3)
HUM 220 (3)
MAT 140 or higher (3)
MAT 151/151A (4)
POL 120 (3)
PSY 150 (3)
PSY 241 (3)
PSY 281 (3)
SOC 210 (3)
SPA or FRE 111/181 (4)
SPA or FRE 112/182 (4)
Electives (4 - 5)
Humanities/Communication/
Fine Arts Elective (3)
Literature (ENG) (3)

Sociology

ACA 115 or 122(1)
BIO 110 (4)
BIO 140/140A or GEL 111 (4)
COM 140 (3)
ENG 111 (3)
ENG 112 (3)
HEA 110 (3)
HEA 110 (3)
HIS 112 (3)
HUM 220 (3)
MAT 140 or higher (3)
MAT 151/151A (4)
PED (1)
PSY 150 (3)
SOC 210 (3)
SOC 213/220/225 (6)
SPA or FRE 111/181 (4)
SPA or FRE 112/182 (4)
Literature ENG (3)
Social/Behavioral Sciences
Electives (6 - 7)

Curriculum Requirements for the Transfer Core Diploma in Arts (D10100)

Program Summary	Hours
General Education	44
English/Composition	*6*
Humanities/Communication/Fine Arts	*12*
Social/Behavioral Sciences	*12*
Natural Sciences	*8*
Mathematics	*6*
Other Courses	1
Total Credit Hours Required	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/Communication/Fine Arts (12 semester hours)

1. One communication course from the list below is required.
2. **At least one literature course (ENG) from the list below is required.**
3. HUM 220, Human Values and Meaning, is required.
4. One additional course from the list below is required.

ART 111	ENG 232	HUM 121	PHI 240
ART 114	ENG 241	HUM 122	REL 110
ART 115	ENG 242	HUM 130	REL 111
COM 110	ENG 243	HUM 150	REL 112
COM 120	ENG 261	HUM 160	REL 211
COM 140	ENG 262	HUM 211	REL 212
COM 231	FRE 111	HUM 212	SPA 111
DRA 111	FRE 112	HUM 220	SPA 112
DRA 112	FRE 211	MUS 110	SPA 211
DRA 122	FRE 212	MUS 112	SPA 212
DRA 126	HUM 110	MUS 113	
ENG 131	HUM 115	MUS 210	
ENG 231	HUM 120	PHI 215	

Social/Behavioral Sciences (12 semester hours)

Select four courses from at least three of the following disciplines: anthropology, economics, history, political science, psychology, and sociology. **At least one course must be a history course.**

ANT 210	HIS 111	PSY 150	SOC 213
ANT 220	HIS 112	PSY 237	SOC 220
ANT 240	HIS 131	PSY 239	SOC 225
ECO 151	HIS 132	PSY 241	SOC 240
ECO 251	POL 110	PSY 281	
ECO 252	POL 120	SOC 210	

Natural Sciences (8 semester hours)

Select two courses, including two accompanying corequisite laboratories, from the astronomy, biology, chemistry, geology, or physics disciplines. Either BIO 110 or BIO 111 may count toward General Education core hours.

AST 111	BIO 130	CHM 152	PHY 151
AST 111A	BIO 140	GEL 111	PHY 152
BIO 110	BIO 140A	GEL 113	PHY 251
BIO 111	CHM 132	GEL 230	PHY 252
BIO 112	CHM 135	PHY 110	
BIO 120	CHM 151	PHY 110A	

Mathematics (6 semester hours)

Select two courses, including accompanying corequisite laboratories.

MAT 140	MAT 171*	MAT 271
MAT 151*	MAT 172*	MAT 272
MAT 161*	MAT 175	MAT 273

*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
English/Composition	*6*
Humanities/Communication/Fine Arts	*9*
Social/Behavioral Sciences	*9*
Natural Sciences/Mathematics	*20*
Other Courses	21
Program Total	65

General Education Core Requirements 44 Semester Hours

English Composition (6 semester hours)

1. ENG 111 Expository Writing is required.
2. Select one additional course from:

   ENG 112 Argument-Based Research
   ENG 113 Literature-Based Research
   ENG 114 Professional Research and Reporting

Humanities/Communication/Fine Arts (9 semester hours)

1. One communication course from the list below is required.
2. **At least one literature course (ENG) from the list below is required.**
3. One additional course from the list below is required.

ART 111	DRA 126	FRE 112	HUM 160	REL 110
ART 114	ENG 131	FRE 211	HUM 211	REL 111
ART 115	ENG 231	FRE 212	HUM 212	REL 112
COM 110	ENG 232	HUM 110	HUM 220	REL 211
COM 120	ENG 241	HUM 115	MUS 110	REL 212
COM 140	ENG 242	HUM 120	MUS 112	SPA 111
COM 231	ENG 243	HUM 121	MUS 113	SPA 112
DRA 111	ENG 261	HUM 122	MUS 210	SPA 211
DRA 112	ENG 262	HUM 130	PHI 215	SPA 212
DRA 122	FRE 111	HUM 150	PHI 240	

Social/Behavioral Sciences (9 semester hours)

Select three courses from three of the following disciplines: anthropology, economics, political science, psychology and sociology. **One course must be a history course.**

ANT 210	HIS 111	PSY 150	SOC 213
ANT 220	HIS 112	PSY 237	SOC 220
ANT 240	HIS 131	PSY 239	SOC 225
ECO 151	HIS 132	PSY 241	SOC 240
ECO 251	POL 110	PSY 281	
ECO 252	POL 120	SOC 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 and BIO 112
CHM 151 and CHM 152
PHY 151 and PHY 152
PHY 251 and PHY 252

Mathematics (6 semester hours)

1. MAT 171 or higher is required. Select one course from:

   MAT 171* Precalculus Algebra
   MAT 172* Precalculus Trigonometry
   MAT 175 Precalculus
   MAT 271 Calculus I
   MAT 272 Calculus II
   MAT 273 Calculus III

2. Select a second course from the following:

MAT 151*	MAT 175	MAT 272
MAT 172*	MAT 271	MAT 273

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

Either BIO 110 or BIO 111 may count toward General Education core hours, not both. Six additional semester hours may be selected from either natural sciences (listed below) or mathematics (listed above):

BIO 110	BIO 140/BIO 140A	GEL 111
BIO 120	CHM 132	GEL 113
BIO 130	CHM 135	GEL 230

Other Required Hours (21 Semester Hours)

1. ACA 115, Success and Study Skills, or ACA 122, College Transfer Success, is required.
2. Additional Courses (14 Semester Hours):

   A minimum of 14 semester hours of college transfer course credit in mathematics, natural sciences, or computer science is required.

3. Additional Elective Courses (6 Semester Hours):

   Math lab hours, when required as a corequisite, count as electives.

Total Semester Hours 65

Some colleges/universities require:

* physical education and/or health

* a two-semester sequence of foreign language

Check with the four-year college or university for further information.

All college transfer courses submitted for graduation require a minimum grade of "C". Courses selected may vary according to requirements of the four-year college or university. 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.

ACC 120 (4)	ART 266 (3)	BIO 224 (2)	CJC 121 (3)
ACC 121 (4)	ART 267 (3)	BIO 225 (2)	CJC 141 (3)
ART 121 (3)	ART 271 (3)	BIO 226 (2)	COM 150 (3)
ART 122 (3)	ART 275 (3)	BIO 250 (4)	CSC 134 (3)
ART 131 (3)	ART 281 (3)	BIO 271 (3)	CSC 151 (3)
ART 132 (3)	ART 282 (3)	BIO 275 (4)	CTS 115 (3)
ART 171 (3)	ART 283 (3)	BUS 110 (3)	CJC 111 (3)
ART 231 (3)	ART 284 (3)	BUS 115 (3)	CJC 121 (3)
ART 240 (3)	AST 111 (3)	BUS 137 (3)	CJC 141 (3)
ART 241 (3)	AST 111A (1)	CHM 251 (4)	COM 150 (3)
ART 244 (3)	BIO 155 (3)	CHM 252 (4)	DFT 170 (3)
ART 260 (3)	BIO 163 (5)	CHM 271 (3)	DRA 120 (3)
ART 261 (3)	BIO 168 (4)	CIS 110 (3)	DRA 130 (3)
ART 264 (3)	BIO 169 (4)	CIS 115 (3)	DRA 131 (3)
ART 265 (3)	BIO 175 (3)	CJC 111 (3)	DRA 135 (3)

DRA 140 (3)
DRA 145 (3)
DRA 170 (3)
DRA 171 (3)
EDU 216 (4)
EGR 150 (2)
EGR 220 (3)
EGR 230 (3)
ENG 125 (3)
ENG 126 (3)
ENG 135 (3)
ENG 235 (3)
ENG 272 (3)
ENG 273 (3)
ENG 274 (3)
FRE 181 (1)
FRE 182 (1)
GIS 111 (1)
HEA 110 (3)
HEA 112 (2)
HIS 162 (3)
HIS 212 (3)
HIS 221 (3)
HIS 226 (3)
HIS 227 (3)
HIS 236 (3)
HUM 120 (3)
HUM 121 (3)
HUM 160 (3)
HUM 230 (3)*
JOU 216 (3)
MAT 151A (1)
MAT 161 (3)
MAT 161A (1)
MAT 167 (3)
MAT 171A (1)
MAT 172A (1)
MAT 280 (3)
MAT 285 (3)
MUS 121 (4)
MUS 122 (4)
MUS 131 (1)
MUS 132 (1)
MUS 231 (1)
MUS 232 (1)
PED 110 (2)
PED 117 (1)
PED 118 (1)
PED 119 (1)
PED 120 (1)
PED 122 (1)
PED 123 (1)
PED 128 (1)
PED 130 (1)
PED 142 (1)
PED 143 (1)
PED 145 (1)
PED 171 (1)
PED 17 (1)
PED 218 (1)
PED 220 (1)
PED 235 (1)
PED 236 (1)
PHS 140 (3)
PHY 110 (3)
PHY 110A (1)
PSY 215 (3)
SOC 215 (3)
SOC 234 (3)
SOC 254 (3)
SPA 141 (3)
SPA 181 (1)
SPA 182 (1)

*Course is reserved for PTK members and Honors students.

Associate of Science Advising Tracks

Advising Tracks provide students who are interested in majoring in specific disciplines at a four-year college or university with a suggested plan of study. Students are strongly advised to contact the school they wish to transfer to for specific requirements. Students should also contact the Transfer Advising Center in the Bailey Building for additional assistance.

Students interested in the following disciplines should select the discipline-specific General Education and Elective Courses below:

Biology/Biology Education

ACA 115 or 122(1)
BIO 111 (4)
BIO 112 (4)
BIO Electives (8)
CHM 151 (4)
CHM 152 (4)
CHM 251 (4)
CHM 252 (4)
COM 231 (3)
ENG 111 (3)
ENG 112/113/114 (3)
HIS (3)
MAT 171*/171A (4)
MAT 172/172A (4)
Humanities/Communication/
Fine Arts Electives (3)
Literature (ENG) (3)
Social/Behavioral Sciences
Electives (6)

*Assumes placement into MAT 171.

Chemistry/Chemistry Education

ACA 115 or 122(1)
CHM 151 (4)
CHM 152 (4)
CHM 251 (4)
CHM 252 (4)
CHM 271/MAT 273 (4)
CIS 110 (3)
COM 231 (3)
ENG 111 (3)
ENG 112/113/114 (3)
HIS (3)
MAT 271* (4)
MAT 272 (4)
PSY 150 (3)
PHY 251 (4)
PHY 252 (4)
Elective (1)

Humanities/Communication/Fine Arts Elective (3) Literature (ENG) (3) Social/Behavioral Sciences Elective (3)

*Assumes placement into MAT 271.

Engineering

ACA 115 or 122(1)
CHM 151 (4)
COM 110/120/140/231(3)
ECO 251/252 (3)
ENG 111 (3)
ENG 112/113/114 (3)
HIS (3)
MAT 271* (4)
MAT 272 (4)
MAT 273 (4)
PHY 251 (4)
PHY 252 (4)
Electives (6)

Humanities/Communication /Fine Arts (3)
Literature (ENG) (3)
Social/Behavioral Sciences (3)
Engineering Electives (10) from the list below

Engineering Electives (10):

BIO 111 (4)
BIO 175 (3)
BIO 275 (4)
CHM 152 (4)
CHM 251 (4)
CIS 115 (3
CSC 134 (3)
CSC 151 (3)
DFT 170 (3)
EGR 150 (3)
EGR 220 (3)
EGR 230 (3)
MAT 280 (3)
MAT 285 (3)*Assumes
placement into MAT 271.

Mathematics

ACA 115 or 122(1)
COM 110/120/140/231 (3)
CSC 134/151 (3)
ENG 111 (3)
ENG 112/113/114 (3)
HIS (3)
MAT 151/151A (4)
MAT 175* (4)
MAT 271 (4)
MAT 272 (4)
MAT 273 (4)
MAT 280/285 (3)
PHY 251 (4)
PHY 252 (4)
PHY 251 (4)

Humanities/Communication/Fine Arts (3)
Literature (ENG) (3)
Social/Behavioral Sciences (9)
Elective (3)
*Assumes placement into MAT 175.

Mathematics Education

ACA 115 or 122(1)
COM 110/120/140/231 (3)
CSC 134/151 (3)
EDU 216 (4)
ENG 111 (3)
ENG 112/113/114 (3)
HIS (3)
MAT 175* (4)
MAT 271 (4)
MAT 272 (4)
MAT 273 (4)
MAT 280/285 (3)
PHY 251 (4)
PHY 252 (4)
PSY 150 (3)
PSY 241 (3)

Humanities/Communication/Fine Arts (3)
Literature (ENG) (3)
Social/Behavioral Sciences (9)
Elective (3)

*Assumes placement into MAT 175.

Curriculum Requirements for the Transfer Core Diploma in Science (D10400)

Program Summary	Hours
General Education	44
English/Composition	*6*
Humanities/Communication/Fine Arts	*9*
Social/Behavioral Sciences	*9*
Natural Sciences/Mathematics	*20*
Other Courses	1
Total Credit Hours Required	45

General Education Core Requirements 44 Semester Hours

English Composition (6 semester hours)

1. ENG 111 Expository Writing is required.
2. Select an additional course from:

   ENG 112 Argument-Based Research
   ENG 113 Literature-Based Research
   ENG 114 Professional Research and Reporting

Humanities/Communication/Fine Arts (9 semester hours)

1. One communication course from the list below is required.
2. **At least one literature course (ENG) from the list below is required.**
3. One additional course from the list below is required.

ART 111
ART 114
ART 115
COM 110
COM 120
COM 140
COM 231
DRA 111
DRA 112
DRA 122
DRA 126
ENG 131
ENG 231
ENG 232
ENG 241
ENG 242
ENG 243
ENG 261
ENG 262
FRE 111
FRE 112
FRE 211
FRE 212
HUM 110
HUM 115
HUM 120
HUM 121
HUM 122
HUM 130
HUM 150
HUM 160
HUM 211
HUM 212
HUM 220
MUS 110
MUS 112
MUS 113
MUS 210
PHI 215
PHI 240
REL 110
REL 111
REL 112
REL 211
REL 212
SPA 111
SPA 112
SPA 211
SPA 212

Social/Behavioral Sciences (9 semester hours)

Select three courses from three of the following disciplines: anthropology, economics, political science, psychology and sociology. **One course must be a history course.**

ANT 210	HIS 131	PSY 281
ANT 220	HIS 132	SOC 210
ANT 240	POL 110	SOC 213
ECO 151	POL 120	SOC 220
ECO 251	PSY 150	SOC 225
ECO 252	PSY 237	SOC 240
HIS 111	PSY 239	
HIS 112	PSY 241	

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)

1. MAT 171 or higher is required. Select one course from:

   MAT 171* Precalculus Algebra
   MAT 172 Precalculus Trigonometry
   MAT 175* Precalculus
   MAT 271 Calculus I
   MAT 272 Calculus II
   MAT 273 Calculus III

2. Select a second course from the following:

MAT 151*	MAT 175	MAT 272
MAT 172*	MAT 271	MAT 273

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

Either BIO 110 or BIO 111 will count toward General Education core hours. Six additional semester hours may be selected from either natural sciences (listed below) or mathematics (listed above):

BIO 110	BIO 140A	GEL 113
BIO 120	CHM 132	GEL 230
BIO 130	CHM 135	
BIO 140	GEL 111	

Other Required Hours (1 Semester Hour)

1. ACA 115, Success and Study Skills or ACA 122 College Transfer Success required.

Total Semester Hours 45

Curriculum Requirements for the Associate in Fine Arts (A.F.A.) Degree (with pre-major in Art)

The Associate in Fine Art Degree at AB Tech is a two-year college transfer degree program with a concentration in Art. The program is designed for students with a specific interest in the visual arts. The Concentration require a general education core, required art foundation core, and electives.

Program Summary	Hours
General Education Core	28
English/Composition	*6*
Humanities/Communication/Fine Arts	*6*
Social/Behavioral Sciences	*9*
Natural Sciences	*4*
Mathematics	*3*
Other Required Courses in Pre-Majors	36-37 SHC
Total Credit Hours Required	65

General Education Core Requirements 28 Semester Hours

English Composition (6 semester hours)

1. ENG 111 Expository Writing is required.
2. Select one additional course from:

   ENG 112 Argument-Based Research
   ENG 113 Literature-Based Research
   ENG 114 Professional Research and Reporting

Humanities/Communication/Fine Arts (6 semester hours)

1. One communication course from the list below is required..
2. **One course literature (ENG) course from the list below is required.**

COM	110COM	231ENG	232ENG	243
COM	120ENG	131ENG	241ENG	261
COM	140ENG	231ENG	242ENG	262

Social/Behavioral Sciences (9 semester hours)

Select three courses from three of the following disciplines: anthropology, economics, political science, psychology and sociology. **One course must be a history course.**

ANT 210	ECO 252	POL 110	PSY 239	SOC 213
ANT 220	HIS 111	POL 120	PSY 241	SOC 220
ANT 240	HIS 112	PSY 150	PSY 281	SOC 225
ECO 151	HIS 131	PSY 237	SOC 210	SOC 240
ECO 251	HIS 132			

Natural Sciences (4 semester hours)

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

AST 111	BIO 120	CHM 132	GEL 111	PHY 110
AST 111A*	BIO 130	CHM 135	GEL 113	PHY 110A*
BIO 110	BIO 140	CHM 151	GEL 230	PHY 151
BIO 111	BIO 140A	CHM 152		

Mathematics (3 semester hours)

MAT 140 Survey of Mathematics

Associate in Fine Arts Pre-Major Art Concentration (A1020A)

Major Art Core Requirements 15 Semester Hours

The following courses are required for the A.F.A. Degree with ART concentration:

ART 114	ART 115	ART 121	ART 122	ART 131

Other Required Hours (22 SHC)

1. ACA 115, Success and Study Skills or ACA 122 College Transfer Success required.
2. ART 171 (3 SHC), preferred elective
3. Additional Elective Courses (18 SHC):

   Select additional courses to equal 18 semester hours of credit from those listed below:

ART 132 (3)	ART 241 (3)	ART 264 (3)	ART 267 (3)	ART 281 (3)
ART 231 (3)	ART 244 (3)	ART 265 (3)	ART 271 (3)	ART 282 (3)
ART 240 (3)	ART 261 (3)	ART 266 (3)	ART 275 (3)	ART 283 (3)
				ART 284 (3)

Total Semester Hours 65

General Occupational Technology

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 Student Services for additional information.

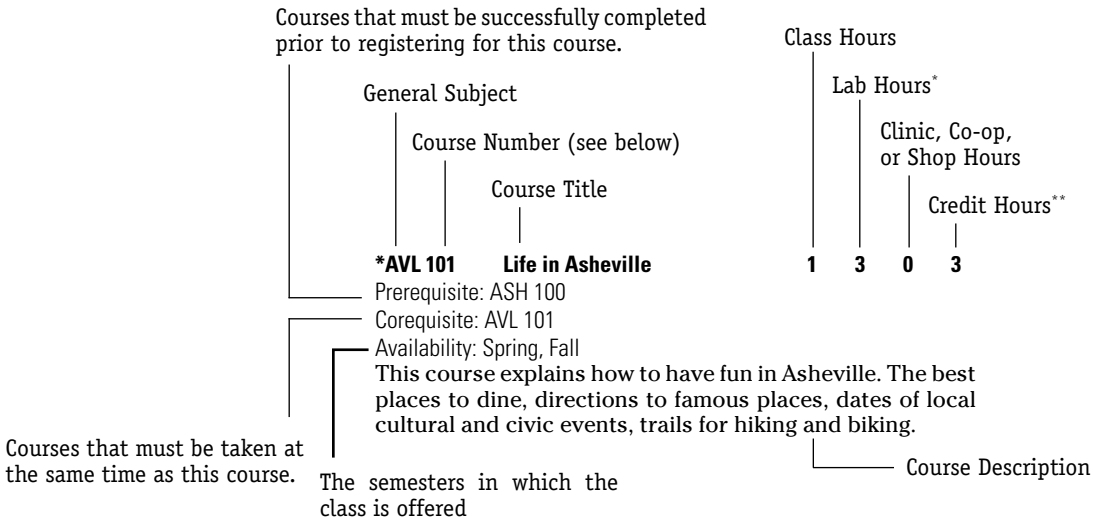
A.A.S. Degree (A55280) Program Summary	**Credit Hours**
General Education	15
Major Hours	49
Other Required Hours	0-7
Total Credit Hours Required	64-71

Diploma Program (D55280) Summary	**Credit Hours**
General Education	6
Major Hours	30
Other Required Hours	0-4
Total Credit Hours Required	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 Developmental 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 Descriptions

ACA Academic Related ... 168
ACC Accounting ... 168
AHR Air Conditioning, Heating, and Refrigeration ... 169
ALT Alternative Energy Technology ... 170
ANT Anthropology ... 170
ARC Architecture ... 170
ART Art ... 171
AST Astronomy ... 173
ATR Automation Training ... 174
AUT Automotive ... 174
BIO Baking and Pastry Arts ... 177
BPA Biology ... 175
BPR Blueprint Reading ... 178
BDF Brewing, Distillation & Fermentation ... 178
BUS Business Administration ... 179
CAB Cabinetmaking ... 181
CHM Chemistry ... 182
CIV Civil Engineering ... 183
COM Communication ... 188
CET Computer Engineering Technology ... 181
CIS Computer Information Technology ... 191
CSC Computer Programming ... 190
CTI Computer Technology Integration ... 190
CST Construction ... 190
CMT Construction Management ... 187
COE Cooperative Education ... 187
CJC Cosmetology ... 188
CST Criminal Justice ... 184
CUL Culinary Arts ... 192
CCT Cyber Crime ... 181
DBA Database Management Technology ... 194
DDT Dental ... 194
DDT Developmental Disabilities ... 194
DMA Developmental Mathematics ... 197
DRE Developmental Reading and English ... 200
DME Digital Media Technology ... 198
DFT Drafting ... 196
DRA Drama ... 199
ECO Economics ... 200
EDU Education ... 201
ELC Electrical ... 205
ELN Electronics ... 206
EMS Emergency Medical Science ... 207
ENG Engineering ... 204
ENG English ... 209
ETR Entrepreneurship ... 211
ENV Environmental Science ... 211
FVP Film and Video Production ... 214
FIP Fire Protection Technology ... 212
FRE French ... 213
GIS Geographic Information Systems ... 214
GEO Geology ... 214
HEA Health ... 215
HBI Healthcare Business Informatics ... 215
HET Heavy Equipment Technology ... 215
HIS History ... 216
HRM Hospitality Management ... 217
HUM Humanities ... 219
HSE Human Services ... 218
ISC Industrial Science ... 221
CIS Information Systems ... 183
SEC Information Systems Security ... 242
JOU Journalism ... 221
LAR Landscape Architecture ... 221
MAC Machining ... 221
MNT Maintenance ... 228
MKT Marketing and Retailing ... 226
MAT Mathematics ... 222
MEC Mechanical ... 224
MED Medical Assisting ... 225
MLT Medical Laboratory Technology ... 227
SON Medical Sonography ... 243
MHA Mental Health ... 226
MUS Music ... 229
NOS Networking Operating Systems ... 231
NET Networking Technology ... 230
NUR Nursing ... 231
OST Office Administration ... 232
PHM Pharmacy ... 236
PHI Philosophy ... 236
PBT Phlebotomy ... 234
PED Physical Education ... 234
PHS Physical Science ... 237
PHY Physics ... 237
PLA Plastics ... 238
PHS Political Science ... 238
PSY Psychology ... 239
RAD Radiography ... 239
RED Reading ... 241
REL Religion ... 241
SGD Simulation & Game Development ... 242
SWK Social Work ... 247
SOC Sociology ... 242
SPA Spanish ... 244
SAB Substance Abuse ... 241
SUR Surgical Technology ... 246
SRV Surveying ... 245
SST Sustainability Technologies ... 246
MTH Therapeutic Massage ... 229
TRN Transportation ... 247
VET Veterinary Medical Technology ... 248
WAT Water and Wastewater Treatment ... 249
WEB Web Technologies ... 249
WLD Welding ... 251

Academic Related

ACA 115 Success and Study Skills 0 2 1
Prerequisites: None
Corequisites: None
This course provides an orientation to the campus resources and academic skills necessary to achieve educational objectives. Emphasis is placed on an exploration of facilities and services, study skills, library skills, self-assessment, wellness, goal-setting, and critical thinking. Upon completion, students should be able to manage their learning experiences to successfully meet educational goals.

ACA 122 College Transfer Success 1 0 1
Prerequisites: None
Corequisites: None
This course provides preparation for meeting the demands of employment or education beyond the community college experience. Emphasis is placed on strategic planning, gathering information on workplaces or colleges, and developing human interaction skills for professional, academic, and/or community life. Upon completion, students should be able to successfully make the transition to appropriate workplaces or senior institutions.

Accounting

ACC 120 Principles of Financial Accounting 3 2 4
Prerequisites: None
Corequisites: None
This course introduces business decision-making using accounting information systems. Emphasis is placed on analyzing, summarizing, reporting, and interpreting financial information. Upon completion, students should be able to prepare financial statements, understand the role of financial information in decision-making and address ethical considerations. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

ACC 121 Principles of Managerial Accounting 3 2 4
Prerequisites: ACC 120
Corequisites: None
This course 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
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
This course introduces the relevant laws governing business and fiduciary income taxes. Topics include tax law relating to business organizations, electronic research and methodologies, and the use of technology for the preparation of business tax returns. Upon completion, students should be able to analyze basic tax scenarios, research applicable tax law, and complete various business tax forms.

ACC 131 Federal Income Taxes 2 2 3
Prerequisites: None
Corequisites: None
This course provides an overview of federal income taxes for individuals, partnerships, and corporations. Topics include tax law, electronic research and methodologies and the use of technology for the preparation of individual and business tax returns. Upon completion, students should be able to analyze basic tax scenarios, research applicable tax law, and complete federal tax returns for individuals, partnerships, and corporations.

ACC 140 Payroll Accounting 1 2 2
Prerequisites: ACC 115 or ACC 120
Corequisites: None
This course covers federal and state laws pertaining to wages, payroll taxes, payroll tax forms, and journal and general ledger transactions. Emphasis is placed on computing wages; calculating social security, income, and unemployment taxes; preparing appropriate payroll tax forms; and journalizing/posting transactions. Upon completion, students should be able to analyze data, make appropriate computations, complete forms, and prepare accounting entries using appropriate technology.

ACC 150 Accounting Software Appl 1 2 2
Prerequisites: ACC 115 or ACC 120
Corequisites: None
This course introduces microcomputer applications related to accounting systems. Topics include general ledger, accounts receivable, accounts payable, inventory, payroll, and correcting, adjusting, and closing entries. Upon completion, students should be able to use a computer accounting package to solve accounting problems.

ACC 180 Practices in Bookkeeping 3 0 3
Prerequisites: ACC 120
Corequisites: None
This course provides advanced instruction in bookkeeping and record-keeping functions. Emphasis is placed on mastering adjusting entries, correction of errors, depreciation, payroll, and inventory. Upon completion, students should be able to conduct all key bookkeeping functions for small businesses.

***ACC 220 Intermediate Accounting I 3 2 4**
Prerequisites: ACC 120
Corequisites: None
This course is a continuation of the study of accounting principles with in-depth coverage of theoretical concepts and financial statements. Topics include generally accepted accounting principles and extensive analysis of balance sheet components. Upon completion, students should be able to demonstrate competence in the conceptual framework underlying financial accounting, including the application of financial standards.

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When only three numbers are listed, the middle number always designates lab hours.

ACC 240 Gov & Not-For-Profit Acct 3 0 3
Prerequisites: ACC 121
Corequisites: None
This course introduces principles and procedures applicable to governmental and not-for-profit organizations. Emphasis is placed on various budgetary accounting procedures and fund accounting. Upon completion, students should be able to demonstrate an understanding of the principles involved and display an analytical problem-solving ability for the topics covered.

***ACC 269 Auditing & Assurance Services 3 0 3**
Prerequisites: ACC 220
Corequisites: None
This course introduces selected topics pertaining to the objectives, theory and practices in engagements providing auditing and other assurance services. Topics will include planning, conducting and reporting, with emphasis on the related professional ethics and standards. Upon completion, students should be able to demonstrate an understanding of the types of professional services, the related professional standards, and engagement methodology.

Air Conditioning, Heating, and Refrigeration

***AHR 110 Introduction to Refrigeration 2 6 5**
Prerequisites: None
Corequisites: AHR-111
This course introduces the basic refrigeration process used in mechanical refrigeration and air conditioning systems. Topics include terminology, safety, and identification and function of components; refrigeration cycle; and tools and instrumentation used in mechanical refrigeration systems. Upon completion, students should be able to identify refrigeration systems and components, explain the refrigeration process, and use the tools and instrumentation of the trade.

AHR 111 HVACR Electricity 2 2 3
Prerequisites: None
Corequisites: None
This course introduces electricity as it applies to HVACR equipment. Emphasis is placed on power sources, interaction of electrical components, wiring of simple circuits, and the use of electrical test equipment. Upon completion, students should be able to demonstrate good wiring practices and the ability to read simple wiring diagrams.

***AHR 112 Heating Technology 2 4 4**
Prerequisites: None
Corequisites: AHR-111
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: AHR-110
Corequisites: None
This course covers the installation procedures, system operations, and maintenance of residential and light commercial comfort cooling systems. Topics include terminology, component operation, and testing and repair of equipment used to control and produce assured comfort levels. Upon completion, students should be able to use psychometrics, manufacturer specifications, and test instruments to determine proper system operation.

***AHR 114 Heat Pump Technology 2 4 4**
Prerequisites: AHR 110 or AHR 113
Corequisites: None
This course covers the principles of air source and water source heat pumps. Emphasis is placed on safety, modes of operation, defrost systems, refrigerant charging, and system performance. Upon completion, students should be able to understand and analyze system performance and perform routine service procedures.

***AHR120 HVACR Maintenance 1 3 2**
Prerequisites: None
Corequisites: None
This course introduces the basic principles of industrial air conditioning and heating systems. Emphasis is placed on preventive maintenance procedures for heating and cooling equipment and related components. Upon completion, students should be able to perform routine preventive maintenance tasks, maintain records, and assist in routine equipment repairs.

***AHR 130 HVAC Controls 2 2 3**
Prerequisites: AHR 111 or ELC 111
Corequisites: None
This course covers the types of controls found in residential and commercial comfort systems. Topics include electrical and electronic controls, control schematics and diagrams, test instruments, and analysis and troubleshooting of electrical systems. Upon completion, students should be able to diagnose and repair common residential and commercial comfort systems controls.

AHR 160 Refrigerant Certification 1 0 1
Prerequisites: None
Corequisites: AHR-110
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
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
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 211 Residential System Design 2 2 3**
Prerequisites: None
Corequisites: None
This course introduces the principles and concepts of conventional residential heating and cooling system design. Topics include heating and cooling load estimating, basic psychometrics, equipment selection, duct system selection, and system design. Upon completion, students should be able to design a basic residential heating and cooling system.

***AHR 212 Advanced Comfort Systems 2 6 4**
Prerequisites: AHR 114
Corequisites: None
This course covers water-cooled comfort systems, water-source/geothermal heat pumps, and high efficiency heat pump systems including variable speed drives and controls. Emphasis is placed on the application, installation, and servicing of water-source systems and the mechanical and electronic control components of advanced comfort systems. Upon completion, students should be able to test, analyze, and troubleshoot water-cooled comfort systems, water-source/geothermal heat pumps, and high efficiency heat pumps. Hydronic (hot water) and steam heating systems will also be studied.

AHR 213 HVACR Building Code 1 2 2
Prerequisites: None
Corequisites: None
This course covers the North Carolina codes that are applicable to the design and installation of HVACR systems. Topics include current North Carolina codes as applied to HVACR design, service, and installation. Upon completion, students should be able to demonstrate the correct usage of North Carolina codes that apply to specific areas of the HVACR trade.

Alternative Energy Technology

ALT 120 Renewable Energy Tech 2 2 3
Prerequisites: AHR 111, ELC 111, ELC 112 or ELC 139
Corequisites: None
This course provides an introduction to multiple technologies that allow for the production and conservation of energy from renewable sources. Topics include hydroelectric, 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 130 Biogas Operations I 2 0 2
Prerequisite: Enrollment in the Industrial Systems Technology Program
Corequisites: ALT 130A or COE 111
This course introduces the extraction and collection of biogas. Emphasis is placed on gas production and operations. Upon completion, students should be able to demonstrate an understanding of the operation and maintenance of a biogas production facility.

ALT 130A Biogas Operations I Lab 0 3 1
Prerequisite: None
Corequisites: ALT 130
This course provides students with the opportunity to enhance skills associated with industrial operations in the extraction and collection of biogas. Emphasis is placed on location, equipment, components, and facilities associated with biogas production and operations. Upon completion, students should be able to demonstrate an understanding of the equipment, components and facilities necessary to operate a biogas production facility.

ALT 131 Biogas Operations II 2 0 2
Prerequisite: ALT 130
Corequisites: ALT 131A or COE 121
This course introduces the combustion and use of energy from biogas. Emphasis is placed upon gas combustion flaring, air quality, and gas to energy production. Upon completion, students should be able to demonstrate an understanding of gas combustion principles and energy production at a biogas production facility.

ALT 131A Biogas Operations II Lab 0 3 1
Prerequisite: None
Corequisites: ALT 131
This course provides students with the opportunity to enhance skills associated with processes necessary to turn biogas into an effective combustible energy source. Emphasis is placed on industrial equipment, components, and facilities that are necessary for managing biogas processes, combustion flaring, air quality, and gas-to-energy production. Upon completion, students should be able to demonstrate an understanding of biogas processes, equipment, components, and facilities necessary for biogas production

Anthropology

ANT 210 General Anthropology 3 0 3
Prerequisites: None
Corequisites: None
This course introduces the physical, archaeological, linguistic, and ethnological fields of anthropology. Topics include human origins, genetic variations, archaeology, linguistics, primatology, and contemporary cultures. Upon completion, students should be able to demonstrate an understanding of the four major fields of anthropology. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

ANT 220 Cultural Anthropology 3 0 3
Prerequisites: None
Corequisites: None
This course introduces the nature of human culture. Emphasis is placed on cultural theory, methods of fieldwork, and cross-cultural comparisons in the areas of ethnology, language, and the cultural past. Upon completion, students should be able to demonstrate an understanding of basic cultural processes and how cultural data are collected and analyzed. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

ANT 240 Archaeology 3 0 3
Prerequisites: None
Corequisites: None
This course introduces the scientific study of the unwritten record of the human past. Emphasis is placed on the process of human cultural evolution as revealed through archaeological methods of excavation and interpretation. Upon completion, students should be able to demonstrate an understanding of how archaeologists reconstruct the past and describe the variety of past human cultures. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

Architecture

ARC 111 Intro to Arch Technology 1 6 3
Prerequisites: None
Corequisites: None
This course introduces basic architectural drafting techniques, lettering, use of architectural and engineer scales, and sketching. Topics include orthographic, axonometric, and oblique drawing techniques using architectural plans, elevations, sections, and details; reprographic techniques;

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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
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
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
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 210 Intro to Sustain Design 1 3 2
Prerequisites: ARC 111
Corequisites: None
This course introduces concepts and principles related to sustainable site development and architectural design. Topics include low impact and sustainable site development, water efficiency, energy efficiency, material and resource management, indoor environmental quality, and return on investment. Upon completion, students should be able to articulate and integrate sustainable design principles into site and architectural design.

ARC 230 Environmental Systems 3 3 4
Prerequisites: ARC 111 and MAT 121, MAT 151, MAT 161, MAT 171, or MAT 175
Corequisites: None
This course introduces plumbing, mechanical (HVAC), and electrical systems for the architectural environment. Topics include basic plumbing, mechanical, and electrical systems for residential and/or commercial buildings with an introduction to selected code requirements. Upon completion, students should be able to perform related calculations.

ARC 240 Site Planning 2 2 3
Prerequisites: ARC 111 or LAR 111
Corequisites: None
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
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
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
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
This course covers the development of art forms from the Renaissance to the present. Emphasis is placed on content, terminology, design, and style. Upon completion, students should be able to demonstrate an historical understanding of art as a product reflective of human social development. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

ART 121 Two-Dimensional Design 0 6 3
Prerequisites: None
Corequisites: None
This course introduces the elements and principles of design as applied to two-dimensional art. Emphasis is placed on the structural elements, the principles of visual organization, and the theories of color mixing and interaction. Upon completion, students should be able to understand and use critical and analytical approaches as they apply to two-dimensional visual art. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

ART 122 Three-Dimensional Design 0 6 3
Prerequisites: None
Corequisites: None
This course introduces basic studio problems in three-dimensional visual design. Emphasis is placed on the structural elements and organizational principles as applied to mass and space. Upon completion, students should be able to apply three-dimensional design concepts. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

ART 131 Drawing I 0 6 3
Prerequisites: None
Corequisites: None
This course introduces the language of drawing and the use of various drawing materials. Emphasis is placed on drawing techniques, media, and graphic principles. Upon completion, students should be able to demonstrate competence in the use of graphic form and various drawing processes. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

ART 132 Drawing II 0 6 3
Prerequisites: ART 131
Corequisites: None
This course continues instruction in the language of drawing and the use of various materials. Emphasis is placed on experimentation in the use of drawing techniques, media, and graphic materials. Upon completion, students should be able to demonstrate increased competence in the expressive use of graphic form and techniques. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

ART 171 Computer Art I 0 6 3
Prerequisites: None
Corequisites: None
This course introduces the use of the computer as a tool for solving visual problems. Emphasis is placed on fundamentals of computer literacy and design through bit-mapped image manipulation. Upon completion, students should be able to demonstrate an understanding of paint programs, printers, and scanners to capture, manipulate, and output images. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

ART 231 Printmaking I 0 6 3
Prerequisites: None
Corequisites: None
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 pre-major and/or elective course requirement.

ART 240 Painting I 0 6 3
Prerequisites: ART 121 or ART 131 or Department Chair's approval of student's art portfolio to replace prerequisites
Corequisites: None
This course introduces the language of painting and the use of various painting materials. Emphasis is placed on the understanding and use of various painting techniques, media, and color principles. Upon completion, students should be able to demonstrate competence in the use of creative processes directed toward the development of expressive form. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

ART 241 Painting II 0 6 3
Prerequisites: ART 240
Corequisites: None
This course provides a continuing investigation of the materials, processes, and techniques of painting. Emphasis is placed on the exploration of expressive content using a variety of creative processes. Upon completion, students should be able to demonstrate competence in the expanded use of form and variety. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

ART 244 Watercolor 0 6 3
Prerequisites: ART 121 or ART 131 or Department Chair's approval of student's art portfolio to replace prerequisites
Corequisites: None
This course introduces basic methods and techniques used in watercolor. Emphasis is placed on application, materials, content, and individual expression. Upon completion, students should be able to demonstrate a variety of traditional and nontraditional concepts used in watercolor media. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

ART 260 Photography Appreciation 3 0 3
Prerequisites: None
Corequisites: None
This course introduces the origins and historical development of photography. Emphasis is placed on the study of composition and history of photography as an art form. Upon completion, students should be able to recognize and produce, using color transparencies, properly exposed, well-composed photographs. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

ART 261 Photography I 0 6 3
Prerequisites: None
Corequisites: None
This course introduces photographic equipment, theory, and processes. Emphasis is placed on camera operation, composition, darkroom technique, and creative expression. Upon completion, students should be able to successfully expose, develop, and print a well-conceived composition. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

ART 264 Digital Photography I 1 4 3
Prerequisites: None
Corequisites: None
This course introduces digital photographic equipment, theory and processes. Emphasis is placed on camera operation, composition, computer photo manipulation and creative expression. Upon completion, students should be able to successfully expose, digitally manipulate, and print a well-conceived composition. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

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ART 265 Digital Photography II 1 4 3
Prerequisites: Art 264
Corequisites: None
This course provides exploration of the concepts and processes of photo manipulation through complex composite images, special effects, color balancing and image/text integration. Emphasis is placed on creating a personal vision and style. Upon completion, students should be able to produce well-executed images using a variety of photographic and photo manipulative approaches. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

ART 266 Videography I 0 6 3
Prerequisites: None
Corequisites: None
This course introduces various aspects of basic video production including concept development, scripting, camera operation, and post-production. Emphasis is placed on creative expression, camera handling, story boarding and editing. Upon completion, students should be able to demonstrate a basic understanding of video camera operation and production techniques. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

ART 267 Videography II 0 6 3
Prerequisites: ART 266
Corequisites: None
This course is designed to provide a framework for the production of a long-term video project. Emphasis is placed on realization of the unique creative vision. Upon completion, students should be able to produce a thematically coherent, edited video with sound and titling. This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.

ART 271 Computer Art II 0 6 3
Prerequisites: Art 171
Corequisites: None
This course includes advanced computer imaging techniques. Emphasis is placed on creative applications of digital technology. Upon completion, students should be able to demonstrate command of computer systems and applications to express their personal vision. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

ART 275 Intro to Commercial Art 0 6 3
Prerequisites: Art 171
Corequisites: None
This course introduces the materials and techniques used in creative layout design for publication. Emphasis is placed on design for advertising in a variety of techniques and media including computer graphics. Upon completion, students should be able to demonstrate competence in manual camera-ready layout design and computer graphics literacy. This course has been approved to satisfy the Comprehensive Articulation Agreement as a pre-major and/or elective course requirement.

ART 281 Sculpture I 0 6 3
Prerequisites: None
Corequisites: None
This course provides an exploration of the creative and technical methods of sculpture with focus on the traditional processes. Emphasis is placed on developing basic skills as they pertain to three-dimensional expression in various media. Upon completion, students should be able to show competence in 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
This course builds on the visual and technical skills learned in ART 281. Emphasis is placed on developing original solutions to sculptural problems in a variety of media. Upon completion, students should be able to express individual ideas using the techniques and materials of sculpture. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

ART 283 Ceramics I 0 6 3
Prerequisites: None
Corequisites: None
This course provides an introduction to three-dimensional design principles using the medium of clay. Emphasis is placed on fundamentals of forming, surface design, glaze application, and firing. Upon completion, students should be able to demonstrate skills in slab and coil construction, simple wheel forms, glaze technique, and creative expression. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

ART 284 Ceramics II 0 6 3
Prerequisites: ART 283
Corequisites: None
This course covers advanced hand building and wheel techniques. Emphasis is placed on creative expression, surface design, sculptural quality, and glaze effect. Upon completion, students should be able to demonstrate a high level of technical competence in forming and glazing with a development of three-dimensional awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

Astronomy

AST 111 Descriptive Astronomy 3 0 3
Prerequisites: None
Corequisites: AST 111A
This course introduces an overall view of modern astronomy. Topics include an overview of the solar system, the sun, stars, galaxies, and the larger universe. Upon completion, students should be able to demonstrate an understanding of the universe around them. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

AST 111A Descriptive Astronomy Lab 0 2 1
Prerequisites: None
Corequisites: AST 111
The course is a laboratory to accompany AST 111. Emphasis is placed on laboratory experiences which enhance the materials presented in AST 111 and which provide practical experience. Upon completion, students should be able to demonstrate an understanding of the universe around them. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

Automation Training

***ATR 112 Introduction to Automation 2 3 3**
Prerequisites: None
Corequisites: None
This course introduces the basic principles of automated manufacturing and describes the tasks that technicians perform on the job. Topics include the history, development, and current applications of robots and automated systems including their configuration, operation, components, and controls. Upon completion, students should be able to understand the basic concepts of automation and robotic systems.

***ATR 212 Industrial Robots 2 3 3**
Prerequisites: ATR 112 or ATR 282
Corequisites: None
Available: As needed
This course covers the operation of advanced industrial robots. Topics include the classification of robots, activators, grippers, work envelopes, computer interfaces, overlapping work envelopes, installation, and programming. Upon completion, students should be able to install, program, and troubleshoot industrial robots.

Automotive

***AUT 116 Engine Repair 2 3 3**
Prerequisites: None
Corequisites: AUT 116A
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
This course is an optional lab to be used as an alternative to co-op placement in meeting the NATEF standards for total hours. 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
This course covers principles of operation, types, and diagnosis/repair of suspension and steering systems to include steering geometry. Topics include manual and power steering systems and standard and electronically controlled suspension and steering systems. Upon completion, students should be able to service and repair steering and suspension components, check and adjust alignment angles, repair tires, and balance wheels.

***AUT 141A Suspension and Steering Systems Lab 0 3 1**
Prerequisites: None
Corequisites: AUT 141
This course is an optional lab for the program that needs to meet NATEF hour standards but does not have a Co-op component in the program. Topics include manual and power steering systems and standard and electronically controlled suspension and steering systems. Upon completion, students should be able to identify steering and suspension problems, service and repair steering and suspension components, check and adjust alignment angles, and repair and balance tires.

***AUT 151 Brake Systems 2 3 3**
Prerequisites: None
Corequisites: AUT 151A
This course covers principles of operation and types, diagnosis, service, and repair of brake systems. Topics include drum and disc brakes involving hydraulic, vacuum boost, hydra-boost, electrically powered boost, and anti-lock and parking brake systems. Upon completion, students should be able to diagnose, service, and repair various automotive braking systems.

***AUT 151A Brake Systems Lab 0 3 1**
Prerequisites: None
Corequisites: AUT 151
This course is an optional lab to be used as an alternative to co-op placement in meeting the NATEF standards for total hours. Topics Include drum and disc brakes involving hydraulic, vacuum-boost, hydra-boost, electrically powered boost, and anti-lock parking brake systems and emergency brake systems technologies. 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
This course covers the introduction, theory of operation, and basic diagnostic procedures required to restore engine performance to today's vehicles equipped with complex engine control systems. Topics include an overview of engine operation, ignition components and systems, fuel delivery, injection components and systems and emission control devices. Upon completion students should be able to describe operation of and diagnose/repair basic ignition, fuel and emission related drivability problems using appropriate test equipment and service information.

***AUT 221 Automatic Transmissions/Transaxles 2 3 3**
Prerequisites: None
Corequisites: AUT 221A
This course covers operation, diagnosis, service, and repair of automatic transmissions/transaxles. Topics include hydraulic, pneumatic, mechanical, and electrical/electronic operation of automatic drive trains and the use of appropriate service tools and equipment. Upon completion, students should be able to explain operational theory, diagnose and repair automatic drive trains.

***AUT 221A Automatic Transmissions/Transaxles Lab 0 3 1**
Prerequisites: None
Corequisites: AUT 221
This course is an optional lab to be used as an alternative to co-op placement in meeting the NATEF standards for total hours. 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
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
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
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
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 110 Principles of Biology 3 3 4
Prerequisites: None
Corequisites: None
This course provides a survey of fundamental biological principles for non-science majors. Emphasis is placed on basic chemistry, cell biology, metabolism, genetics, taxonomy, evolution, ecology, diversity, and other related topics. Upon completion, students should be able to demonstrate increased knowledge and better understanding of biology as it applies to everyday life. Under the Comprehensive Articulation Agreement, this course satisfies the general education Natural Science requirement for the AA and AFA degrees. It does not satisfy the general education Natural Science requirement for the AS degree.

BIO 111 General Biology I 3 3 4
Prerequisites: None
Corequisites: None
This course introduces the principles and concepts of biology. Emphasis is placed on basic biological chemistry, cell structure and function, metabolism and energy transformation, genetics, evolution, classification, and other related topics. Upon completion, students should be able to demonstrate understanding of life at the molecular and cellular levels. This course has been approved for transfer under the Comprehensive Articulation Agreement as a general education course in Natural Science.

BIO 112 General Biology II 3 3 4
Prerequisites: BIO 111
Corequisites: None
This course is a continuation of BIO 111. Emphasis is placed on organisms, biodiversity, plant and animal systems, ecology, and other related topics. Upon completion, students should be able to demonstrate comprehension of life at the organismal and ecological levels. This course has been approved for transfer under the Comprehensive Articulation Agreement as a general education course in Natural Science.

BIO 120 Introductory Botany 3 3 4
Prerequisites: BIO 110 or BIO 111
Corequisites: None
This course provides an introduction to the classification, relationships, structure, and function of plants. Topics include reproduction and development of seed and non-seed plants, levels of organization, form and function of systems, and a survey of major taxa. Upon completion, students should be able to demonstrate comprehension of plant form and function, including selected taxa of both seed and non-seed plants. . This course has been approved for transfer under the Comprehensive Articulation Agreement as a general education course in Natural Science.

BIO 130 Introductory Zoology 3 3 4
Prerequisites: BIO 110 or BIO 111
Corequisites: None
This course provides an introduction to the classification, relationships, structure, and function of major animal phyla. Emphasis is placed on levels of organization, reproduction and development, comparative systems, and a survey of selected phyla. Upon completion, students should be able to demonstrate comprehension of animal form and function including comparative systems of selected groups . This course has been approved for transfer under the Comprehensive Articulation Agreement as a general education course in Natural Science.

BIO 140 Environmental Biology 3 0 3
Prerequisites: None
Corequisites: BIO 140A
This course introduces environmental processes and the influence of human activities upon them. Topics include ecological concepts, population growth, natural resources, and a focus on current environmental problems from scientific, social, political, and economic perspectives. Upon completion, students should be able to demonstrate an understanding of environmental interrelationships and of contemporary environmental issues. . This course has been approved for transfer under the Comprehensive Articulation Agreement as a general education course in Natural Science.

BIO 140A Environmental Biology Lab 0 3 1
Prerequisites: None
Corequisites: BIO 140
This course provides a laboratory component to complement BIO 140. Emphasis is placed on laboratory and field experience. Upon completion, students should be able to demonstrate a practical understanding of environmental interrelationships and of contemporary environmental issues. . This course has been approved for transfer under the Comprehensive Articulation Agreement as a general education course in Natural Science.

BIO 155 Nutrition 3 0 3
Prerequisites: None
Corequisites: None
This course covers the biochemistry of foods and nutrients with consideration of the physiological effects of specialized diets for specific biological needs. Topics include cultural, religious, and economic factors that influence a person's acceptance of food, as well as nutrient requirements of the various life stages. Upon completion, students should be able to identify the functions and sources of nutrients, the mechanisms of digestion, and the nutritional requirements of all age groups. This course has been approved for transfer under the Comprehensive Articulation Agreement as a premajor and/or elective course requirement.

BIO 161 Intro to Human Biology 3 0 3
Prerequisites: None
Corequisites: None
This course provides a basic survey of human biology. Emphasis is placed on the basic structure and function of body systems and the medical terminology used to describe normal and pathological states. Upon completion, students should be able to demonstrate an understanding of normal anatomy and physiology and the appropriate use of medical terminology.

BIO 163 Basic Anatomy and Physiology 4 2 5
Prerequisites: RED 090
Corequisites: None
This course provides a basic study of the structure and function of the human body. Topics include a basic study of the body systems as well as an introduction to homeostasis, cells, tissues, nutrition, acid-base balance, and electrolytes. Upon completion, students should be able to demonstrate a basic understanding of the fundamental principles of anatomy and physiology and their interrelationships. This course has been approved for transfer under the Comprehensive Articulation Agreement as a premajor and/or elective course requirement.

BIO 168 Anatomy and Physiology I 3 3 4
Prerequisites: RED 090
Corequisites: None
This course provides a comprehensive study of the anatomy and physiology of the human body. Topics include body organization, homeostasis, cytology, histology, and the integumentary, skeletal, muscular, and nervous systems, and special senses. Upon completion, students should be able to demonstrate an in-depth understanding of principles of anatomy and physiology and their interrelationships. This course has been approved for transfer under the Comprehensive Articulation Agreement as a premajor and/or elective course requirement.

BIO 169 Anatomy and Physiology II 3 3 4
Prerequisites: BIO 168
Corequisites: None
This course provides a continuation of the comprehensive study of the anatomy and physiology of the human body. Topics include the endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems as well as metabolism, nutrition, acid-base balance, and fluid and electrolyte balance. Upon completion, students should be able to demonstrate an in-depth understanding of principles of anatomy and physiology and their interrelationships This course has been approved for transfer under the Comprehensive Articulation Agreement 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
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 for transfer under the Comprehensive Articulation Agreement as a premajor and/or elective course requirement.

BIO 224 Local Flora Spring 1 2 2
Prerequisites: None
Corequisites: None
This course provides an introduction to the identification of native plants. Emphasis is placed on spring wild flowers. Upon completion, students should be able to identify a variety of spring wild flowers and native plants. This course has been approved for transfer under the Comprehensive Articulation Agreement as a premajor and/or elective course requirement.

BIO 225 Local Flora Summer 1 2 2
Prerequisites: None
Corequisites: None
This course provides an introduction to the identification of native plants. Emphasis is placed on summer wild flowers. Upon completion, students should be able to identify a variety of summer wild flowers and native plants. This course has been approved for transfer as a pre-major and/or elective course requirement.

BIO 226 Local Flora Fall 1 2 2
Prerequisites: None
Corequisites: None
This course provides an introduction to the identification of native plants. Emphasis is placed on fall wild flowers. Upon completion, students should be able to identify a variety of fall wild flowers and native plants. This course has been approved for transfer under the Comprehensive Articulation Agreement as a premajor and/or elective course requirement.

BIO 250 Genetics 3 3 4
Prerequisites: BIO 112
Corequisites: None
This course covers principles of prokaryotic and eukaryotic cell genetics. Emphasis is placed on the molecular basis of heredity, chromosome structure, patterns of Mendelian and non-Mendelian inheritance, evolution, and biotechnological applications. Upon completion, students should be able to

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recognize and describe genetic phenomena and demonstrate knowledge of important genetic principles. This course has been approved for transfer under the Comprehensive Articulation Agreement as a premajor and/or elective course requirement.

BIO 271 Pathophysiology 3 0 3
Prerequisites: Select One: BIO 163, BIO 166, BIO 169
Corequisites: None
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 for transfer under the Comprehensive Articulation Agreement as a premajor 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
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 for transfer under the Comprehensive Articulation Agreement as a premajor 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
This course introduces the basic principles of the preparation and plating of a variety 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
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 classic cakes using the methods of mixing, filling, glazing and icing. Upon completion, students should be able to prepare, assemble and decorate gelatin-based and layered tortes and cakes such as Bavarian, Dobos and Sacher.

***BPA 150 Artisan & Specialty Bread 1 6 4**
Prerequisites: CUL 110, CUL 142 and CUL 160
Corequisites: None
This course provides an advanced study in the art and craft of bread making. Topics include pertinent formulas and techniques associated with naturally leavened loaves, hearth breads, focaccia, flat breads, and other breads utilizing a variety of grains. Upon completion, students should be able to prepare artisan and specialty breads that meet or exceed the expectations of restaurant and retail publics.

***BPA 210 Cake Design & Decorating 1 4 3**
Prerequisites: CUL 110 and CUL 160
Corequisites: None
This course covers advanced concepts in the design and decoration of wedding cakes and other specialty cakes. Topics include baking, filling and assembling cakes; cake design; finishing techniques utilizing gum paste, fondant, and royal icing; and advanced piping skills. Upon completion, students should be able to design, create, finish and evaluate the quality of wedding and specialty cakes.

***BPA 220 Confection Artistry 1 6 4**
Prerequisites: BPA 240, CUL 110 and CUL 160
Corequisites: None
This course introduces the principles and techniques of decorative sugar work and confectionary candy. Topics include nougat, marzipan modeling, pastillage and cocoa painting, confection candy and a variety of sugar techniques including blown, spun, poured and pulled. Upon completion, students should be able to prepare edible centerpieces and confections to enhance dessert buffets and plate presentations.

***BPA 230 Chocolate Artistry 1 4 3**
Prerequisites: BPA 240, CUL 110 and CUL 160
Corequisites: None
This course provides a study in the art and craft of chocolate. Topics include chocolate tempering, piping, and 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 evaluate tempered 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, COE 112, CUL 110 and CUL 160
Corequisites: None
This course provides a study in the elements and principles of design as they relate to plated desserts. Topics include plate composition, portioning, flavor pairings, textures, temperatures, eye appeal, balance, color harmony and plate decorating/painting techniques such as stenciling and chocolate striping. 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: BPA 150, COE 112, CUL 110 and CUL 160
Corequisites: None
This course is designed to merge artistry and innovation with the practical baking and pastry techniques utilized in a production setting. Emphasis is placed on quantity bread and roll-in dough production, plated and platter presentations, seasonal/theme product utilization and cost effectiveness. Upon completion, students should be able to plan, prepare and evaluate breads and desserts within a commercial environment and determine production costs and selling prices.

***BPA 260 Pastry & Baking Marketing 2 2 3**
Prerequisites: BPA 150, BPA 210, BPA 240, BPA 250, and COE 112
Corequisites: BPA 220, BPA 230, and BPA 250
This course is designed to cover the marketing concepts and merchandising trends utilized in bakery and pastry operations. Emphasis is placed on menu planning, pricing products/strategies, resale and wholesale distribution methods, legal implications, and advertising techniques. Upon completion, students should be able to create a marketing plan that will serve as a basis for a capstone experience.

Blueprint Reading

BPR 111 Blueprint Reading 1 2 2
Prerequisites: None
Corequisites: None
This course introduces the basic principles of blueprint reading. Topics include line types, orthographic projections, dimensioning methods, and notes. Upon completion, students should be able to interpret basic blueprints and visualize the features of a part.

BPR 121 Blueprint Reading: Mechanical 1 2 2
Prerequisites: BPR 111 or MAC 131
Corequisites: None
This course covers the interpretation of intermediate blueprints. Topics include tolerancing, auxiliary views, sectional views, and assembly drawings. Upon completion, students should be able to read and interpret a mechanical working drawing.

BPR 130 Blueprint Reading/Construction 1 2 2
Prerequisites: None
Corequisites: None
This course covers the interpretation of blueprints and specifications that are associated with the construction trades. Emphasis is placed on interpretation of details for foundations, floor plans, elevations, and schedules. Upon completion, students should be able to read and interpret a set of construction blueprints.

Brewing, Distillation & Fermentation

(pending state and SACS approval)

BDF 110 Fermentation Production 2 4 4
Prerequisites: BDF 111, BDF 114, BDF 125
Corequisites: None
This course introduces students to the basic methodologies used in fermentation. Emphasis is placed on the production of fermented products including ingredients, techniques, fermentation management, storage and sanitation. Upon completion, students should be able to design/produce pilot scale products to demonstrate how material selection and process conditions can generate different kinds/qualities of products.

BDF 111 BDF Safety & Sanitation 3 2 4
Prerequisites: None
Corequisites: None
This course covers sanitation, handling and safety with fermentation products, facilities and equipment. Emphasis is placed on the proper chemicals, their selection, handling and storage for sanitation control within the fermentation environment. Upon completion, students should be able to safely maintain quality and stability of fermentation products.

BDF 114 Craft Beer Brewing 1 3 2
Prerequisites: BDF 125
Corequisites: BDF 111
This course introduces entry level skills in craft beer brewing. Topics include recipe development, basic sanitation, techniques and equipment used in the production of small batch (5 gallon or less) of craft beer. Upon completion, students should be able to demonstrate how to produce small batches of craft beer and be able to extrapolate concepts to larger future production.

BDF 115 Applied Craft Bev Microbiology 3 2 4
Prerequisites: BDF 111, CHM 130, CHM 130A
Corequisites: None
This course provides an introduction to microbiology and laboratory practices in the brewing industry. Emphasis is placed on yeast biology, fermentation, microorganisms in brewery's/distillation and sanitation. Upon completion, students should be able to demonstrate an understanding of microbiology, laboratory techniques, and commonly used analysis methodologies applied in the brewing industry.

BDF 125 Bev Tech & Calculations 1 3 2
Prerequisites: DMA 080 or placement
Corequisites: None
This course introduces technology and mathematical calculations used in craft beverage production. Emphasis is placed on equipment and technology relating to scheduling/record keeping, and recipe development/alcohol control and ingredient usage calculations. Upon completion, students should be able to identify/demonstrate the technology and equipment used in craft beverage production and recipe development.

BDF 170 Bev Tour & Tasting Mgmt 2 2 3
Prerequisites: None
Corequisites: None
This course covers the role of craft beverage as a destination attraction. Emphasis is placed on developing, marketing and managing the craft beverage experience including customer service, special events and tasting room operations. Upon completion, students should be able to demonstrate tasting room management for craft beverages and its application to tourism and economic development.

BDF 175 Distillation Operations 2 4 4
Prerequisites: BDF 230, BDF 250
Corequisites: None
This course covers the principles and production techniques involved in the distillation of grains, fruits and other carbohydrates associated with craft beverage distillation. Emphasis is placed on materials/processing, fermentation applications, distillation technology, sensory evaluation, quality control, engineering and craft distillery management. Upon completion, students should be able to demonstrate an understanding of distillation operations/management and the impact of sanitation, fermentation, maturation and aging in the production of distillations.

BDF 180 Sensory Evaluation 2 3 3
Prerequisites: None
Corequisites: None
This course introduces the visual, olfactory and gustatory parameters used in the evaluation of beer and distillery products. Emphasis is placed on aromas, finish, flavor/taste interactions and factors affecting product quality, descriptive analysis/model systems, judging systems, set-up and operation for beverage competitions. Upon completion, students should be able to demonstrate the fundamental principles/practices in sensory analysis and identify elements that influence sensory qualities of particular craft beverages.

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BDF 215 Legal Issues-Fermentation 3 0 3
Prerequisites: None
Corequisites: None
This course covers the laws and regulatory environment particular to the brewing, distillation and fermentation industry. Emphasis is placed on social/ethical responsibilities and the state/federal regulations including licensing, taxation, labeling, record keeping, permits, inspections and laws regarding interstate and international commerce. Upon completion, students should be able to demonstrate an understanding of the laws and regulations that influence the brewing, distillation and fermentation industry.

BDF 230 Advanced Brewing 2 4 4
Prerequisites: BDF 110, BDF 111, BDF 115
Corequisites: BDF 250
This course covers advanced brewing processes utilizing the equipment of an on-site brewery and fermentation facility. Topics include advanced beer making processes, analysis/monitoring of fermentation, specialty beer production, quality control, sustainable practices and facilities operations and management. Upon completion, students should understand and demonstrate the proper applications of high volume brewing in a production facility.

BDF 240 Seasonal Beer Production 2 4 4
Prerequisites: BDF 230, BDF 250
Corequisites: None
This course covers the brewing of seasonal and specialty beers using advanced brewing techniques. Topics include original recipe development, lab analysis, production techniques and packaging. Upon completion students should be able to develop original recipes for seasonal and specialty beers, and provide analysis, production and packaging.

BDF 250 Packaging, Materials, & Quality 2 3 3
Prerequisites: None
Corequisites: BDF 230
This course covers the practices associated with packaging, including canning, bottling, box presentations and kegging of beer and distilled products. Emphasis is placed on techniques related to expansion of the product shelf life which may include container selection, temperature/light control, and labeling, capping and sealing option. Upon completion, students should be able to demonstrate and perform practical operations critical to packaging.

BDF 261 Bev Marketing & Sales 3 0 3
Prerequisites None
Corequisites: None
This course provides an understanding of the planning and resources required to market grains/hops/fruit and brewed or distilled products. Emphasis is placed on the nature of the craft beverage market including industry/consumer trends, economic, legal, and social considerations including branding, pricing, promotion and distribution. Upon completion, students should be able to demonstrate a basic proficiency of the marketing principles and practices for craft beverages and the grains/hops/fruit from which they are produced.

BDF 261 A Bev Marketing & Sales Lab 0 2 1
Prerequisites None
Corequisites: None
This course provides laboratory experience for enhancing student skills in the responsibilities and activities encountered in the marketing of grains/hops/fruit and brewed or distilled products. Emphasis is placed on the nature of the craft beverage market including industry/consumer trends, economic, legal, and social considerations including branding, pricing, promotion and distribution. Upon completion, students should be able to demonstrate a basic proficiency of the marketing principles and practices for craft beverages and the grains/hops/fruit from which they are produced.

BDF 270 Craft Beverage Business Lab 0 6 2
Prerequisites: BDF 110, BDF 111
Corequisites: BDF 115
This course covers concepts of management, production, marketing and economics through hands-on experience in an on-site brewery/fermentation facility. Topics include management/control systems, marketing/distribution and product development/evaluation. Upon completion, students should be able to craft and market fermented beverages using appropriate management and production techniques.

Business Administration

BUS 110 Introduction to Business 3 0 3
Prerequisites: None
Corequisites: None
This course provides a survey of the business world. Topics include the basic principles and practices of contemporary business. Upon completion, students should be able to demonstrate an understanding of business concepts as a foundation for studying other business subjects. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

BUS 115 Business Law I 3 0 3
Prerequisites: None
Corequisites: None
This course introduces the ethics and legal framework of business. Emphasis is placed on contracts, negotiable instruments, Uniform Commercial Code, and the working of the court systems. Upon completion, students should be able to apply ethical issues and laws covered to selected business decision-making situations. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

BUS 116 Business Law II 3 0 3
Prerequisites: BUS 115
Corequisites: None
This course continues the study of ethics and business law. Emphasis is placed on bailments, sales, risk-bearing, forms of business ownership, and copyrights. Upon completion, students should be able to apply ethical issues and laws covered to selected business decision-making situations.

BUS 135 Principles of Supervision 3 0 3
Prerequisites: None
Corequisites: None
This course introduces the basic responsibilities and duties of the supervisor and his/her relationship to higher-level supervisors, subordinates, and associates. Emphasis is placed on effective utilization of the work force and understanding the role of the supervisor. Upon completion, students should be able to apply supervisory principles in the work place.

***BUS 137 Principles of Management 3 0 3**
Prerequisites: None
Corequisites: None
This course is designed to be an overview of the major functions of management. Emphasis is placed on planning, organizing, controlling, directing, and communicating. Upon completion, students should be able to work as contributing members of a team utilizing these functions of management. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

BUS 147 Business Insurance 3 0 3
Prerequisites: None
Corequisites: None
This course surveys the basic concepts of risk management. Topics include principles and applications of health, property, life, and casualty insurance. Upon completion, students should be able to evaluate different insurance needs and assist an organization in acquiring adequate insurance coverage.

BUS 151 People Skills 3 0 3
Prerequisites: None
Corequisites: None
This course introduces the basic concepts of identity and communication in the business setting. Topics include self-concept, values, communication styles, feelings and emotions, roles versus relationships, and basic assertiveness, listening, and conflict resolution. Upon completion, students should be able to distinguish between unhealthy, self-destructive, communication patterns and healthy, non-destructive, positive communication patterns.

BUS 153 Human Resource Management 3 0 3
Prerequisites: None
Corequisites: None
This course introduces the functions of personnel/human resource management within an organization. Topics include equal opportunity and the legal environment, recruitment and selection, performance appraisal, employee development, compensation planning, and employee relations. Upon completion, students should be able to anticipate and resolve human resource concerns.

BUS 175 Contract Negotiations 3 0 3
Prerequisites: None
Corequisites: None
This course covers theory, strategies, techniques and tactics for negotiating contracts, and principles and practices of negotiations for government, corporate or institutional procurements. Topics include preparation and conduct of negotiations and methods of dealing with situations under different types of negotiations. Upon completion, students should be able to effectively negotiate contracts.

BUS 217 Employment Law and Regs 3 0 3
Prerequisites: None
Corequisites: None
This course introduces the principle laws and regulations affecting public and private organizations and their employees or prospective employees. Topics include fair employment practices, EEO, affirmative action, and employee rights and protections. Upon completion, students should be able to evaluate organization policy for compliance and assure that decisions are not contrary to law.

BUS 225 Business Finance 2 2 3
Prerequisites: ACC 120
Corequisites: None
This course provides an overview of business financial management. Emphasis is placed on financial statement analysis, time value of money, management of cash flow, risk and return, and sources of financing. Upon completion, students should be able to interpret and apply the principles of financial management.

BUS 234 Training and Development 3 0 3
Prerequisites: None
Corequisites: None
This course covers developing, conducting, and evaluating employee training with attention to adult learning principles. Emphasis is placed on conducting a needs assessment, using various instructional approaches, designing the learning environment, and locating learning resources. Upon completion, students should be able to design, conduct, and evaluate a training program.

***BUS 239 Bus Applications Seminar 1 2 2**
Prerequisites: ACC 120, BUS 115, BUS 137, MKT 120 and either ECO 151, ECO 251 or ECO 252
Corequisites: None
This course is designed as a capstone course for Business Administration majors. Emphasis is placed on decision making in the areas of management, marketing, production, purchasing, and finance. Upon completion, students should be able to apply the techniques, processes, and vital professional skills needed in the work place.

BUS 240 Business Ethics 3 0 3
Prerequisites: None
Corequisites: None
This course introduces contemporary and controversial ethical issues that face the business community. Topics include moral reasoning, moral dilemmas, law and morality, equity, justice and fairness, ethical standards, and moral development. Upon completion, students should be able to demonstrate an understanding of their moral responsibilities and obligations as members of the workforce and society.

BUS 255 Org Behavior in Business 3 0 3
Prerequisites: None
Corequisites: None
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 & Per Plan 3 0 3
Prerequisites: None
Corequisites: None
This course introduces the basic principles involved in managing the employment process. Topics include personnel planning, recruiting, interviewing and screening techniques, maintaining employee records; and voluntary and involuntary separations. Upon completion, students should be able to acquire and retain employees who match position requirements and fulfill organizational objectives. 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
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

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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
This course provides students in the Human Resource Management concentration the opportunity to reinforce their learning experiences from preceding HRM courses. Emphasis is placed on application of day-to-day HRM functions by completing in-basket exercises and through simulations. Upon completion, students should be able to determine the appropriate actions called for by typical events that affect the status of people at work. 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 or ENG 110
Corequisites: None
This course is designed to develop skills in writing business communications. Emphasis is placed on business reports, correspondence, and professional presentations. Upon completion, students should be able to communicate effectively in the workplace.

BUS 270 Professional Development 3 0 3
Prerequisites: None
Corequisites: None
This course provides basic knowledge of self-improvement techniques as related to success in the professional world. Topics include positive human relations, job-seeking skills, and projecting positive self-image. Upon completion, students should be able to demonstrate competent personal and professional skills necessary to get and keep a job.

BUS 280 REAL Small Business 4 0 4
Prerequisites: None
Corequisites: None
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 119 Cabinetry/Millworking 4 9 7
Prerequisites: None
Corequisites: None
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.

Cyber Crime

CCT 110 Introduction to Cyber Crime 3 0 3
Prerequisites: None
Corequisites: None
This course introduces and explains the various types of offenses that qualify as cyber crime activity. Emphasis is placed on identifying cyber crime activity and the response to these problems from both the private and public domains. Upon completion, students should be able to accurately describe and define cyber crime activities and select an appropriate response to deal with the problem.

CCT 121 Computer Crime Investigation 3 2 4
Prerequisites: None
Corequisites: None
This course introduces the fundamental principles of computer crime investigation processes. Topics include crime scene/incident processing, information gathering techniques, data retrieval, collection and preservation of evidence, preparation of reports and court presentations. Upon completion, students should be able to identify cyber crime activity and demonstrate proper investigative techniques to process the scene and assist in case prosecution.

CCT 231 Technology Crimes and Law 3 0 3
Prerequisites: None
Corequisites: None
This course covers the applicable technological laws dealing with the regulation of cyber security and criminal activity. Topics include an examination of state, federal and international laws regarding cyber crime with an emphasis on both general and North Carolina statutes. Upon completion, students should be able to identify the elements of cyber crime activity and discuss the trends of evolving laws.

Computer Engineering Technology

CET 111 Computer Upgrade/Repair I 2 3 3
Prerequisites: DMA 030 and RED 080 or placement
Corequisites: None
This course covers repairing, servicing, and upgrading computers and peripherals in preparation for industry certification. Topics include CPU/memory/bus identification, disk subsystems, hardware/software installation/configuration, common device drivers, data recovery, system maintenance, and other related topics. Upon completion, students should be able to safely repair and/or upgrade computer systems to perform within specifications.

CET 125 Voice and Data Cabling 2 3 3
Prerequisites: None
Corequisites: None
This course provides an understanding of the industry and its worldwide standards, types of media and cabling, physical and logical networks, including signal transmission. Topics include network design documentation, part list set-up, pulling and mounting cable, cable management, wiring closets, patch panel installation and termination including cable testing. Upon completion, students should be able to understand documentation, design, installation and safety issues associated with voice and data cabling.

CET 161 Procedural Programming 2 3 3
Prerequisites: None
Corequisites: None
This course introduces procedural programming for engineering applications. Emphasis is placed on event-driven programming methods, including creating and manipulating data, sequencing, iteration, and blocking of code. Upon completion, students should be able to design, code, test and debug at a beginning level.

CET 211 Computer Upgrade/Repair II 2 3 3
Prerequisites: CET 111
Corequisites: None
This course covers concepts of repair service, and upgrade of computers and peripherals in preparation for industry certification. Topics may include resolving resource conflicts and system bus specifications, configuration and troubleshooting peripherals, operating system configuration and optimization, and other related topics. Upon completion, students should be able to identify and resolve system conflicts and optimize system performance.

CET 212 Integrated Manufacturing Systems 1 3 2
Prerequisites: ELN 237 and (CET 161 or CSC 143)
Corequisites: None
This course covers computer topics related to integrated manufacturing systems common to current manufacturing facilities. Topics include robot programming, automated control systems, PLCs, data communication, and networking in an integrated manufacturing environment, and other related topics. Upon completion, students should be able to program robots using teaching pendants and troubleshoot and maintain network installations related to integrated manufacturing systems.

Chemistry

CHM 092 Fundamentals of Chemistry 3 2 4
Prerequisites: None
Corequisites: None
This course covers fundamentals of chemistry with laboratory applications. Topics include measurements, matter, energy, atomic theory, bonding, molecular structure, nomenclature, balancing equations, stoichiometry, solutions, acids and bases, gases, and basic organic chemistry. Upon completion, students should be able to understand and apply basic chemical concepts and demonstrate basic laboratory skills necessary for success in college-level science courses.

CHM 121 Foundations of Chemistry 3 0 3
Prerequisites: None
Corequisites: CHM 121A
This course is designed for those who have no previous high school chemistry or a grade of C or less in high school chemistry. Topics include matter, structure of the atom, nomenclature, chemical equations, bonding and reactions; mathematical topics include measurements, scientific notation, and stoichiometry. Upon completion, students should be able to demonstrate an understanding of chemical concepts and an ability to solve related problems in subsequent chemistry courses.

CHM 121A Foundations of Chemistry Laboratory 0 2 1
Prerequisites: None
Corequisites: CHM 121
This course is a laboratory for CHM 121. Emphasis is placed on laboratory experiences that enhance materials presented in CHM 121. Upon completion, students should be able to utilize basic laboratory procedures and apply them to chemical principles presented in CHM 121.

CHM 130 General, Organic, and Biochemistry 3 0 3
Prerequisites: High school chemistry or CHM 092
Corequisites: CHM 130A
This course provides a survey of basic facts and principles of general, organic, and biochemistry. Topics include measurement, molecular structure, nuclear chemistry, solutions, acid-base chemistry, gas laws, and the structure, properties, and reactions of major organic and biological groups. Upon completion, students should be able to demonstrate an understanding of fundamental chemical concepts. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

CHM 130A General, Organic, and Biochemistry Lab 0 2 1
Prerequisites: None
Corequisites: CHM 130
This course is a laboratory for CHM 130. Emphasis is placed on laboratory experiences that enhance materials presented in CHM 130. Upon completion, students should be able to utilize basic laboratory procedures and apply them to chemical principles presented in CHM 130. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

CHM 132 Organic and Biochemistry 3 3 4
Prerequisites: CHM 131 and 131A or CHM 151
Corequisites: None
This course provides a survey of major functional classes of compounds in organic and biochemistry. Topics include structure, properties, and reactions of the major organic and biological molecules and basic principles of metabolism. Upon completion, students should be able to demonstrate an understanding of fundamental chemical concepts needed to pursue studies in related professional fields. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

CHM 135 Survey of Chemistry I 3 2 4
Prerequisites: None
Corequisites: None
This course provides an introduction to inorganic chemistry. Emphasis is placed on measurement, atomic structure, bonding, molecular geometry, nomenclature, reactions, the mole concept, stoichiometric calculations, states of matter, and the gas laws. Upon completion, students should be able to demonstrate a basic understanding of chemistry as it applies to other fields. This introductory course series to chemistry emphasizes the practical impact of chemistry and scientific reasoning on society. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

CHM 151 General Chemistry I 3 3 4
Prerequisites: High school chemistry or CHM 092
Corequisites: MAT 161
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.

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CHM 152 General Chemistry II 3 3 4
Prerequisites: CHM 151
Corequisites: None
This course provides a continuation of the study of the fundamental principles and laws of chemistry. Topics include kinetics, equilibrium, ionic and redox equations, acid-base theory, electrochemistry, thermodynamics, introduction to nuclear and organic chemistry, and complex ions. Upon completion, students should be able to demonstrate an understanding of chemical concepts as needed to pursue further study in chemistry and related professional fields. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

CHM 251 Organic Chemistry I 3 3 4
Prerequisites: CHM 152
Corequisites: None
This course provides a systematic study of the theories, principles, and techniques of organic chemistry. Topics include nomenclature, structure, properties, reactions, and mechanisms of hydrocarbons, alkyl halides, alcohols, and ethers; further topics include isomerization, stereochemistry, and spectroscopy. Upon completion, students should be able to demonstrate an understanding of the fundamental concepts of covered organic topics as needed in CHM 252. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

CHM 252 Organic Chemistry II 3 3 4
Prerequisites: CHM 251
Corequisites: None
This course provides continuation of the systematic study of the theories, principles, and techniques of organic chemistry. Topics include nomenclature, structure, properties, reactions, and mechanisms of aromatics, aldehydes, ketones, carboxylic acids and derivatives, amines and heterocyclics; multi-step synthesis will be emphasized. Upon completion, students should be able to demonstrate an understanding of organic concepts as needed to pursue further study in chemistry and related professional fields. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

CHM 271 Biochemical Principles 3 0 3
Prerequisites: CHM 252
Corequisites: None
The course covers fundamental principles of biochemistry. Topics include structures, properties, reactions, and mechanisms of biomacromolecules including amino acids, peptides, proteins, carbohydrates and nucleic acids, enzymatic metabolic pathways, and biochemical genetics. Upon completion, students should be able to demonstrate an understanding of fundamental biochemical processes. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirements.

Information Systems

CIS 110 Introduction to Computers 2 2 3
Prerequisites: Basic computer literacy is necessary. (CTS 060 will provide students the foundation for this course.)
Corequisites: None
This course introduces computer concepts, including fundamental functions and operations of the computer. Topics include identification of hardware components, basic computer operations, security issues, and use of software applications. Upon completion, students should be able to demonstrate an understanding of the role and function of computers and use the computer to solve problems. Microsoft Office will be used in this course; this includes Word, Excel, Access and PowerPoint. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics (Quantitative Option).

CIS 111 Basic PC Literacy 1 2 2
Prerequisites: Basic computer literacy is necessary. (CTS 060 will provide students the foundation for this course.)
Corequisites: None
This course provides an overview of computer concepts. Emphasis is placed on the use of personal computers and software applications for personal and fundamental workplace use. Upon completion, students should be able to demonstrate basic personal computer skills.

CIS 113 Computer Basics 0 2 1
Prerequisites: None
Corequisites: None
This course introduces basic computer usage for non-computers majors. Emphasis is placed on developing basic personal computer skills. Upon completion, students should be able to demonstrate competence in basic computer applications.

CIS 115 Intro to Prog & Logic 2 3 3
Prerequisites: Select One: DMA 040 or placement, MAT 120, MAT 121, MAT 161, MAT 171, MAT 175
Corequisites: None
This course introduces computer programming and problem solving in a structured program logic environment. Topics include language syntax, data types, program organization, problem solving methods, algorithm design, and logic control structures. Upon completion, students should be able to manage files with operating system commands, use top-down algorithm design, and implement algorithmic solutions in a programming language. This course has been approved for transfer under the Comprehensive Articulation Agreement as a general education course in Mathematics (Quantitative Option).

CIS 165 Desktop Publishing I 2 2 3
Prerequisites: CIS 110
Corequisites: None
This course provides an introduction to desktop publishing software capabilities. Emphasis is placed on efficient use of a page layout software package to create, design, and print publications; hardware/software compatibility; and integration of specialized peripherals. Upon completion, students should be able to prepare publications given design specifications.

Civil Engineering

CIV 110 Statics/Strength of Materials 2 6 4
Prerequisites: MAT 121, MAT 161, MAT 171, or MAT 175
Corequisites: None
This course includes vector analysis, equilibrium of force systems, friction, sectional properties, stress/strain, and deformation. Topics include resultants and components of forces, moments and couples, free-body diagrams, shear and moment diagrams, trusses, frames, beams, columns, connections, and combined stresses. Upon completion, students should be able to analyze simple structures.

CIV 111 Soils and Foundations 2 3 3
Prerequisites: CIV 110 or MEC 250
Corequisites: None
This course presents an overview of soil as a construction material using both analysis and testing procedures. Topics include index properties, classification, stress analysis, compressibility, compaction, dewatering, excavation, stabilization, settlement, and foundations. Upon completion, students should be able to perform basic soil tests and analyze engineering properties of soil.

CIV 125 Civil/Surveying CAD 1 6 3
Prerequisites: DFT 119 or DFT 151
Corequisites: None
This course introduces civil/surveying computer-aided drafting (CAD) software. Topics include drawing, editing, and dimensioning commands; plotting; and other related civil/surveying topics. Upon completion, students should be able to produce civil/surveying drawings using CAD software.

CIV 210 Engineering Materials 1 3 2
Prerequisites: None
Corequisites: None
This course covers the behavior and properties of Portland cement and asphaltic concretes and laboratory and field testing. Topics include cementing agents and aggregates; water and admixtures; proportioning, production, placing, consolidation, and curing; and inspection methods. Upon completion, students should be able to proportion concrete mixes to attain predetermined strengths and other properties and perform standard control tests.

CIV 211 Hydraulics and Hydrology 2 3 3
Prerequisites: CIV 110 or MEC 250
Corequisites: None
This course introduces the basic engineering principles and characteristics of hydraulics and hydrology. Topics include precipitation and runoff, fluid statics and dynamics, flow measurement, and pipe and open channel flow. Upon completion, students should be able to analyze and size drainage structures.

CIV 212 Environmental Planning 2 3 3
Prerequisites: CIV 211
Corequisites: None
This course covers water and wastewater technology, erosion and sedimentation control, and other related topics. Topics include collection, treatment, and distribution of water and wastewater and erosion and sedimentation control law. Upon completion, students should be able to demonstrate knowledge of water and wastewater systems and prepare erosion and sedimentation control plans.

CIV 215 Highway Technology 1 3 2
Prerequisites: SRV 111
Corequisites: CIV 211
This course introduces the essential elements of roadway components and design. Topics include subgrade and pavement construction, roadway drawings and details, drainage, superelevation, and N.C. Department of Transportation Standards. Upon completion, students should be able to use roadway drawings and specifications to develop superelevation, drainage, and general highway construction details.

CIV 220 Basic Structural Concepts 1 3 2
Prerequisites: CIV 110 or MEC 250
Corequisites: None
This course covers the historical perspective of structures as well as types, materials, common elements, and mechanical principles of structures. Topics include basic structure shapes, advantages and disadvantages of standard building materials, application of structural concepts, and other related topics. Upon completion, students should be able to demonstrate an understanding of basic structural concepts.

CIV 221 Steel and Timber Design 2 3 3
Prerequisites: CIV 110 or MEC 250
Corequisites: None
This course introduces the basic elements of steel and timber structures. Topics include the analysis and design of steel and timber beams, columns, and connections and the use of appropriate manuals and codes. Upon completion, students should be able to analyze, design, and draw simple steel and timber structures. Successful completion of CIV 220 is recommended before attempting this course.

CIV 222 Reinforced Concrete 2 3 3
Prerequisites: CIV 110 or MEC 250
Corequisites: None
This course introduces the basic elements of reinforced concrete and masonry structures. Topics include analysis and design of reinforced concrete beams, slabs, columns, footings, and retaining walls; load-bearing masonry walls; and ACI manuals and codes. Upon completion, students should be able to analyze and design components of a structure using reinforced concrete and masonry elements and utilize appropriate ACI publications. Successful completion of CIV 220 is recommended before attempting this course.

CIV 230 Construction Estimating 2 3 3
Prerequisites: ARC 111, CIS 110, CIS 111, or EGR 115
Corequisites: None
This course covers quantity take-offs of labor, materials, and equipment and calculation of direct and overhead costs for a construction project. Topics include the interpretation of working drawings and specifications, types of contracts and estimates, building codes, bidding techniques and procedures, and estimating software. Upon completion, students should be able to prepare a detailed cost estimate and bid documents for a construction project.

CIV 240 Project Management 2 3 3
Prerequisites: ARC 111 or EGR 115
Corequisites: None
This course introduces construction planning and scheduling techniques and project management software. Topics include construction safety, operation analysis, construction scheduling, construction control systems, claims and dispute resolutions, project records, and documentation. Upon completion, students should be able to demonstrate an understanding of the roles of construction project participants, maintain construction records, and prepare construction schedules.

CIV 250 Civil Engineering Technology Project 1 3 2
Prerequisites: Department Chair Approval
Corequisites: None
This course includes an integrated team approach to civil engineering technology projects. Emphasis is placed on project proposal, site selection, analysis/design of structures,

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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
This course covers the basic skills and knowledge needed for entry-level employment as a law enforcement officer in North Carolina. Topics are divided into general units of study: legal, patrol duties, law enforcement, communications, investigations, practical application and sheriff-specific. Upon successful completion, the student will be able to demonstrate competence in the topics and areas required for the state comprehensive certification examination.

CJC 111 Introduction to Criminal Justice 3 0 3
Prerequisites: None
Corequisites: None
This course introduces the components and processes of the criminal justice system. Topics include history, structure, functions, and philosophy of the criminal justice system and their relationship to life in our society. Upon completion, students should be able to define and describe the major system components and their interrelationships and evaluate career options. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

CJC 112 Criminology 3 0 3
Prerequisites: None
Corequisites: None
This course introduces deviant behavior as it relates to criminal activity. Topics include theories of crime causation; statistical analysis of criminal behavior; past, present, and future social control initiatives; and other related topics. Upon completion, students should be able to explain and discuss various theories of crime causation and societal response.

CJC 113 Juvenile Justice 3 0 3
Prerequisites: None
Corequisites: None
This course covers the juvenile justice system and related juvenile issues. Topics include an overview of the juvenile justice system, treatment and prevention programs, special areas and laws unique to juveniles, and other related topics. Upon completion, students should be able to identify/discuss juvenile court structure/procedures, function and jurisdiction of juvenile agencies, processing/detention of juveniles, and case disposition.

CJC 114 Investigative Photography 1 2 2
Prerequisites: None
Corequisites: None
This course covers the operation of digital photographic equipment and its application to criminal justice. Topics include the use of digital cameras, storage of digital images, the retrieval of digital Images and the preparation of digital images as evidence. Upon completion, students should be able to demonstrate and explain the role and use of digital photography, image storage and retrieval in criminal Investigations.

CJC 120 Interviews/Interrogations 1 2 2
Prerequisites: None
Corequisites: None
This course covers basic and special techniques employed in criminal justice interviews and interrogations. Emphasis is placed on the interview/interrogation process, including interpretation of verbal and physical behavior and legal perspectives. Upon completion, students should be able to conduct interviews/interrogations in a legal, efficient, and professional manner and obtain the truth from suspects, witnesses, and victims.

CJC 121 Law Enforcement Operations 3 0 3
Prerequisites: None
Corequisites: None
This course introduces fundamental law enforcement operations. Topics include the contemporary evolution of law enforcement operations and related issues. Upon completion, students should be able to explain theories, practices, and issues related to law enforcement operations. 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
This course covers the historical, philosophical, and practical dimensions of community policing. Emphasis is placed on the empowerment of police and the community to find solutions to problems by forming partnerships. Upon completion, students should be able to define community policing, describe how community policing strategies solve problems, and compare community policing to traditional policing.

CJC 131 Criminal Law 3 0 3
Prerequisites: None
Corequisites: None
This course covers the history/evolution/principles and contemporary applications of criminal law. Topics include sources of substantive law, classification of crimes, parties to crime, elements of crimes, matters of criminal responsibility, and other related topics. Upon completion, students should be able to discuss the sources of law and identify, interpret, and apply the appropriate statutes/elements.

CJC 132 Court Procedure and Evidence 3 0 3
Prerequisites: None
Corequisites: None
This course covers judicial structure/process/procedure from incident to disposition, kinds and degrees of evidence, and the rules governing admissibility of evidence in court. Topics include consideration of state and federal courts, arrest, search and seizure laws, exclusionary and statutory rules of evidence, and other related issues. Upon completion, students should be able to identify and discuss procedures necessary to establish a lawful arrest/search, proper judicial procedures, and the admissibility of evidence.

CJC 141 Corrections 3 0 3
Prerequisites: None
Corequisites: None

This course covers the history, major philosophies, components, and current practices and problems of the field of corrections. Topics include historical evolution, functions of the various components, alternatives to incarceration, treatment programs, inmate control, and other related topics. Upon completion, students should be able to explain the various components, processes, and functions of the correctional system. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

CJC 151 Intro to Loss Prevention 3 0 3
Prerequisites: None
Corequisites: None
This course introduces the concepts and methods related to commercial and private security systems. Topics include the historical, philosophical, and legal basis of security, with emphasis on security surveys, risk analysis, and associated functions. Upon completion, students should be able to demonstrate and understand security systems, risk management, and the laws relative to loss prevention.

CJC 160 Terrorism: Underlying Issues 3 0 3
Prerequisites: None
Corequisites: None
This course identifies the fundamental reasons why America is a target for terrorists, covering various domestic/international terrorist groups and ideologies from a historical aspect. Emphasis is placed upon recognition of terrorist crime scenes; weapons of mass destruction; chemical, biological, and nuclear terrorism; and planning consideration involving threat assessments. Upon completion, the student should be able to identify and discuss the methods used in terrorists' activities and complete a threat assessment for terrorists' incidents.

CJC 170 Critical Incident Management for Public Safety3 0 3
Prerequisites: None
Corequisites: None
This course prepares the student to specialize in the direct response, operations, and management of critical incidents. Emphasis is placed upon the theoretical and applied models to understand and manage disasters, terrorism, and school/workplace 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
This course covers ethical considerations and accepted standards applicable to criminal justice organizations and professionals. Topics include ethical systems; social change, values, and norms; cultural diversity; citizen involvement in criminal justice issues; and other related topics. Upon completion, students should be able to apply ethical considerations to the decision-making process in identifiable criminal justice situations.

CJC 213 Substance Abuse 3 0 3
Prerequisites: None
Corequisites: None
This course is a study of substance abuse in our society. Topics include the history and classifications of drug abuse and the social, physical, and psychological impact of drug abuse. Upon completion, students should be able to identify various types of drugs, their effects on human behavior and society, and treatment modalities.

CJC 214 Victimology 3 0 3
Prerequisites: None
Corequisites: None
This course introduces the study of victims. Emphasis is placed on roles/characteristics of victims, victim interaction with the criminal justice system and society, current victim assistance programs, and other related topics. Upon completion, students should be able to discuss and identify victims, the uniqueness of victims' roles, and current victim assistance programs.

CJC 215 Organization and Administration 3 0 3
Prerequisites: None
Corequisites: None
This course introduces the components and functions of organization and administration as it applies to the agencies of the criminal justice system. Topics include operations/functions of organizations; recruiting, training, and retention of personnel; funding and budgeting; communications; span of control and discretion; and other related topics. Upon completion, students should be able to identify and discuss the basic components and functions of a criminal justice organization and its administrative operations.

CJC 221 Investigative Principles 3 2 4
Prerequisites: None
Corequisites: None
This course introduces the theories and fundamentals of the investigative process. Topics include crime scene/incident processing, information gathering techniques, collection/preservation of evidence, preparation of appropriate reports, court presentations, and other related topics. Upon completion, students should be able to identify, explain, and demonstrate the techniques of the investigative process, report preparation, and courtroom presentation.

CJC 222 Criminalistics 3 0 3
Prerequisites: None
Corequisites: None
This course covers the functions of the forensic laboratory and its relationship to successful criminal investigations and prosecutions. Topics include advanced crime scene processing, investigative techniques, current forensic technologies, and other related topics. Upon completion, students should be able to identify and collect relevant evidence at simulated crime scenes and request appropriate laboratory analysis of submitted evidence.

CJC 223 Organized Crime 3 0 3
Prerequisites: None
Corequisites: None
This course introduces the evolution of traditional and non-traditional organized crime and its effect on society and the criminal justice system. Topics include identifying individuals and groups involved in organized crime, areas of criminal activity, legal and political responses to organized crime, and other related topics. Upon completion, students should be able to identify the groups and activities involved in organized crime and the responses of the criminal justice system.

CJC 225 Crisis Intervention 3 0 3
Prerequisites: None
Corequisites: None
This course introduces critical incident intervention and management techniques as they apply to operational criminal justice practitioners. Emphasis is placed on the victim/offender situation as well as job-related high stress, dangerous, or problem-solving citizen contacts. Upon completion, students should be able to provide insightful analysis of emotional, violent, drug-induced, and other critical and/or stressful incidents that require field analysis and/or resolution.

CJC 231 Constitutional Law 3 0 3
Prerequisites: None
Corequisites: None
The course covers the impact of the Constitution of the United States and its amendments on the criminal justice system. Topics include the structure of the Constitution and

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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
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
This course provides an opportunity to exhibit interpersonal and technical skills required for application of criminal justice concepts in contemporary practical situations. Emphasis is placed on critical thinking and integration of theory and practical skills components. Upon completion, students should be able to demonstrate the knowledge required of any entry-level law enforcement officer.

Construction Management

***CMT 210 Professional Construction Supervision 3 0 3**
Prerequisites: None
Corequisites: None
This course introduces the student to the fundamentals of effective supervision emphasizing professionalism through knowledge and applied skills. Topics include safety, planning and scheduling, contract, problem-solving, communications, conflict resolution, recruitment, employment laws and regulations, leadership, motivation, teamwork, discipline, setting objectives, and training. Upon completion, the student should be able to demonstrate the basic skills necessary to be successful as a supervisor in the construction industry.

***CMT 212 Total Safety Performance 3 0 3**
Prerequisites: None
Corequisites: CMT 210
This course covers the importance of managing safety and productivity equally by encouraging people to take individual responsibility for safety and health in the workplace. Topics include safety management, controlling construction hazards, communicating and enforcing policies, OSHA compliance, personal responsibility and accountability, safety planning, training, and personal protective equipment. Upon completion, students should be able to supervise safety at a construction job site and qualify for the OSHA Training Certification.

***CMT 214 Planning and Scheduling 3 0 3**
Prerequisites: CMT 210 and BPR 130
Corequisites: None
This course covers the need for the process of planning construction projects, as well as the mechanics and vocabulary of project scheduling. Topics include project preplanning, scheduling format, planning for production, short interval planning, schedule updating and revising, and computer-based planning and scheduling. Upon completion, the student should be able to understand the need for planning and scheduling, the language and logic of scheduling, and use of planning skills.

***CMT 216 Costs and Productivity 3 0 3**
Prerequisites: CMT 210
Corequisites: None
This course covers the relationships between time, work completed, work-hours spent, schedule duration, equipment hours, and materials used. Topics include production rates, productivity unit rates, work method improvements, and overall total project cost control. Upon completion, the student should be able to demonstrate an understanding of how costs may be controlled and productivity improved on a construction project.

***CMT 218 Human Relations Issues 3 0 3**
Prerequisites: CMT 210
Corequisites: None
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
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
This course description is written by individual colleges.

***COE 121 Co-op Work Experience II 0 0 10 1**
Prerequisites: See Department Chair for prerequisites
Corequisites: None
This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

***COE 122 Co-op Work Experience II 0 0 20 2**
Prerequisites: See Department Chair for prerequisites
Corequisites: None
This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

***COE 212 Work Experience IV 0 0 20 2**
Prerequisites: See Department Chair for prerequisites
Corequisites: None
This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

***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 is written by individual colleges.

Communication

COM 110 Introduction to Communication 3 0 3
Prerequisites: None
Corequisites: None
This course provides an overview of the basic concepts of communication and the skills necessary to communicate in various contexts. Emphasis is placed on communication theories and techniques used in interpersonal group, public, intercultural, and mass communication situations. Upon completion, students should be able to explain and illustrate the forms and purposes of human communication in a variety of contexts. This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts (Substitute).

COM 120 Intro to Interpersonal Communication 3 0 3
Prerequisites: None
Corequisites: None
This course introduces the practices and principles of interpersonal communication in both dyadic and group settings. Emphasis is placed on the communication process, perception, listening, self-disclosure, speech apprehension, ethics, nonverbal communication, conflict, power, and dysfunctional communication relationships. Upon completion, students should be able to demonstrate interpersonal communication skills, apply basic principles of group discussion, and manage conflict in interpersonal communication situations. This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts (Substitute).

COM 140 Intro to Intercultural Communication 3 0 3
Prerequisites: None
Corequisites: None
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 general education core requirement in humanities/fine arts.

COM 150 Intro to Mass Communication 3 0 3
Prerequisites: ENG 111
Corequisites: None
This course introduces print and electronic media and the new information technologies in terms of communication theory and as economic, political, and social institutions. Topics include 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 be able to demonstrate awareness of the pervasive nature of mass media and how media operate in an advanced post-industrial society. This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.

COM 231 Public Speaking 3 0 3
Prerequisites: RED 090
Corequisites: None
This course provides instruction and experience in preparation and delivery of speeches within a public setting and group discussion. Emphasis is placed on research, preparation, delivery, and evaluation of informative, persuasive, and special occasion public speaking. Upon completion, students should be able to prepare and deliver well-organized speeches and participate in group discussion with appropriate audiovisual support. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

Cosmetology

COS 111 Cosmetology Concepts I 4 0 4
Prerequisites: None
Corequisites: COS 112
This course introduces basic cosmetology concepts. Topics include safety, first aid, sanitation, bacteriology, anatomy, diseases and disorders, hygiene, product knowledge, chemistry, ethics, manicures, and other related topics. Upon completion, students should be able to safely and competently apply cosmetology concepts in the salon setting.

COS 112 Salon I 0 24 8
Prerequisites: None
Corequisites: COS 111
This course introduces basic salon services. Topics include scalp treatments, shampooing, rinsing, hair color, design, haircutting, permanent waving, pressing, relaxing, wigs, and other related topics. Upon completion, students should be able to safely and competently demonstrate salon services.

COS 113 Cosmetology Concepts II 4 0 4
Prerequisites: COS 111
Corequisites: COS 114
This course covers more comprehensive cosmetology concepts. Topics include safety, product knowledge, chemistry, manicuring, chemical restructuring, and hair coloring. Upon completion, students should be able to safely and competently apply these cosmetology concepts in the salon setting.

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When only three numbers are listed, the middle number always designates lab hours.

COS 114 Salon II 0 24 8
Prerequisites: COS 112
Corequisites: COS 113
This course provides experience in a simulated salon setting. Topics include basic skin care, manicuring, nail application, scalp treatments, shampooing, rinsing, hair color, design, haircutting, chemical restructuring, pressing, wigs, and other related topics. Upon completion, students should be able to safely and competently demonstrate these salon services.

COS 115 Cosmetology Concepts III 4 0 4
Prerequisites: COS 113
Corequisites: COS 116
This course covers more comprehensive cosmetology concepts. Topics include safety, product knowledge, salon management, salesmanship, skin care, electricity/light therapy, wigs, thermal hair styling, lash and brow tinting, superfluous hair removal, and other related topics. Upon completion, students should be able to safely and competently apply these cosmetology concepts in the salon setting.

COS 116 Salon III 0 12 4
Prerequisites: COS 114
Corequisites: COS 115
This course provides comprehensive experience in a simulated salon setting. Emphasis is placed on intermediate-level of skin care, manicuring, scalp treatments, shampooing, hair color, design, haircutting, chemical restructuring, pressing, and other related topics. Upon completion, students should be able to safely and competently demonstrate these salon services.

COS 117 Cosmetology Concepts IV 2 0 2
Prerequisites: COS 115
Corequisites: COS 118
This course covers advanced cosmetology concepts. Topics include chemistry and hair structure, advanced cutting and design, and an overview of all cosmetology concepts in preparation for the licensing examination. Upon completion, students should be able to demonstrate an understanding of these cosmetology concepts and meet program completion requirements.

COS 118 Salon IV 0 21 7
Prerequisites: COS 116
Corequisites: COS 117
This course provides advanced experience in a simulated salon setting. Emphasis is placed on efficient and competent delivery of all salon services in preparation for the licensing examination and employment. Upon completion, students should be able to demonstrate competence in program requirements and the areas covered on the Cosmetology Licensing Examination and meet entry-level employment requirements.

COS 119 Esthetics Concepts I 2 0 2
Prerequisites: RED 080 or placement
Corequisites: COS 120
This course covers the concepts of esthetics. Topics include orientation, anatomy, physiology, hygiene, sterilization, first aid, chemistry, basic dermatology, and professional ethics. Upon completion, students should be able to demonstrate an understanding of the concepts of esthetics and meet course requirements.

COS 120 Esthetics Salon I 0 18 6
Prerequisites: RED 080 or placement
Corequisites: COS 119
This course covers the techniques of esthetics in a comprehensive experience in a simulated salon setting. Topics include client consultation, facials, body treatments, hair removal, make-up applications, and color analysis. Upon completion, students should be able to safely and competently demonstrate esthetic services on clients in a salon setting.

COS 121 Manicure/Nail Technology I 4 6 6
Prerequisites: RED 080 or placement
Corequisites: None
This course covers techniques of nail technology, hand and arm massage, and recognition of nail diseases and disorders. Topics include OSHA/safety, sanitation, bacteriology, product knowledge, salesmanship, manicures, artificial applications, pedicures, massage, and other related topics. Upon completion, students should be able to safely and competently perform nail care, including manicures, pedicures, massage, decorating, and artificial applications in a salon setting.

COS 125 Esthetics Concepts II 2 0 2
Prerequisites: COS 119
Corequisites: COS 126
This course covers more comprehensive esthetics concepts. Topics include nutrition, business management, makeup and color analysis. Upon completion students should be able to demonstrate an understanding of the advanced esthetics concepts and meet course requirements.

COS 126 Esthetics Salon II 0 18 6
Prerequisites: COS 120
Corequisites: COS 125
This course provides experience in a simulated esthetics setting. Topics include machine facials, aromatherapy, massage therapy, electricity, and apparatus. Upon completion, students should be able to demonstrate competence in program requirements and the areas covered on the Cosmetology licensing examination for Estheticians.

COS 222 Manicure/Nail Tech. II 4 6 6
Prerequisites: COS 121
Corequisites: None
This course covers advanced techniques of nail technology and hand and arm massage. Topics include OSHA/safety, product knowledge, customer service, salesmanship, artificial applications, nail art, and other related topics. Upon completion, students should be able to demonstrate competence necessary for the licensing examination, including advanced nail care, artificial enhancements, and decorations.

COS 260 Design Applications 1 3 2
Prerequisites: COS 115, COS 116
Corequisites: None
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.

COS 271 Instructor Concepts I 5 0 5
Prerequisites: None
Corequisites: COS 272
This course introduces the basic cosmetology instructional concepts. Topics include orientation, theories of education, unit planning, daily lesson planning, laboratory management, student assessment, record keeping, and other related topics. Upon completion, students should be able to identify theories of education, develop lesson plans, demonstrate supervisory techniques, and assess student performance in a classroom setting.

COS 272 Instructor Practicum I 0 21 7
Prerequisites: None
Corequisites: COS 271
This course covers supervisory and instructional skills for teaching entry-level cosmetology students in a laboratory setting. Topics include demonstrations of services, supervision, and entry-level student assessment. Upon completion, students should be able to demonstrate salon services and instruct and objectively assess the entry-level student.

COS 273 Instructor Concepts II 5 0 5
Prerequisites: COS 271, COS 272
Corequisites: COS 274
This course covers advanced cosmetology instructional concepts. Topics include practical demonstrations, lesson planning, lecture techniques, development and administration of assessment tools, record keeping, and other related topics. Upon completion, students should be able to develop lesson plans, demonstrate supervision techniques, assess student performance in a classroom setting, and keep accurate records.

COS 274 Instructor Practicum II 0 21 7
Prerequisites: COS 271, COS 272
Corequisites: COS 273
This course is designed to develop supervisory and instructional skills for teaching advanced cosmetology students in a laboratory setting. Topics include practical demonstrations, supervision, and advanced student assessment. Upon completion, students should be able to demonstrate competence in the areas covered by the Instructor Licensing Examination and meet program completion requirements.

Computer Programming

CSC 134 C++ Programming 2 3 3
Prerequisites: CIS 115
Corequisites: None
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 pre-major and/or elective course requirement.

CSC 151 JAVA Programming 2 3 3
Prerequisites: CIS 115
Corequisites: None
This course introduces computer programming using the JAVA programming language with object-oriented programming principles. Emphasis is placed on event-driven programming methods, including creating and manipulating objects, classes, and using object-oriented tools such as the class debugger. Upon completion students should be able to design, code, test, debug JAVA language programs. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

Construction

CST 111 Construction I 3 3 4
Prerequisites: None
Corequisites: None
This course covers standard and alternative building methods to include wall framing. Topics include safety and footings, foundations, floor framing systems, and wall framing systems commonly used in the construction industry. Upon completion, students should be able to safely erect all framing necessary to begin roof framing.

CST 112 Construction II 3 3 4
Prerequisites: Take CST 111
Corequisites: None
This course covers building methods and materials used to dry-in a building. Topics include safety, ceiling/roof framing applications, roof finishes, windows, and exterior doors. Upon completion, students should be able to safely erect different roof types and properly install window and exterior doors, roofing, and exterior finish materials.

CST 113 Construction III 3 3 4
Prerequisites: Take CST 112
Corequisites: None
This course covers building methods and materials used to complete the interior of a structure. Topics include safety, installation of thermal and acoustical barriers, and interior finishes including millwork, cabinets, interior doors, flooring, and wall treatments. Upon completion, students should be able to safely and accurately install interior treatments including insulation, paneling, drywall, molding, doors, flooring, and cabinetry.

CST-150 Building Science 2 2 3
Prerequisites: None
Corequisites: None
This course introduces concepts and techniques for the design and interaction of the mechanical systems of high performance buildings. Topics include building envelope, heating, ventilation and air conditioning (HVAC), indoor air quality, lighting, plumbing and electrical. Upon completion, students should be able to understand building systems interaction and performance.

CST 211 Construction Surveying 2 3 3
Prerequisites: Select one: MAT 115, MAT 120, MAT 121, MAT 161, MAT 171, MAT 175
Corequisites: None
This course covers field-surveying applications for residential and commercial construction. Topics include building layout and leveling, linear measurement and turning angles, plumbing vertical members, and topographic and utilities surveys. Upon completion, students should be able to properly and accurately use surveying equipment to lay out residential and commercial buildings.

CST-241 Planning/Estimating I 2 2 3
Prerequisites: Take one: BPR-130, MAT-120, or MAT-121
Corequisites: None
This course covers the procedures involved in planning and estimating a residential structure. Topics include labor and equipment with emphasis placed on quantity take-off of materials necessary to construct a residential structure. Upon completion, students should be able to accurately complete a take-off of materials and equipment needs and plan the labor to construct a residential structure.

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CST 244 Sustainable Building Design 2 3 3
Prerequisites: None
Corequisites: None
This course is designed to increase student knowledge about integrating sustainable design principles and green building technologies into mainstream residential construction practices. Emphasis is placed on reducing negative environmental impact and improving building performance, indoor air quality and the comfort of a building's occupants. Upon completion, students should be able to identify principles of green building, environmental efficiency and conservation of natural resources in relation to basic construction practices.

Computer Technology Integration

CTI 240 Virtualization Admin I 1 4 3
Prerequisites: NET 125, NOS 120, and NOS 130
Corequisites: None
This course covers datacenter virtualization concepts. Topics include data storage, virtual network configuration, virtual machine and virtual application deployment. Upon completion, students should be able to perform tasks related to virtual machine and hypervisor installation and configuration. This is the first of two courses that will help prepare students for the VMware Certified Professional exam.

CTI 241 (PL 10-1-12) Virtualization Admin II 1 4 3
Prerequisites: CTI 240
Corequisites: None
This course covers administration of datacenter virtualization infrastructure. Topics include access control, fault tolerance, scalability, resource management, virtual machine migration and troubleshooting. Upon completion, students should be able to perform tasks related to virtualization security, data protection and resource monitoring. This is the second of two courses that will help prepare students for the VMware Certified Professional exam.

Computer Information Technology

CTS 060 Essential Computer Usage 1 2 2
Prerequisites: None
Corequisites: None
This course covers the basic functions and operations of the computer. Topics include identification of components, overview of operating systems and other basic computer operations. Upon completion, students should be able to perform basic computer commands, access files, print documents and complete fundamental application operations.

CTS 115 Info Sys Business Concept 3 0 3
Prerequisites: CIS115, DBA110, WEB115
Corequisites: None
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 pre-major and/or elective course requirement.

CTS 120 Hardware/Software Support 2 3 3
Prerequisites: CIS 110 or CIS 111, and NOS 110
Corequisites: None
This course covers the basic hardware of a personal computer, including installation, operations and interactions with software. Topics include component identification, memory-system, peripheral installation and configuration, preventive maintenance, hardware diagnostics/repair, installation and optimization of system software, commercial programs, system configuration, and device-drivers. Upon completion, students should be able to select appropriate computer equipment and software, upgrade/maintain existing equipment and software, and troubleshoot/repair non-functioning personal computers.

CTS 130 Spreadsheet 2 2 3
Prerequisites: CIS 110 or CIS 111 or OST 137, and DMA 040 or placement
Corequisites: None
This course introduces basic spreadsheet design and development. Topics include writing formulas, using functions, enhancing spreadsheets, creating charts, and printing. Upon completion, students should be able to design and print basic spreadsheets and charts. This course covers advanced functions, charting, macros, databases, and linking.

CTS 135 Integrated Software Intro 2 4 4
Prerequisites: CIS 110 or CIS 111
Corequisites: None
This course instructs students in the Windows or Linux based program suites for word processing, spreadsheet, database, personal information manager, and presentation software. This course prepares students for introductory level skills in database, spreadsheet, personal information manager, word processing, and presentation applications to utilize data sharing. Upon completion, students should be able to design and integrate data at an introductory level to produce documents using multiple technologies.

***CTS 217 Computer Training/Support 2 2 3**
Prerequisites: CIS 110 and DBA 110
Corequisites: None
This course introduces computer training and support techniques. Topics include methods of adult learning, training design, delivery, and evaluation, creating documentation, and user support methods. Upon completion, students should be able to design and implement training and provide continued support for computer users.

CTS 220 Adv Hard/Software Support 2 3 3
Prerequisites: CTS 120
Corequisites: None
This course provides advanced knowledge and competencies in hardware and operating system technologies for computer technicians to support personal computers. Emphasis is placed on: configuring and upgrading; diagnosis and troubleshooting; as well as 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 & Design 3 0 3**
Prerequisites: CIS 115, DBA 110 and Department Chair Approval
Corequisites: None
This course introduces established and evolving methodologies for the analysis, design, and development of an information system. Emphasis is placed on system characteristics, managing projects, prototyping, CASE/OOM tools, and systems development life cycle phases. Upon completion, students should be able to analyze a problem and design an appropriate solution using a combination of tools and techniques.

CTS 287 Emerging Technologies 3 0 3
Prerequisites: CIS 115, DBA 110, WEB 115
Corequisites: None
This course introduces emerging information technologies. Emphasis is placed on evolving technologies and trends in business and industry. Upon completion, students should be able to articulate an understanding of the current trends and issues in emerging technologies for information systems.

***CTS 289 System Support Project 1 4 3**
Prerequisites: CTS 285
Corequisites: None
This course provides an opportunity to complete a significant support project with minimal instructor assistance. Emphasis is placed on written and oral communication skills, project definition, documentation, installation, testing, presentation, and user training. Upon completion, students should be able to complete a project from the definition phase through implementation.

Culinary Arts

CUL 110 Sanitation & Safety 2 0 2
Prerequisites: ENG 080, RED 090 or placement
Corequisites: None
This course introduces the basic principles of sanitation and safety relative 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 the content necessary for successful completion of a nationally recognized food/safety/sanitation exam.

***CUL 110A Sanitation & Safety Lab 0 2 1**
Prerequisites: ENG 080, RED 090 or placement
Corequisites: CUL 110
This course provides a laboratory experience for enhancing student skills in the basic principles of sanitation and safety. Emphasis is placed on 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 practical applications of sanitation and safety procedures in the hospitality industry.

CUL 112 Nutrition for Foodservice 3 0 3
Prerequisites: DMA 030, ENG 080, RED 090 or Placement
Corequisites: None
This course covers the principles of nutrition and its relationship to the foodservice industry. Topics include personal nutrition fundamentals, weight management, exercise, nutritional adaptation/analysis of recipes/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 130 Menu Design 2 0 2**
Prerequisites: CUL 140 and HRM 220
Corequisites: None
This course introduces menu design and its relationship to foodservice operations. Topics include layout, marketing, concept development, dietary concerns, product utilization, target consumers and trends. Upon completion, students should be able to design, create and produce menus for a variety of foodservice settings. This course will examine effective purchasing techniques based on product use.

***CUL 135 Food & Beverage Service 2 0 2**
Prerequisites: Select one: CUL 230, CUL 275, HRM 124
Corequisites: None
This course is designed to cover the practical skills and knowledge necessary for effective food and beverage service in a variety of settings. Topics include greeting/service of guests, dining room set-up, profitability, menu sales and merchandising, service styles and reservations. Upon completion, students should be able to demonstrate competence in human relations and the skills required in the service of foods and beverages.

***CUL 135A Food & Beverage Serv Lab 0 2 1**
Prerequisites: Select one: CUL 230, CUL 275, HRM 124
Corequisites: CUL 135
This course provides a laboratory experience for enhancing student skills in effective food and beverage service. Emphasis is placed on practical experiences including greeting/service of guests, dining room set-up, profitability, menu sales and merchandising, service styles and reservations. Upon completion, students should be able to demonstrate practical applications of human relations and the skills required in the service of foods and beverages.

***CUL 140 Culinary Skills I 2 6 5**
Prerequisites: DMA 030, ENG 080, RED 090 or placement
Corequisites: CUL 110, CUL 110A
This course introduces the fundamental concepts, skills, and techniques in basic cookery, and moist, dry and combination heat. Emphasis is placed on recipe conversion, measurements, terminology, classical knife cuts, safe food/equipment handling, flavorings/seasonings, stocks/sauces/soups, and related topics. Upon completion, students should be able to exhibit the basic cooking skills used in the food service industry. Weekly participation in Global Cuisine buffets, banquets, and a la carte production enhances students' culinary and service skills.

***CUL 142 Fundamentals of Food 2 6 5**
Prerequisites: DMA 030, ENG 080, RED 090 or placement
Corequisites: CUL 110, CUL 110A, and CUL 150 or HRM 124
This course introduces the student to the basic principles of cooking, baking, and kitchen operations. Topics include preparation methods for protein, starch, vegetable/fruit identification, selection, storage, breakfast cookery, breads, sweet dough/pastries, basic fabrication, knife skills, and mise en place. Upon completion, students should be able to execute efficiently a broad range of basic cooking/baking skills as they apply to different stations in foodservice operations. Weekly participation in Global Cuisine buffets, banquets, and a la carte production enhances student service skills.

***CUL 150 Food Science 1 2 2**
Prerequisites: DMA 030, ENG 080, RED 090 or placement
Corequisites: None
This course covers the chemical and physical changes in foods that occur with cooking, handling, and processing. Emphasis is placed on practical application of heat transfer and its effect on color/flavor/texture, emulsification, protein coagulation, leavening agents, viscosity, and gel formation. Upon completion, students should be able to demonstrate an understanding of these principles as they apply to food preparation in an experimental setting.

***CUL 160 Baking I 1 4 3**
Prerequisites: DMA 030, ENG 080, RED 090 or placement
Corequisites: CUL 110
This course covers basic ingredients, techniques, weights and measures, baking terminology, and formula calculations. Topics include yeast/chemically leavened products, laminated

doughs, pastry dough batter, pies/tarts, meringue, custard, cakes and cookies, icings, glazes and basic sauces. Upon completion, students should be able to demonstrate proper scaling and measurement techniques, and prepare and evaluate a variety of bakery products.

***CUL 170 Garde Manger I 1 4 3**
Prerequisites: DMA 030, ENG 080, RED 090 or placement
Corequisites: CUL 110, and CUL 110A
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 present a cold food display and exhibit an understanding of the cold kitchen and its related terminology.

***CUL 214 Wine Appreciation 1 2 2**
Prerequisites: COE 112 or Department Chair Approval
Corequisites: None
This course provides an introduction to information about wine from all the major wine producing regions. Emphasis is placed on the history of wine, production, characteristics, wine list development, laws, purchasing and storing requirements. Upon completion, students should be able evaluate varietal wines and basic food pairings. This course will cover other beverages and legal aspects pertaining to beverage operations.

***CUL 230 Global Cuisines 1 8 5**
Prerequisites: CUL 110, COE 112, CUL 140, CUL 240, CUL 240A
Corequisites: None
This course provides practical experience in the planning, preparation, and presentation of representative foods from a variety of world cuisines. Emphasis is placed on indigenous ingredients and customs, nutritional concerns, and cooking techniques. Upon completion, students should be able to research and execute a variety of international and domestic menus. Weekly participation in buffets, banquets, and a la carte production enhances students' supervisory and technical skills.

***CUL 240 Culinary Skills II 1 8 5**
Prerequisites: CUL 110, CUL 110A, and CUL 140
Corequisites: CUL 240A
This course is designed to further students' knowledge of the fundamental concepts, skills, and techniques involved in basic cookery. Emphasis is placed on meat identification/fabrication, butchery and cooking techniques/methods; appropriate vegetable/starch accompaniments; compound sauces; plate presentation; breakfast cookery; and quantity food preparation. Upon completion, students should be able to plan, execute, and successfully serve entrees with complementary side items. Weekly participation in a la carte production enhances students' culinary and service skills.

***CUL 240A Culinary Skills II Lab 0 3 1**
Prerequisites: CUL 110, CUL 110A, and CUL 140
Corequisites: CUL 240
This course provides a laboratory experience for furthering students' knowledge of the fundamental concepts, skills, and techniques involved in basic cookery. Emphasis is placed on practical applications of meat identification/fabrication; butchery and cooking techniques/methods; appropriate vegetable/starch accompaniments; compound sauces; plate presentation; breakfast cookery; and food preparation. Upon completion, students should be able to demonstrate a basic proficiency in the preparation of entrées and accompaniments.

***CUL 250 Classical Cuisine 1 8 5**
Prerequisites: CIS 110, COE 112, CUL 110, CUL 130, CUL 140, CUL 160, CUL 214, CUL 230 or CUL 275, CUL 240, CUL 270, and HRM 245
Corequisites: CUL 135 and CUL 135A
This course is designed to reinforce the classical culinary kitchen. Topics include the working Grand Brigade of the kitchen, 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 110, CUL 110A, and CUL 160
Corequisites: None
This course is designed to further students' knowledge in ingredients, weights and measures, baking terminology and formula calculation. Topics include classical desserts, frozen desserts, cake and torte production, decorating and icings/glazes, dessert plating and presentation. Upon completion, students should be able to demonstrate pastry preparation, plating, and dessert buffet production skills.

***CUL 270 Garde Manger II 1 4 3**
Prerequisites: CUL 110, CUL 140, CUL 170 and CUL 240
Corequisites: None
This course is designed to further students' knowledge in basic cold food preparation techniques and pantry production. Topics include pâtés, terrines, galantines, decorative garnishing skills, carving, charcuterie, smoking, canapés, hors d'oeuvres, and related food items. Upon completion, students should be able to design, set up, and evaluate a catering/event display to include a cold buffet with appropriate showpieces.

***CUL 273 Career Development 1 0 1**
Prerequisites: ENG 080, RED 090 or placement
Corequisites: None
This course introduces students to career planning/management practices that serve as a foundation for success in the hospitality industry. Emphasis is placed on self assessment, goal/career pathway development and employment strategies such as résumé preparation, interviewing techniques, and developing/utilizing the portfolio as a credential. Upon completion, students should be able to develop a career path leading to an effective job search.

***CUL 275 Catering Cuisine 1 8 5**
Prerequisites: COE 112, CUL 110, CUL 140, CUL 240, CUL 240A
Corequisites: None
This course covers the sequential steps to successful catering that includes sales, client needs, menu planning, purchasing, costing, event pricing, staffing and sanitation concerns. Emphasis is placed on new culinary competencies and skills specific to catering preparation, presentation, and customer service. Upon completion, students should be able to demonstrate proficiency in the successful design and execution of various types of catering events.

***CUL 285 Competition Fundamentals 1 4 3**
Prerequisites: CUL 110, CUL 110A, and CUL 140 or CUL 160
Corequisites: None
This course provides practical experience 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. fdfd

Database Management Technology

DBA 110 Database Concepts 2 3 3
Prerequisites: CIS 110, CIS 111 or CIS 115
Corequisites: None
This course introduces database design and creation using a DBMS product. Emphasis is placed on data dictionaries, normalization, data integrity, data modeling, and creation of simple tables, queries, reports, and forms. Upon completion, students should be able to design and implement normalized database structures by creating simple database tables, queries, reports and forms.

DBA 120 Database Programming I 2 2 3
Prerequisites: CIS 110
Corequisites: None
This course is designed to develop SQL programming proficiency. Emphasis is placed on data definition, data manipulation, and data control statements as well as on report generation. Upon completion, students should be able to write programs which create, update and produce reports.

DBA 210 Database Administration 2 3 3
Prerequisites: DBA 120
Corequisites: None
This course covers database administration issues and distributed database concepts. Topics include database administrator (DBA) goals and functions, backup and recovery, standards and procedures, training, and database security and performance evaluations. Upon completion, students should be able to produce functional DBA documentation and administer a database.

Developmental Disabilities

DDT 110 Developmental Disabilities 3 0 0 3
Prerequisites: None
Corequisites: None
This course identifies the characteristics and causes of various disabilities. Topics include history of service provision, human rights, legislation and litigation, advocacy, and accessing support services. Upon completion, students should be able to demonstrate an understanding of current and historical developmental disability definitions and support systems used throughout the life span. Check with the North Carolina Substance Abuse Professional Practice Board (NCSAPPB) to verify if this course has been approved for training/education credit for substance abuse certification/recertification

Dental

DEN 100 Basic Orofacial Anatomy 2 0 0 2
Prerequisites: None
Corequisites: DEN 111
This course provides a basic introduction to the structures of the head, neck, and oral cavity. Topics include tooth morphology, head and neck anatomy, histology, and embryology. Upon completion, students should be able to demonstrate knowledge of normal structures and development and how they relate to the practice of dental assisting.

DEN 101 Preclinical Procedures 4 6 0 7
Prerequisites: None
Corequisites: DEN 111
This course provides instruction in procedures for the clinical dental assistant as specified by the North Carolina Dental Practice Act. Emphasis is placed on orientation to profession, infection control techniques, instruments, related expanded functions, and diagnostic, operative, and specialty procedures. Upon completion, students should be able to demonstrate proficiency in clinical dental assisting procedures

***DEN 102 Dental Materials 3 4 0 5**
Prerequisites: DEN 101
Corequisites: None
This course provides instruction in identification, properties, evaluation of quality, principles, and procedures related to manipulation and storage of operative and specialty dental materials. Emphasis is placed on the understanding and safe application of materials used in the dental office and laboratory. Upon completion, students should be able to demonstrate proficiency in the laboratory and clinical application of routinely used dental materials. This is a diploma-level course.

DEN 103 Dental Sciences 2 0 0 2
Prerequisites: None
Corequisites: None
This course is a study of oral pathology, pharmacology, and dental office emergencies. Topics include oral pathological conditions, dental therapeutics, and management of emergency situations. Upon completion, students should be able to recognize abnormal oral conditions, identify classifications, describe actions and effects of commonly prescribed drugs, and respond to medical emergencies. This is a diploma-level course.

***DEN 104 Dental Health Education 2 2 0 3**
Prerequisites: DEN 101
Corequisites: None
This course covers the study of preventative dentistry to prepare dental assisting students for the role of dental health educator. Topics include etiology of dental diseases, preventative procedures, and patient education theory and practice. Upon completion, students should be able to demonstrate proficiency in patient counseling and oral health instruction in private practice or public health settings. This is a diploma-level course.

***DEN 105 Practice Management 2 0 0 2**
Prerequisites: None
Corequisites: None
This course provides a study of principles and procedures related to management of the dental practice. Emphasis is placed on maintaining clinical and financial records, patient scheduling, and supply and inventory control. Upon completion, students should be able to demonstrate fundamental skills in dental practice management. This is a diploma-level course.

***DEN 106 Clinical Practice I 1 0 12 5**
Prerequisites: DEN 101, DEN 103, DEN 111, DEN 112
Corequisites: None
This course is designed to provide experience assisting in a clinical setting. Emphasis is placed on the application of principles and procedures of four-handed dentistry and laboratory and clinical support functions. Upon completion, students should be able to utilize classroom theory, laboratory, and clinical skills in a dental setting. This is a diploma-level course.

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When only three numbers are listed, the middle number always designates lab hours.

***DEN 107 Clinical Practice II 1 0 12 5**
Prerequisites: DEN 102, DEN 105, DEN 106
Corequisites: None
This course is designed to increase the level of proficiency in assisting in a clinical setting. Emphasis is placed on the application of principles and procedures of four-handed dentistry and laboratory and clinical support functions. Upon completion, students should be able to combine theoretical and ethical principles necessary to perform entry-level skills including functions delegable to a DA II. This is a diploma-level course.

DEN 110 Orofacial Anatomy 2 2 0 3
Prerequisites: None
Corequisites: None
This course introduces the structures of the head, neck, and oral cavity. Topics include tooth morphology, head and neck anatomy, histology, and embryology. Upon completion, students should be able to relate the identification of normal structures and development to the practice of dental assisting and dental hygiene.

DEN 111 Infection/Hazard Control 2 0 0 2
Prerequisites: None
Corequisites: DEN 101 or DEN 121
This course introduces the infection and hazard control procedures necessary for the safe practice of dentistry. Topics include microbiology, practical infection control, sterilization and monitoring, chemical disinfectants, aseptic technique, infectious diseases, OSHA standards, and applicable North Carolina laws. Upon completion, students should be able to understand infectious diseases, disease transmission, infection control procedures, biohazard management, OSHA standards, and applicable North Carolina laws. 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 111 and DEN 100 or DEN 110; DEN 101 or DEN 121
This course provides a comprehensive view of the principles and procedures of radiology as they apply to dentistry. Topics include techniques in exposing, processing, and evaluating radiographs, as well as radiation safety, quality assurance, and legal issues. Upon completion, students should be able to demonstrate proficiency in the production of diagnostically acceptable radiographs using appropriate safety precautions.

DEN 120 Dental Hygiene Preclinic Lecture 2 0 0 2
Prerequisites: None
Corequisites: DEN 121
This course introduces preoperative and clinical dental hygiene concepts. Emphasis is placed on the assessment phase of patient care as well as the theory of basic dental hygiene instrumentation. Upon completion, students should be able to collect and evaluate patient data at a basic level and demonstrate knowledge of dental hygiene instrumentation.

***DEN 121 Dental Hygiene Preclinic Lab 0 6 0 2**
Prerequisites: None
Corequisites: DEN 111 and DEN 120
This course provides the opportunity to perform clinical dental hygiene procedures discussed in DEN 120. Emphasis is placed on clinical skills in patient assessment and instrumentation techniques. Upon completion, students should be able to demonstrate the ability to perform specific preclinical procedures. Also, students should be able to demonstrate aseptic technique used in a dental environment.

DEN 123 Nutrition/Dental Health 2 0 0 2
Prerequisites: None
Corequisites: DEN 221
This course introduces basic principles of nutrition with emphasis on nutritional requirements and their application to individual patient needs. Topics include the study of the food pyramid, nutrient functions, Recommended Daily Allowances, and related psychological principles. Upon completion, students should be able to recommend and counsel individuals on their food intake as related to their dental health.

DEN 124 Periodontology 2 0 0 2
Prerequisites: DEN 110
Corequisites: None
This course provides an in-depth study of the periodontium, periodontal pathology, periodontal monitoring, and the principles of periodontal therapy. Topics include periodontal anatomy and a study of the etiology, classification, and treatment modalities of periodontal diseases. Upon completion, students should be able to describe, compare, and contrast techniques involved in periodontal/maintenance therapy, as well as patient care management.

***DEN 125 Dental Office Emergencies 0 2 0 1**
Prerequisites: None
Corequisites: None
This course provides a study of the management of dental office emergencies. Topics include methods of prevention, necessary equipment/drugs, medicolegal considerations, recognition and effective initial management of a variety of emergencies. Upon completion, students should be able to recognize, assess, and manage various dental office emergencies and activate advanced medical support when indicated.

***DEN 130 Dental Hygiene Theory I 2 0 0 2**
Prerequisites: DEN 120
Corequisites: DEN 131
This course is a continuation of the didactic dental hygiene concepts necessary for providing an oral prophylaxis. Topics include deposits/removal, instrument sharpening, patient education, fluorides, planning for dental hygiene treatment, charting, and clinical records and procedures. Upon completion, students should be able to demonstrate knowledge needed to complete a thorough oral prophylaxis.

***DEN 131 Dental Hygiene Clinic I 0 0 9 3**
Prerequisites: DEN 111, DEN 121 and DEN 112
Corequisites: DEN 130
This course continues skill development in providing an oral prophylaxis. Emphasis is placed on treatment of the recall patients with gingivitis or light deposits. Upon completion, students should be able to assess these patients' needs and complete the necessary dental hygiene treatment.

***DEN 140 Dental Hygiene Theory II 1 0 0 1**
Prerequisites: DEN 130
Corequisites: DEN 141
This course provides a continuation of the development, theory, and practice of patient care. Topics include modification of treatment for special needs patients, advanced radiographic interpretation, and ergonomics. Upon completion, students should be able to differentiate necessary treatment modifications, effective ergonomic principles, and radiographic abnormalities.

***DEN 141 Dental Hygiene Clinic II 0 0 6 2**
Prerequisites: DEN 124, DEN 131
Corequisites: DEN 140
This course continues skill development in providing an oral prophylaxis. Emphasis is placed on treatment of patients with early periodontal disease and subgingival deposits. Upon completion, students should be able to assess these patients' needs and complete the necessary dental hygiene treatment.

***DEN 220 Dental Hygiene Theory III 2 0 0 2**
Prerequisites: DEN 140
Corequisites: DEN 221
This course provides a continuation in developing the theories and practices of patient care. Topics include periodontal debridement, pain control, subgingival irrigation, air polishing, and case presentations. Upon completion, students should be able to demonstrate knowledge of methods of treatment and management of periodontally compromised patients.

***DEN 221 Dental Hygiene Clinic III 0 0 12 4**
Prerequisites: DEN 141
Corequisites: DEN 220
This course continues skill development in providing an oral prophylaxis. Emphasis is placed on treatment of patients with moderate to advanced periodontal involvement and moderate deposits. Upon completion, students should be able to assess these patients' needs and complete the necessary dental hygiene treatment.

DEN 222 General and Oral Pathology 2 0 0 2
Prerequisites: BIO 163 or BIO 165 or BIO 168 and DEN 110
Corequisites: None
This course provides a general knowledge of oral pathological manifestations associated with selected systemic and oral diseases. Topics include developmental and degenerative diseases, selected microbial diseases, specific and nonspecific immune and inflammatory responses with emphasis on recognizing abnormalities. Upon completion, students should be able to differentiate between normal and abnormal tissues and refer unusual findings to the dentist for diagnosis.

DEN 223 Dental Pharmacology 2 0 0 2
Prerequisites: DEN 110
Corequisites: Select one: BIO 163, BIO 165 or BIO 168
This course provides basic drug terminology, general principles of drug actions, dosages, routes of administration, adverse reactions, and basic principles of anesthesiology. Emphasis is placed on knowledge of drugs in overall understanding of patient histories and health status. Upon completion, students should be able to recognize that each patient's general health or drug usage may require modification of the treatment procedures.

***DEN 224 Materials and Procedures 1 3 0 2**
Prerequisites: DEN 111 and DEN 121
Corequisites: None
This course introduces the physical properties of materials and related procedures used in dentistry. Topics include restorative and preventative materials, fabrication of casts and appliances, and chair-side functions of the dental hygienist. Upon completion, students should be able to demonstrate proficiency in the laboratory and/or clinical application of routinely used dental materials and chair-side functions.

***DEN 230 Dental Hygiene Theory IV 1 0 0 1**
Prerequisites: DEN 220
Corequisites: DEN 231
This course provides an opportunity to increase knowledge of the profession. Emphasis is placed on dental specialties and completion of a case presentation. Upon completion, students should be able to demonstrate knowledge of various disciplines of dentistry and principles of case presentations.

***DEN 231 Dental Hygiene Clinic IV 0 0 12 4**
Prerequisites: DEN 221
Corequisites: DEN 230
This course continues skill development in providing an oral prophylaxis. Emphasis is placed on periodontal maintenance and on treating patients with moderate to advanced/refractory periodontal disease. Upon completion, students should be able to assess these patients' needs and complete the necessary dental hygiene treatment.

***DEN 232 Community Dental Health 2 0 3 3**
Prerequisites: None
Corequisites: None
This course provides a study of the principles and methods used in assessing, planning, implementing, and evaluating community dental health programs. Topics include epidemiology, research methodology, biostatistics, 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
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
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
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.

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DFT 119 Basic CAD 1 2 2
Prerequisites: None
Corequisites: None
This course introduces computer-aided drafting software for specific technologies to non-drafting majors. Emphasis is placed on understanding the software command structure and drafting standards for specific technical fields. Upon completion, students should be able to create and plot basic drawings.

DFT 151 CAD I 2 3 3
Prerequisites: None
Corequisites: None
This course introduces CAD software as a drawing tool. Topics include drawing, editing, file management, and plotting. Upon completion, students should be able to produce and plot a CAD drawing.

DFT 152 CAD II 2 3 3
Prerequisites: DFT 151
Corequisites: None
This course is a continuation of DFT 151. Topics include advanced two-dimensional, three-dimensional, and solid modeling and extended CAD applications. Upon completion, students should be able to generate and manage CAD drawings and models to produce engineering documents.

DFT 153 CAD III 2 3 3
Prerequisites: DFT 151
Corequisites: None
This course covers basic principles of three-dimensional CAD wireframe and surface models. Topics include user coordinate systems, three-dimensional viewpoints, three-dimensional wireframes, and surface components and viewpoints. Upon completion, students should be able to create and manipulate three-dimensional wireframe and surface models.

DFT 154 Intro Solid Modeling 2 3 3
Prerequisites: DFT 151
Corequisites: None
This course in an introduction to basic three-dimensional solid modeling and design software. Topics include basic design, creation, editing, rendering and analysis of solid models and creation of multiview drawings. Upon completion, students should be able to use design techniques to create, edit, render and generate a multiview drawing.

DFT 170 Engineering Graphics 2 2 3
Prerequisites: 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
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 253 CAD Data Management 2 2 3**
Prerequisites: DFT 151
Corequisites: None
This course covers engineering document management techniques. Topics include efficient control of engineering documents, manipulation of CAD drawing data, generation of bill of materials, and linking to spreadsheets or databases. Upon completion, students should be able to utilize systems for managing CAD drawings, extract data from drawings, and link data to spreadsheets or database applications.

***DFT 259 CAD Project 1 4 3**
Prerequisites: ARC 112 and ARC 113
Corequisites: None
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, BOMs, annotations, and spreadsheets.

Developmental Mathematics

DMA 010 Operations With Integers 0.75 0.5 1
Prerequisites: None
Corequisites: None
This course provides a conceptual study of integers and integer operations. Topics include integers, absolute value, exponents, square roots, perimeter and area of basic geometric figures, Pythagorean theorem, and use of the correct order of operations. Upon completion, students should be able to demonstrate an understanding of pertinent concepts and principles and apply this knowledge in the evaluation of expressions.

DMA 020 Fractions and Decimals 0.75 0.5 1
Prerequisites: DMA 010
Corequisites: None
This course provides a conceptual study of the relationship between fractions and decimals and covers related problems. Topics include application of operations and solving contextual application problems, including determining the circumference and area of circles with the concept of pi. Upon completion, students should be able to demonstrate an understanding of the connections between fractions and decimals.

DMA 030 Propor/Ratio/Rate/Percent 0.75 0.5 1
Prerequisites: DMA 010 and DMA 020
Corequisites: None
This course provides a conceptual study of the problems that are represented by rates, ratios, percent, and proportions. Topics include rates, ratios, percent, proportion, conversion of English and metric units, and applications of the geometry of similar triangles. Upon completion, students should be able to use their understanding to solve conceptual application problems.

DMA 040 Express/Lin Equat/Inequal 0.75 0.5 1
Prerequisites: DMA 010, DMA 020 and DMA 030
Corequisites: None
This course provides a conceptual study of problems involving linear expressions, equations, and inequalities. Emphasis is placed on solving contextual application problems. Upon completion, students should be able to distinguish between simplifying expressions and solving equations and apply this knowledge to problems involving linear expressions, equations, and inequalities.

DMA 050 Graphs/Equations of Lines 0.75 0.5 1
Prerequisites: DMA 010, DMA 020, DMA 030 and DMA 040
Corequisites: None
This course provides a conceptual study of problems involving graphic and algebraic representations of lines. Topics include slope, equations of lines, interpretation of basic graphs, and linear modeling. Upon completion, students should be able to solve contextual application problems and represent real-world situations as linear equations in two variables.

DMA 060 Polynomial/Quadratic Appl 0.75 0.5 1
Prerequisites: DMA 010, DMA 020, DMA 030, DMA 040 and DMA 050
Corequisites: None
This course provides a conceptual study of problems involving graphic and algebraic representations of quadratics. Topics include basic polynomial operations, factoring polynomials, and solving polynomial equations by means of factoring. Upon completion, students should be able to find algebraic solutions to contextual problems with quadratic applications.

DMA 070 Rational Express/Equation 0.75 0.5 1
Prerequisites: DMA 010, DMA 020, DMA 030, DMA 040, DMA 050 and DMA 060
Corequisites: None
This course provides a conceptual study of problems involving graphic and algebraic representations of rational equations. Topics include simplifying and performing operations with rational expressions and equations, understanding the domain, and determining the reasonableness of an answer. Upon completion, students should be able to find algebraic solutions to contextual problems with rational applications.

DMA 080 Radical Express/Equations 0.75 0.5 1
Prerequisites: DMA 010, DMA 020, DMA 030, DMA 040, DMA 050, DMA 060 and DMA 070
Corequisites: None
This course provides a conceptual study of the manipulation of radicals and the application of radical equations to real-world problems. Topics include simplifying and performing operations with radical expressions and rational exponents, solving equations, and determining the reasonableness of an answer. Upon completion, students should be able to find algebraic solutions to contextual problems with radical applications.

Digital Media Technology

DME 110 Intro to Digital Media 2 2 3
Prerequisites: None
Corequisites: None
This course introduces students to key concepts, technologies, and issues related to digital media. Topics include emerging standards, key technologies and related design issues, terminology, media formats, career paths, and ethical issues. Upon completion, students should be able to demonstrate the various media formats that are used in digital media technology.

DME 115 Graphic Design Tools 2 2 3
Prerequisites: None
Corequisites: None
This course provides students with an introduction to creative expression and art/design techniques in a digital environment. Emphasis is placed on designing, creating, editing, and integrating, visual components consisting of bit-mapped and vector-based images, drawings, banners, text, simple animations, and multiple layers. Upon completion, students should be able to design and produce a range of visual products using digital processing techniques. Adobe (Photoshop, Illustrator, and InDesign) will be used in the course.

DME 120 Intro to Multimedia Applications 2 2 3
Prerequisites: DME 110 and WEB 115
Corequisites: None
This course introduces storyboarding and multimedia application design. Topics include vector and bit-mapped graphics, interactive multimedia interfaces, layering techniques, image and animation libraries, and scripting. Upon completion, students should be able to produce basic high-quality interactive multimedia applications.

DME 130 Digital Animation I 2 2 3
Prerequisites: DME 110
Corequisites: None
This course introduces concepts for planning and developing animation sequences. Emphasis will be placed on review of digital animation concepts and exploration of various animation software packages. Upon completion, students should be able to produce simple animations. Adobe (Photoshop, Illustrator, Flash, Edge Animate and Dreamweaver) will be used in the course.

DME 140 Intro Audio/Video Media 2 2 3
Prerequisites: DME 110
Corequisites: None
This course is designed to teach students how to manipulate digital and audio content for multimedia applications. Topics include format conversion and a review of current technologies and digital formats. Upon completion, students should be able to modify existing audio and video content to meet a range of production requirements associated with digital media applications. Adobe (Photoshop and Premiere Pro) and Audacity will be used in the course.

DME 210 User Interface Design 2 2 3
Prerequisites: DME 110, DME 115 and WEB 115
Corequisites: None
This course covers current design approaches and emerging standards related to the design and development of user interfaces. Emphasis is placed on conducting research, and analyzing and reviewing current practices in effective interface design. Upon completion, students should be able to intelligently discuss and evaluate new and existing digital media products in terms of the user interface. Adobe (Photoshop, Illustrator, Fireworks, Flash Catalyst, and Dreamweaver) will be used in the course.

DME 215 Adv Graphic Design Tools 2 2 3
Prerequisites: DME 115
Corequisites: None
This course provides students with advanced design techniques in a digital environment. Emphasis is placed on understanding principles of design and typography, and applying them effectively in projects. Upon completion, students should be able to design and produce a range of visual products using advanced digital design techniques and principles. Adobe (Photoshop, Illustrator, and InDesign) will be used in the course.

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DME 220 Interact Multimedia Programming 2 2 3
Prerequisites: DME 115 and DME 120
Corequisites: None
This course is designed to build on concepts developed in DME 120 and teaches students to apply custom programming to develop advanced applications and components. Emphasis is placed on scripting language functionalities associated with a variety of software packages. Upon completion, students should be able to produce advanced, high-quality interactive multimedia applications.

DME 230 Digital Animation II 2 2 3
Prerequisites: DME 115 and DME 130
Corequisites: None
This course introduces state-of-the-art 3D animation techniques and concepts. Emphasis is placed on utilizing the features of current animation software. Upon completion, students should be able to produce 3D animations as components of a multimedia application. Adobe (Photoshop, Illustrator, and Flash) and Google SketchUp will be used in the course.

DME 240 Media Compression 2 2 3
Prerequisites: DME 110, DME 115, and DME 140
Corequisites: None
This course introduces 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. Adobe (Photoshop, After Effects, and Media Encoder) will be used in the course.

***DME 260 Emerging Tech Digital Media 2 2 3**
Prerequisites: DME 120, DME 130, and DME 210
Corequisites: None
This course provides students with the latest technologies and strategies in the field of digital media. Emphasis is placed on the evaluation of emerging digital media technologies and presenting those findings to the class. Upon completion, students should be able to critically analyze emerging digital media technologies and establish informed opinions.

***DME 270 Prof Pract Digital Media 2 2 3**
Prerequisites: DME 120, DME 130, DME 210, and DME 215
Corequisites: None
This course introduces students to business skills needed to succeed in the digital media workplace. Topics include portfolio development, resume design, and preparation of media contacts. Upon completion, students should be able to prepare themselves and their work for a career in the digital media workplace.

***DME 285 Systems Project 2 2 3**
Prerequisites: DME 120, DME 130, DME 210, and DME 215
Corequisites: None
This course provides an opportunity to complete a significant digital media project from the design phase through implementation with minimal instructor support. Emphasis is placed on project definition, testing, presentation, and implementation. Upon completion, students should be able to complete, maintain and implement a digital media project.

Drama

DRA 111 Theatre Appreciation 3 0 3
Prerequisites: None
Corequisites: None
This course provides a study of the art, craft, and business of the theatre. Emphasis is placed on the audience's appreciation of the work of the playwright, director, actor, designer, producer, and critic. Upon completion, students should be able to demonstrate a vocabulary of theatre terms and to recognize the contributions of various theatre artists. Attendance at one play performance and in-depth reading of two plays are required. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

DRA 112 Literature of the Theatre 3 0 3
Prerequisites: None
Corequisites: None
This course provides a survey of dramatic works from the classical Greek through the present. Emphasis is placed on the language of drama, critical theory, and background as well as on play reading and analysis. Upon completion, students should be able to articulate, orally and in writing, their appreciation and understanding of dramatic works. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

DRA 120 Voice for Performance 3 0 3
Prerequisites: None
Corequisites: None
This course provides guided practice in the proper production of speech for the theatre. Emphasis is placed on improving speech, including breathing, articulation, pronunciation, and other vocal variables. Upon completion, students should be able to demonstrate effective theatrical speech. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

DRA 122 Oral Interpretation 3 0 3
Prerequisites: None
Corequisites: None
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 126 Storytelling 3 0 3
Prerequisites: None
Corequisites: None
This course introduces the art of storytelling and the oral traditions of folk literature. Topics include the history of storytelling, its value and purpose, techniques of the storyteller, and methods of collecting verbal art. Upon completion, students should be able to present and discuss critically stories from the world's repertory of traditional lore. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

DRA 130 Acting I 0 6 3
Prerequisites: None
Corequisites: None
This course provides an applied study of the actor's craft. Topics include role analysis, training the voice, and body concentration, discipline, and self-evaluation. Upon completion, students should be able to explore their creativity in an acting ensemble. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

DRA 131 Acting II 0 6 3
Prerequisites: DRA 130
Corequisites: None
This course provides additional hands-on practice in the actor's craft. Emphasis is placed on further analysis, characterization, growth, and training for acting competence. Upon completion, students should be able to explore their creativity in an acting ensemble. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

DRA 135 Acting for the Camera I 1 4 3
Prerequisites: None
Corequisites: None
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 pre-major and/or elective course requirement.

DRA 140 Stagecraft I 0 6 3
Prerequisites: None
Corequisites: None
This course introduces the theory and basic construction of stage scenery and properties. Topics include stage carpentry, scene painting, stage electrics, properties, and backstage organization. Upon completion, students should be able to pursue vocational and avocational roles in technical theatre. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

DRA 145 Stage Make-up 1 2 2
Prerequisites: None
Corequisites: None
This course covers the research, design, selection of materials, and application of stage make-up, prosthetics, wigs, and hairpieces. Emphasis is placed on the development of techniques, style, and presentation of the finished make-up. Upon completion, students should be able to create and apply make-up prosthetics, and hairpieces. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

DRA 170 Play Production I 0 9 3
Prerequisites: None
Corequisites: None
This course provides an applied laboratory study of the processes involved in the production of a play. Topics include fundamental practices, principles, and techniques associated with producing plays of various periods and styles. Upon completion, students should be able to participate in an assigned position with a college theatre production. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

DRA 171 Play Production II 0 9 3
Prerequisites: DRA 170
Corequisites: None
This course provides an applied laboratory study of the processes involved in the production of a play. Topics include fundamental practices, principles, and techniques associated with producing plays of various periods and styles. Upon completion, students should be able to participate in an assigned position with a college theatre production. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

Developmental Reading and English

DRE 096 Integration Reading and Writing I 2.5 1 3
Prerequisites: None
Corequisites: None

This course develops proficiency in specific integrated and contextualized reading and writing skills and strategies. Topics include reading and writing processes, critical thinking strategies, and recognition and composition of well-developed, coherent, and unified texts; these topics are primarily taught at the introductory level using texts primarily in a Lexile® range of 860 to 1010. Upon completion, students should be able to apply those skills toward understanding a variety of academic and career-related texts and composing effective paragraphs.

DRE 097 Integrated Reading and Writing II 2.5 1 3
Prerequisites: DRE 096
Corequisites: None

This course develops proficiency in integrated and contextualized reading and writing skills and strategies. Topics include reading and writing processes, critical thinking strategies, and recognition and composition of well-developed, coherent, and unified texts; except where noted, these topics are taught at a reinforcement level using texts primarily in a Lexile® range of 960 to 1115. Upon completion, students should be able to demonstrate and apply those skills toward understanding a variety of complex academic and career texts and composing essays incorporating relevant, valid evidence.

DRE 098 Integrated Reading and Writing III 2.5 1 3
Prerequisites: DRE 097
Corequisites: None

This course develops proficiency in integrated and contextualized reading and writing skills and strategies. Topics include reading and writing processes, critical thinking strategies, and recognition and composition of well-developed, coherent, and unified texts; except where noted, these topics are taught using texts primarily in the Lexile® range of 1100 to 1320 in order to prepare students to be career and college ready. Upon completion, students should be able to apply those skills toward understanding a variety of texts at the career and college ready level and toward composing a documented essay.

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When only three numbers are listed, the middle number always designates lab hours.

DRE 099 Integrated Reading and Writing III 2 0 2
Prerequisites: DRE 097
Corequisites: ENG 111

This course, which must be offered as a co-requisite with ENG 111 to students who are near college ready, develops proficiency in integrated and contextualized reading and writing skills and strategies by complementing, supporting and reinforcing material covered in ENG 111. Topics include reading and writing processes, critical thinking strategies, and recognition and composition of well-developed, coherent, and unified texts; except where noted, these topics are taught using texts primarily in the Lexile® range of 1200 to 1320 in order to prepare students to be career and college ready. Upon completion, students should be able to apply those skills toward understanding a variety of texts at the career and college ready level and toward composing a documented essay.

Economics

ECO 151 Survey of Economics 3 0 3
Prerequisites: None
Corequisites: None
This course, for those who have not received credit for ECO 251 or 252, 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: DMA 040 and DMA 050
Corequisites: None
This course introduces economic analysis of individual, business, and industry choices in the market economy. Topics include the price mechanism, supply and demand, optimizing economic behavior, costs and revenue, market structures, factor markets, income distribution, market failure, and government intervention. Upon completion, students should be able to identify and evaluate consumer and business alternatives in order to efficiently achieve economic objectives. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

ECO 252 Principles of Macroeconomics 3 0 3
Prerequisites: ECO 151 or ECO 251
Corequisites: None
This course introduces economic analysis of aggregate employment, income, and prices. Topics include major schools of economic thought; aggregate supply and demand; economic measures, fluctuations, and growth; money and banking; stabilization techniques; and international trade. Upon completion, students should be able to evaluate national economic components, conditions, and alternatives for achieving socioeconomic goals. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

Education

EDU 114 Intro to Family Childcare 3 0 3
Prerequisites: Take one set
Set 1: ENG 080, RED 080, DMA 030 or placement
Set 2: ENG 085, DMA 030 or placement
Corequisites: None
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 119 Intro to Early Child Educ 4 0 4
Prerequisites: None
Corequisites: None
This course covers the foundations of the education profession, the diverse educational settings for young children, professionalism and planning developmentally appropriate programs for 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 131 Child, Family, & Commun 3 0 3
Prerequisites: Take one set
Set 1: ENG 080, RED 080
Set 2: ENG 085
Corequisites: None
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 144 Child Development I 3 0 3
Prerequisites: Take one set
Set 1: ENG 080, RED 080
Set 2: ENG 085
Corequisites: None
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 pre-major and/or elective course requirement.

EDU 145 Child Development II 3 0 3
Prerequisites: Take one set
Set 1: ENG 080, RED 080
Set 2: ENG 085
Corequisites: None
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 pre-major and/or elective course requirement.

EDU 146 Child Guidance 3 0 3
Prerequisites: Take one set
Set 1: ENG 080, RED 080
Set 2: ENG 085
Corequisites: None
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 pre-major and/or elective course requirement.

EDU 151 Creative Activities 3 0 3
Prerequisites: Take one set
Set 1: ENG 080, RED 080
Set 2: ENG 085
Corequisites: None
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 153 Health, Safety & Nutrit 3 0 3
Prerequisites: Take one set
Set 1: ENG 080, RED 080
Set 2: ENG 085
Corequisites: None
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 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
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
This course covers management and instructional techniques with school-age populations. Topics include classroom management and organization, teaching strategies, individual student differences and learning styles, and developmentally appropriate classroom guidance techniques. Upon completion, students should be able to utilize developmentally appropriate behavior management and instructional strategies that enhance the teaching/learning process and promote students' academic success.

EDU 214 Early Child 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
This course is designed to allow students to apply skills in a three star (minimum) or NAEYC accredited or equivalent, quality early childhood environment. Emphasis is placed on observing children and assisting with the implementation of developmentally appropriate activities and environments for all children; modeling reflective and professional practices. Upon completion, students should be able to demonstrate developmentally appropriate plans/assessments, appropriate guidance techniques and ethical/professional behaviors as indicated by assignments and onsite faculty visits.

EDU 216 Foundations of Education 4 0 4
Prerequisites: Take one set
Set 1: ENG 090, RED 090
Set 2: ENG 095
Corequisites: None
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 pre-major and/or elective course requirement at select institutions only.

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When only three numbers are listed, the middle number always designates lab hours.

EDU 221 Children with Exceptionalities 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
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 pre-major 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
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 243 Learning Theory 3 0 3
Prerequisites: Take one set
Set 1: ENG 090, RED 090
Set 2: ENG 095
Corequisites: None
This course provides lateral entry teachers an introduction to learning theory, various styles of learning, and motivational factors involved in the learning process. Emphasis is placed on the development of cognitive skills using the eight types of intelligence and applying these to practical classroom situations. Upon completion, students should be able to describe theories and styles of learning and discuss the relationship between different types of intelligence to learning motivation.

EDU 248 Developmental Delays 3 0 3
Prerequisites: Take one set
Set 1: ENG 090, RED 090, EDU 144, EDU 145, EDU 221
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
This course covers the causes and assessment of developmental delays and individualized instruction and curriculum for children with developmental delays. Emphasis is placed on definition, characteristics, assessment, educational strategies, inclusion, family involvement, and services for children with developmental delays. Upon completion, students should be able to identify, assess, and plan educational intervention strategies for children with developmental delays and their families.

EDU 251 Exploration Activities 3 0 3
Prerequisites: Take one set
Set 1: ENG 090, RED 090
Set 2: ENG 095
Corequisites: None
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 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
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 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
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 271 Educational Technology 2 2 3
Prerequisites: Take one set
Set 1: ENG 090, RED 090
Set 2: ENG 095
Corequisites: None
This course introduces the use of technology to enhance teaching and learning in all educational settings. Topics include technology concepts, instructional strategies, materials and adaptive technology for children with exceptionalities, facilitation of assessment/evaluation, and ethical issues surrounding the use of technology.

Upon completion, students should be able to apply technology enhanced instructional strategies, use a variety of technology resources and demonstrate appropriate technology skills in educational environments.

EDU 280 Language & Literacy Exp 3 0 3
Prerequisites: Take one set
Set 1: ENG 090, RED 090
Set 2: ENG 095
Corequisites: None
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 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
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
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
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
This course introduces general topics relevant to engineering technology. Skills developed include goal setting and career assessment, professional ethics, critical thinking and problem solving, using college resources for study and research, and using tools for engineering computations. Upon completion, students should be able to choose a career option in engineering technology and utilize college resources to meet their educational goals.

***EGR 115 Intro to Technology 2 3 3**
Prerequisites: None
Corequisites: None
This course introduces the basic skills and career fields for technicians. Topics include career options, technical vocabulary, dimensional analysis, measurement systems, engineering graphics, calculator applications, professional ethics, safety practices, and other related topics. Upon completion, students should be able to demonstrate an understanding of the basic technologies, prepare drawings and sketches, and perform computations using a scientific calculator.

***EGR 125 Application Software for Technicians 1 2 2**
Prerequisites: None
Corequisites: None
This course introduces personal computer software and teaches students how to customize the software for technical applications. Emphasis is placed on the use of common office applications software such as spreadsheets, word processing, graphics and Internet access. Upon completion, students should be able to demonstrate competency in using applications software to solve technical problems and communicate the end results in text and graphical formats.

***EGR 130 Engineering Cost Control 2 2 3**
Prerequisites: MAT 121 or MAT 161 or MAT 171
Corequisites: None
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.

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When only three numbers are listed, the middle number always designates lab hours.

***EGR 150 Intro to Engineering 1 2 2**
Prerequisites: MAT 080 or Placement
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 pre-major and/or elective course requirement.

***EGR 220 Engineering Statics 3 0 3**
Prerequisites: PHY 251
Corequisites: MAT 272
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 pre-major and/or elective course requirement.

***EGR 230 Engineering Materials 3 0 3**
Prerequisites: CHM 151
Corequisites: None
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 pre-major and/or elective course requirement.

***EGR 250 Statics/Strength of Materials 4 3 5**
Prerequisites: MAT 121, MAT 161, MAT 171, or MAT 175
Corequisites: None
This course includes vector analysis, equilibrium of force systems, friction, sectional properties, stress/strain, and deformation. Topics include resultants and components of forces, moments and couples, free-body diagrams, shear and moment diagrams, trusses, frames, beams, columns, connections, and combined stresses. Upon completion, students should be able to analyze simple structures.

EGR 285 Design Project 0 4 2
Prerequisites: Department Chair Approval
Corequisites: None
This course provides the opportunity to design an instructor-approved project using previously acquired skills. Emphasis is placed on selection, proposal, design, testing, and documentation of the approved project. Upon completion, students should be able to present and demonstrate projects.

Electrical

ELC 111 Introduction to Electricity 2 2 3
Prerequisites: DMA 030 or placement
Corequisites: None
This course introduces the fundamental concepts of electricity and test equipment to nonelectrical/electronic majors. Topics include basic DC and AC principles (voltage, resistance, current, impedance); components (resistors, inductors, and capacitors); power; and operation of test equipment. Upon completion, students should be able to construct and analyze simple DC and AC circuits using electrical test equipment.

ELC 112 DC/AC Electricity 3 6 5
Prerequisites: DMA 030 or placement
Corequisites: None
This course introduces the fundamental concepts of and computations related to DC/AC electricity. Emphasis is placed on DC/AC circuits, components, operation of test equipment; and other related topics. Upon completion, students should be able to construct, verify, troubleshoot, and repair DC/AC circuits.

ELC 113 Basic Wiring I 2 6 4
Prerequisites: None
Corequisites: None
This course introduces the care/usage of tools and materials used in electrical installations and the requirements of the National Electrical Code. Topics include NEC, electrical safety, and electrical blueprint reading; planning, layout; and installation of electrical distribution equipment; lighting; overcurrent protection; conductors; branch circuits; and conduits. Upon completion, students should be able to properly install conduits, wiring, and electrical distribution equipment associated with basic electrical installations.

ELC 115 Industrial Wiring 2 6 4
Prerequisites: ELC 113
Corequisites: None
This course covers layout, planning, and installation of wiring systems in industrial facilities. Emphasis is placed on industrial wiring methods and materials. Upon completion, students should be able to install industrial systems and equipment.

ELC 117 Motors and Controls 2 6 4
Prerequisites: Select one: AHR 111, ELC 111, ELC 112, ELC 131, ELC 138
Corequisites: None
This course introduces the fundamental concepts of motors and motor controls. Topics include ladder diagrams, pilot devices, contactors, motor starters, motors, and other control devices. Upon completion, students should be able to properly select, connect, and troubleshoot motors and control circuits.

ELC 118 National Electrical Code 1 2 2
Prerequisites: ELC 113 or Department Chair Approval
Corequisites: None
This course covers the use of the current National Electrical Code. Topics include the NEC history, wiring methods, overcurrent protection, materials, and other related topics. Upon completion, students should be able to effectively use the NEC.

ELC 127 Software for Technicians 1 3 2
Prerequisites:None
Corequisites:None
This course introduces computer software which can be used to solve electrical/electronics problems. Topics include electrical/electronics calculations and applications. Upon completion, students should be able to utilize a personal computer for electrical/electronics- related applications.

ELC 128 Introduction to PLC 2 3 3
Prerequisites: None
Corequisites: None
This course introduces the programmable logic controller (PLC) and its associated applications. Topics include ladder logic diagrams, input/output modules, power supplies, surge protection, selection/installation of controllers, and interfacing of controllers with equipment. Upon completion, students should be able to install PLCs and create simple programs.

ELC 132 Electrical Drawings 1 3 2
Prerequisites: None
Corequisites: None
This course introduces the technical documentation that is typically found or used in the industrial environment. Topics include interpretation of service manuals, freehand sketching of lines, orthographic views and dimensions, and blueprint reading. Upon completion, students should be able to interpret technical documents and blueprints and use basic drafting skills to prepare usable field drawings.

ELC 138 DC Circuit Analysis 3 3 4
Prerequisites: None
Corequisites: RED 080 and DMA 040 or placement
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 3 3 4
Prerequisites: ELC 138
Corequisites: None
This course introduces AC electricity with an emphasis on circuit analysis, measurements, and operation of test equipment. Topics include AC voltages, circuit analysis laws and theorems, reactive components and circuits, transformers, test equipment operation, circuit simulation, and other related topics. Upon completion, students should be able to interpret AC circuit schematics; analyze and troubleshoot AC circuits; and properly use test equipment.

ELC 213 Instrumentation 3 2 4
Prerequisites: Select one: AHR 111, ELC 111, ELC 112, ELC 131, ELC 138
Corequisites: None
This course covers the fundamentals of instrumentation used in industry. Emphasis is placed on electric, electronic, and pneumatic instruments. Upon completion, students should be able to design, install, maintain, and calibrate instrumentation.

ELC 220 Photovoltaic System Technology 2 3 3
Prerequisites: ALT 120
Corequisites: None
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.

ELC 228 PLC Applications 2 6 4
Prerequisites: ELC 128
Corequisites: None
This course covers programming and applications of programmable logic controllers. Emphasis is placed on programming techniques, networking, specialty I/O modules, and system troubleshooting. Upon completion, students should be able to specify, implement, and maintain complex PLC controlled systems.

***ELC 229 Applications Project 1 3 2**
Prerequisites: None
Corequisites: None
This course provides an individual and/or integrated team approach to a practical project as approved by the instructor. Topics include project selection and planning, implementation and testing, and a final presentation. Upon completion, students should be able to plan and implement an applications-oriented project. Students must possess a working knowledge of electrical theory, circuits, and control in order to be successful in this course.

Electronics

ELN-131 Analog Electronics I 3 3 4
Prerequisites: ELC 138
Corequisites: None
This course introduces the characteristics and applications of semiconductor devices and circuits. Emphasis is placed on analysis, selection, biasing, and applications. Upon completion, students should be able to construct, analyze, verify, and troubleshoot analog circuits using appropriate techniques and test equipment.

ELN 133 Digital Electronics 3 3 4
Prerequisites: Select one: ELC 111, ELC 112, ELC 131, ELC 138
Corequisites: None
This course covers combinational and sequential logic circuits. Topics include number systems, Boolean algebra, logic families, MSI and LSI circuits, AC/DC converters, and other related topics. Upon completion, students should be able to construct, analyze, verify, and troubleshoot digital circuits using appropriate techniques and test equipment.

ELN 133A Digital Electronics Lab 0 3 1
Prerequisites: None
Corequisites: ELN 133
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 150 CAD for Electronics 1 3 2
Prerequisites: None
Corequisites: None
This course introduces computer-aided drafting (CAD) with an emphasis on applications in the electronics field. Topics include electronics industry standards (symbols, schematic diagrams, layouts); drawing electronic circuit diagrams; and specialized electronic drafting practices and components such as resistors, capacitors, and ICs. Upon completion, students should be able to prepare electronic drawings with CAD software.

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When only three numbers are listed, the middle number always designates lab hours.

ELN 152 Fabrication Techniques 1 3 2
Prerequisites: None
Corequisites: None
This course covers the fabrication methods required to create a prototype product from the initial circuit design. Topics include CAD, layout, sheet metal working, component selection, wire wrapping, PC board layout and construction, reverse engineering, soldering, and other related topics. Upon completion, students should be able to design and construct an electronic product with all its associated documentation.

ELN 154 Introduction to Data Communication 2 3 3
Prerequisites: ELN 133 with ELN 132 or ELN 137
Corequisites: None
This course introduces the principal elements and theory (analog and digital techniques) of data communication systems and how they are integrated as a complete network. Topics include an overview of data communication, OSI model, transmission modes, serial and parallel interfaces, applications of ICs, protocols, network configurations, modems, and related applications. Upon completion, students should be able to demonstrate knowledge of the concepts associated with data communication systems and high speed networks.

ELN 232 Introduction to Microprocessors 3 3 4
Prerequisites: ELN 133
Corequisites: None
This course introduces microprocessor architecture and microcomputer systems including memory and input/output interfacing. Topics include assembly language programming, bus architecture, bus cycle types, I/O systems, memory systems, interrupts, and other related topics. Upon completion, students should be able to interpret, analyze, verify, and troubleshoot fundamental microprocessor circuits and programs using appropriate techniques and test equipment.

ELN 234 Communication Systems 3 3 4
Prerequisites: ELN 133 with ELN 132 or ELN 137
Corequisites: None
This course introduces the fundamentals of electronic communication systems. Topics include the frequency spectrum, electrical noise, modulation techniques, characteristics of transmitters and receivers, and digital communications. Upon completion, students should be able to interpret analog and digital communication circuit diagrams, analyze transmitter and receiver circuits, and use appropriate communication test equipment.

ELN 237 Local Area Networks 2 3 3
Prerequisites: Select One: CET 111, CIS 110, CIS 111
Corequisites: None
This course introduces the fundamentals of local area networks and their operation in business and computer environments. Topics include the characteristics of network topologies, system hardware (repeaters, bridges, routers, gateways), system configuration, and installation and administration of the LAN. Upon completion, students should be able to install, maintain, and manage a local area network.

ELN 238 Advanced LANs 2 3 3
Prerequisites: ELN 237
Corequisites: None
This course covers advanced concepts, tools, and techniques associated with servers, workstations, and overall local area network performance. Topics include network security and configuration, system performance and optimization, communication protocols and packet formats, troubleshooting techniques, multi-platform integration, and other related topics. Upon completion, students should be able to use advanced techniques to install, manage, and troubleshoot networks and optimize server and workstation performance.

Emergency Medical Science

EMS 110 EMT - Basic 5 6 0 7
Prerequisites: Enrollment in EMS program
Corequisites: None
This course introduces basic emergency medical care. Topics include preparatory, airway, patient assessment, medical emergencies, trauma, infants and children, and operations. Upon completion, students should be able to demonstrate the knowledge and skills necessary for the EMT-Basic certification.

EMS 111 Prehospital Environment 2 2 0 3
Prerequisites: Enrollment in EMS program
Corequisites: None
This course introduces the prehospital care environment and is required for all levels of EMT certification. Topics include roles, responsibilities, laws, ethics, communicable diseases, hazardous materials recognition, therapeutic communications, EMS systems, and defense tactics. Upon completion of EMS 110 and EMS 111, students should be able to demonstrate competencies and skills necessary to achieve EMT-Basic certification.

EMS 115 Defense Tactics for EMS 1 3 0 2
Prerequisites: Enrollment in EMS program
Corequisites: None
This course is designed to provide tactics that can be used for self-protection in dangerous and violent situations. Emphasis is placed on prediction, recognition, and response to dangerous and violent situations. Upon completion, students should be able to recognize potentially hostile situations and protect themselves during a confrontation.

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
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
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
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
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
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
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
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
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
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
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
This course is a continuation of the hospital and field internship required for paramedic certification. Emphasis is placed on advanced-level care. Upon completion, students should be able to demonstrate continued progress in advanced-level patient care. Current N.C. EMT certification is required for students enrolling in this course.

EMS 230 Pharmacology II for EMS 1 3 0 2
Prerequisites: EMS 130
Corequisites: None
This course explores the fundamental classification and action of common pharmacologic agents. Emphasis is placed on the action and use of compounds most commonly encountered in the treatment of chronic and acutely ill patients. Upon completion, students should be able to demonstrate general knowledge of drugs covered during the course.

EMS 231 EMS Clinical Practicum III 0 0 9 3
Prerequisites: EMS 221 or EMS 222 and COE 121, EMS 210 and EMS 220
Corequisites: EMS 250 and EMS 260
This course is a continuation of the hospital and field internship required for paramedic certification. Emphasis is placed on advanced-level care. Upon completion, students should be able to demonstrate continued progress in advanced-level patient care. Current N.C. EMT certification is required for students enrolling in this course.

EMS 240 Special Needs Patients 1 2 0 2
Prerequisites: EMS 120, EMS 121 or EMS 122, EMS 130, and EMS 131
Corequisites: EMS 241
This course includes concepts of crisis intervention and techniques of dealing with special needs patients and is required for paramedic certification. Topics include behavioral emergencies, abuse, assault, challenged patients, personal well-being, home care, and psychotherapeutic pharmacology. Upon completion, students should be able to recognize and manage frequently encountered special needs patients.

EMS 241 EMS Clinical Practicum IV 0 0 9 3
Prerequisites: EMS 231 or EMS 232 and COE 131, EMS 250, and EMS 260
Corequisites: EMS 240, EMS 270, and EMS 285
This course is a continuation of the hospital and field internship required for paramedic certification. Emphasis is placed on advanced-level care. Upon completion, students should be able to provide advanced-level patient care as an entry-level paramedic. Current N.C. EMT certification is required for students enrolling in this course.

*The numbers following course titles indicate **class**, **lab**, **clinic/co-op/shop**, and **credit** hours, respectively.*
When only three numbers are listed, the middle number always designates lab hours.

EMS 250 Advanced Medical Emergencies 2 3 0 3
Prerequisites: EMS 120, EMS 130, EMS 131, and either EMS 121 or EMS 122, EMS 210, EMS 220, and EMS 221
Corequisites: EMS 231
This course presents an in-depth study of medical conditions frequently encountered in the pre-hospital setting and is required for paramedic certification. Topics include pulmonology, neurology, endocrinology, anaphylaxis, gastroenterology, toxicology, and environmental emergencies integrating case presentation and emphasizing pharmacotherapeutics. Upon completion, students should be able to recognize and manage frequently encountered medical conditions based upon initial patient impression.

EMS 260 Advanced Trauma Emergencies 1 3 0 2
Prerequisites: EMS 120, EMS 130, EMS 131, and either EMS 121 or EMS 122, EMS 210, EMS 220, and EMS 221
Corequisites: EMS 231
This course presents in-depth study of trauma including pharmacological interventions for conditions frequently encountered in the pre-hospital 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
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 Bridge Program
Corequisites: None
This course is designed to bridge the knowledge gained in a continuing education paramedic program with the knowledge gained in an EMS curriculum program. Topics include patient assessment, documentation, twelve-lead ECG analysis, thrombolytic agents, cardiac pacing, and advanced pharmacology. Upon completion, students should be able to perform advanced patient assessment documentation using the problem-oriented medical record format and manage complicated patients.

EMS 285 EMS Capstone 1 3 0 2
Prerequisites: EMS 220, EMS 231, EMS 250, and EMS 260
Corequisites: EMS 241
This course provides an opportunity to demonstrate problem-solving skills as a team leader in simulated patient scenarios and is required for paramedic certification. Emphasis is placed on critical thinking, integration of didactic and psychomotor skills, and effective performance in simulated emergency situations. Upon completion, students should be able to recognize and appropriately respond to a variety of EMS related events.

English

ENG 080 Writing Foundations 3 2 4
Prerequisites: ENG 070 or ENG 075 or placement
Corequisites: None
This course introduces the writing process and stresses effective sentences. Emphasis is placed on applying the conventions of written English, reflecting standard usage and mechanics in structuring a variety of sentences. Upon completion, students should be able to write correct sentences and a unified, coherent paragraph. This course does not satisfy the developmental writing prerequisite for ENG 111.

ENG 090 Composition Strategies 3 0 3
Prerequisites: ENG 080 or ENG 085 or placement
Corequisites: ENG 090A
This course provides practice in the writing process and stresses effective paragraphs. Emphasis is placed on learning and applying the conventions of standard written English in developing paragraphs within the essay. Upon completion, students should be able to compose a variety of paragraphs and a unified, coherent essay. This course, with ENG 090A, satisfies the developmental writing prerequisite for ENG 111.

ENG 090A Composition Strategies Lab 0 2 1
Prerequisites: ENG 080 or ENG 085
Corequisites: ENG 090
This writing lab is designed to practice the skills introduced in ENG 090. Emphasis is placed on learning and applying the conventions of standard written English in developing paragraphs within the essay. Upon completion, students should be able to compose a variety of paragraphs and a unified, coherent essay.

ENG 102 Applied Communications II 3 0 3
Prerequisites: None
Corequisites: None
This course is designed to enhance writing and speaking skills for the workplace. Emphasis is placed on generating short writings such as job application documents, memoranda, and reports and developing interpersonal communication skills with employees and the public. Upon completion, students should be able to prepare effective, short, and job-related written and oral communications. This is a diploma-level course.

ENG 110 Freshman Composition 3 0 3
Prerequisites: ENG 090 and RED 080
Corequisites: None
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
This course is the required first course in a series of two designed to develop the ability to produce clear expository prose. Emphasis is placed on the writing process including audience analysis, topic selection, thesis support and development, editing, and revision. Upon completion, students should be able to produce unified, coherent, well-developed essays using standard written English. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in English Composition.

ENG 112 Argument-Based Research 3 0 3
Prerequisites: ENG 111
Corequisites: None
This course, the second in a series of two, introduces research techniques, documentation styles, and argumentative strategies. Emphasis is placed on analyzing data and incorporating research findings into documented argumentative essays and research projects. Upon completion, students should be able to summarize, paraphrase, interpret, and synthesize information from primary and secondary sources using standard research format and style. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in English Composition.

ENG 113 Literature-Based Research 3 0 3
Prerequisites: ENG 111
Corequisites: None
This course, the second in a series of two, expands the concepts developed in ENG 111 by focusing on writing that involves literature-based research and documentation. Emphasis is placed on critical reading and thinking and the analysis and interpretation of prose, poetry, and drama: plot, characterization, theme, cultural context, etc. Upon completion, students should be able to construct mechanically-sound, documented essays and research papers that analyze and respond to literary works. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in English Composition.

ENG 114 Professional Research and Reporting 3 0 3
Prerequisites: ENG 111
Corequisites: Admission to a Major Program or English Department approval
This course, the second in a series of two, is designed to teach professional communication skills. Emphasis is placed on research, listening, critical reading and thinking, analysis, interpretation, and design used in oral and written presentations. Upon completion, students should be able to work individually and collaboratively to produce well-designed business and professional written and oral presentations. Students entering this course should be able to demonstrate in-depth knowledge in a technical field and should anticipate interdepartmental evaluation of course projects. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in English Composition.

ENG 125 Creative Writing I 3 0 3
Prerequisites: ENG 111
Corequisites: None
This course is designed to provide students with the opportunity to practice the art of creative writing. Emphasis is placed on writing fiction, poetry, and sketches. Upon completion, students should be able to craft and critique their own writing and critique the writing of others. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

ENG 126 Creative Writing II 3 0 3
Prerequisites: ENG 125
Corequisites: None
This course is designed as a workshop approach for advancing imaginative and literary skills. Emphasis is placed on the discussion of style, techniques, and challenges for first publications. Upon completion, students should be able to submit a piece of their writing for publication. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

ENG 131 Introduction to Literature 3 0 3
Prerequisites: ENG 111
Corequisites: Select one: ENG 112, ENG 113, ENG 114
This course introduces the principal genres of literature. Emphasis is placed on literary terminology, devices, structure, and interpretation. Upon completion, students should be able to analyze and respond to literature. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

ENG 135 Introduction to Short Fiction 3 0 3
Prerequisites: ENG 111
Corequisites: Select one: ENG 112, ENG 113, ENG 114
This course provides intensive study of short fiction as a literary form, based on close reading of representative texts. Emphasis is placed on the development and analysis of short fiction. Upon completion, students should be able to interpret, analyze, and discuss the distinguishing forms of short fiction. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

ENG 231 American Literature I 3 0 3
Prerequisites: Select one: ENG 112, ENG 113, ENG 114
Corequisites: None
This course covers selected works in American literature from its beginnings to 1865. Emphasis is placed on historical background, cultural context, and literary analysis of selected prose, poetry, and drama. Upon completion, students should be able to interpret, analyze, and respond to literary works in their historical and cultural contexts. This course requires a research paper. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

ENG 232 American Literature II 3 0 3
Prerequisites: Select one: ENG 112, ENG 113, ENG 114
Corequisites: None
This course covers selected works in American literature from 1865 to the present. Emphasis is placed on historical background, cultural context, and literary analysis of selected prose, poetry, and drama. Upon completion, students should be able to interpret, analyze, and respond to literary works in their historical and cultural contexts. This course requires a research paper. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

ENG 235 Survey of Film as Literature 3 0 3
Prerequisites: ENG 113
Corequisites: None
This course provides a study of the medium of film with a focus on the historical impact and the various literary genres of movies. Emphasis is placed on an appreciation of film as a form of literature which demonstrates various elements of fiction (character, setting, theme, etc.). Upon completion, students should be able to analyze film critically in various literary contexts. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

ENG 241 British Literature I 3 0 3
Prerequisites: Select one: ENG 112, ENG 113, ENG 114
Corequisites: None
This course covers selected works in British literature from its beginnings to the Romantic Period. Emphasis is placed on historical background, cultural context, and literary analysis of selected prose, poetry, and drama. Upon completion, students should be able to interpret, analyze, and respond to literary works in their historical and cultural contexts. Reading 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
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
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
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
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 272 Southern Literature 3 0 3
Prerequisites: Select one: ENG 112, ENG 113, ENG 114
Corequisites: None
This course provides an analytical study of the works of several Southern authors. Emphasis is placed on the historical and cultural contexts, themes, aesthetic features of individual works, and biographical backgrounds of the authors. Upon completion, students should be able to interpret, analyze, and discuss selected works. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

ENG 273 African-American Literature 3 0 3
Prerequisites: Select one: ENG 112, ENG 113, ENG 114
Corequisites: None
This course provides a survey of the development of African-American literature from its beginnings to the present. Emphasis is placed on historical and cultural context, themes, literary traditions, and backgrounds of the authors. Upon completion, students should be able to interpret, analyze, and respond to selected texts. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

ENG 274 Literature by Women 3 0 3
Prerequisites: Select one: ENG 112, ENG 113, ENG 114
Corequisites: None
This course provides an analytical study of the works of several women authors. Emphasis is placed on the historical and cultural contexts, themes and aesthetic features of individual works, and biographical backgrounds of the authors. Upon completion, students should be able to interpret, analyze, and discuss selected works. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

Environmental Science

ENV 110 Environmental Science 3 0 3
Prerequisites: None
Corequisites: ENV 110A
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
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
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
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
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
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
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, IPO's, 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
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
This course provides an overview of the history, development, methods, systems, and regulations as they apply to the fire protection field. Topics include history, evolution, statistics, suppression, organizations, careers, curriculum, and other related topics. Upon completion, students should be able to demonstrate a broad understanding of the fire protection field.

FIP 124 Fire Prevention & Public Education 3 0 3
Prerequisites: None
Corequisites: None
This course introduces fire prevention concepts as they relate to community and industrial operations. Topics include the development and maintenance of fire prevention programs, educational programs, and inspection programs. Upon completion, students should be able to research, develop, and present a fire safety program to a citizens or industrial group.

FIP 128 Detection and Investigation 3 0 3
Prerequisites: None
Corequisites: None
This course covers procedures for determining the origin and cause of accidental and incendiary fires. Topics include collection and preservation of evidence, detection and determination of accelerants, courtroom procedure and testimony, and documentation of the fire scene. Upon completion, students should be able to conduct a competent fire investigation and present those findings to appropriate officials or equivalent.

FIP 132 Building Construction 3 0 3
Prerequisites: None
Corequisites: None
This course covers the principles and practices related to various types of building construction, including residential and commercial, as impacted by fire conditions. Topics include types of construction and related elements, fire resistive aspects of construction materials, building codes, collapse, and other related topics. Upon completion, students should be able to understand and recognize various types of construction and their positive or negative aspects as related to fire conditions.

FIP 136 Inspections & Codes 3 0 3
Prerequisites: None
Corequisites: None
This course covers the fundamentals of fire and building codes and procedures to conduct an inspection. Topics include review of fire and building codes, writing inspection reports, identifying hazards, plan reviews, site sketches, and other related topics. Upon completion, students should be able to conduct a fire code compliance inspection and produce a written report.

FIP 140 Industrial Fire Protection 3 0 3
Prerequisites: None
Corequisites: None
This course covers fire protection systems in industrial facilities. Topics include applicable health and safety standards, insurance carrier regulations, other regulatory agencies, hazards of local industries, fire brigade operation, and loss prevention programs. Upon completion, students should be able to prepare a procedure to plan, organize, and evaluate an industrial facility's fire protection.

FIP 152 Fire Protection Law 3 0 3
Prerequisites: None
Corequisites: None
This course covers fire protection law. Topics include torts, legal terms, contracts, liability, review of case histories, and other related topics. Upon completion, students should be able to discuss laws, codes, and ordinances as they relate to fire protection.

*The numbers following course titles indicate **class**, **lab**, **clinic/co-op/shop**, and **credit** hours, respectively.*
When only three numbers are listed, the middle number always designates lab hours.

FIP 220 Fire Fighting Strategies 3 0 3
Prerequisites: None
Corequisites: None
This course provides preparation for command of initial incident operations involving emergencies within both the public and private sector. Topics include incident management, fire-ground tactics and strategies, incident safety, and command/control of emergency operations. Upon completion, students should be able to describe the initial incident system as it relates to operations involving various emergencies in fire and non-fire situations.

FIP 224 Fire Instructor I & II 4 0 4
Prerequisites: None
Corequisites: None
This course covers the knowledge, skills, and abilities needed to train others in fire service operations. Topics include planning, presenting, and evaluating lesson plans, learning styles, use of media, communication, and other related topics. Upon completion, students should be able to meet the requirements of the Fire Instructor I and II objectives from National Fire Protection Association (NFPA) 1041.

FIP 228 Local Government Finance 3 0 3
Prerequisites: None
Corequisites: None
This course introduces local governmental financial principles and practices. Topics include budget preparation and justification, revenue policies, statutory requirements, taxation, audits, and the economic climate. Upon completion, students should be able to comprehend the importance of finance as it applies to the operation of a department.

FIP 230 Chemistry of Hazardous Materials I 5 0 5
Prerequisites: None
Corequisites: None
This course covers the evaluation of hazardous materials. Topics include use of the periodic table, hydrocarbon derivatives, placards and labels, parameters of combustion, and spill and leak mitigation. Upon completion, students should be able to demonstrate knowledge of the chemical behavior of hazardous materials.

FIP 232 Hydraulics & 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
This course covers the flow of fluids through fire hoses, nozzles, appliances, pumps, standpipes, water mains, and other devices. Emphasis is placed on supply and delivery systems, fire flow testing, hydraulic calculations, and other related topics. Upon completion, students should be able to perform hydraulic calculations, conduct water availability tests, and demonstrate knowledge of water distribution systems.

FIP 236 Emergency Management 3 0 3
Prerequisites: None
Corequisites: None
This course covers the four phases of emergency management: mitigation, preparedness, response, and recovery. Topics include organizing for emergency management, coordinating for community resources, public sector liability, and the roles of government agencies at all levels. Upon completion, students should be able to demonstrate an understanding of comprehensive emergency management and the integrated emergency management system.

FIP 240 Fire Service Supervision 3 0 3
Prerequisites: None
Corequisites: None
This course covers supervisory skills and practices in the fire protection field. Topics include the supervisor's job, supervision skills, the changing work environment, managing change, organizing for results, discipline and grievances, and loss control. Upon completion, students should be able to demonstrate an understanding of the roles and responsibilities of the effective fire service supervisor.

FIP 260 Fire Protection Planning 3 0 3
Prerequisites: None
Corequisites: None
This course covers the need for a comprehensive approach to fire protection planning. Topics include the planning process, using an advisory committee, establishing goals and objectives, and techniques used to approve and implement a plan. Upon completion, students should be able to demonstrate a working knowledge of the concepts and principles of planning as it relates to fire protection.

FIP 276 Managing Fire Services 3 0 3
Prerequisites: None
Corequisites: None
This course provides an overview of fire department operative services. Topics include finance, staffing, equipment, code enforcement, management information, specialized services, legal issues, planning, and other related topics. Upon completion, students should be able to understand concepts and apply fire department management and operations principles.

French

FRE 111 Elementary French I 3 0 3
Prerequisites: None
Corequisites: FRE 181
This course introduces the fundamental elements of the French language within a cultural context. Emphasis is placed on the development of basic listening, speaking, reading, and writing skills. Upon completion, students should be able to comprehend and respond with grammatical accuracy to spoken and written French and demonstrate cultural awareness. Lab practice is expected of students. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

FRE 112 Elementary French II 3 0 3
Prerequisites: FRE 111
Corequisites: FRE 182
This course is a continuation of FRE 111 focusing on the fundamental elements of the French language within a cultural context. Emphasis is placed on the progressive development of listening, speaking, reading, and writing skills. Upon completion, students should be able to comprehend and respond with increasing proficiency to spoken and written French and demonstrate further cultural awareness. Lab practice is expected of students. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

FRE 181 French Lab 1 0 2 1
Prerequisites: None
Corequisites: FRE 111
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 pre-major and/or elective course requirement.

FRE 182 French Lab 2 0 2 1
Prerequisites: FRE 181
Corequisites: FRE 112
This course provides an opportunity to enhance acquisition of the fundamental elements of the French language. Emphasis is placed on the progressive development of basic listening, speaking, reading, and writing skills through the use of supplementary learning media and materials. Upon completion, students should be able to comprehend and respond with increasing proficiency to spoken and written French and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

FRE 211 Intermediate French I 3 0 3
Prerequisites: FRE 112
Corequisites: None
This course provides a review and expansion of the essential skills of the French language. Emphasis is placed on the study of authentic and representative literary and cultural texts. Upon completion, students should be able to communicate effectively, accurately, and creatively about the past, present, and future. Lab practice is expected of students. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

FRE 212 Intermediate French II 3 0 3
Prerequisites: FRE 211
Corequisites: None
This course is a continuation of FRE 211. Emphasis is placed on the continuing study of authentic and representative literary and cultural texts. Upon completion, students should be able to communicate spontaneously and accurately with increasing complexity and sophistication. Lab practice is expected of students. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

Film and Video Production

FVP 250 Production Specialties I 1 6 3
Prerequisites: None
Corequisites: None
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
This course introduces basic landforms and geological processes. Topics include rocks, minerals, volcanoes, fluvial processes, geological history, plate tectonics, glaciers, and coastal dynamics. Upon completion, students should be able to describe basic geological processes that shape the earth. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.

GEL 113 Historical Geology 3 2 4
Prerequisites: GEL 111 or GEL 120
Corequisites: None
This course covers the geological history of the earth and its life forms. Emphasis is placed on the study of rock strata, fossil groups, and geological time. Upon completion, students should be able to identify major fossil groups and associated rock strata and approximate ages of geological formations. This course has been approved to satisfy the Comprehensive Articulation Agreement general educational core requirement in natural sciences/mathematics.

GEL 230 Environmental Geology 3 2 4
Prerequisites: GEL 111, GEL 120 or PHS 130
Corequisites: None
This course provides insights into geologic forces that cause environmental changes influencing man's activities. Emphasis is placed on natural hazards and disasters caused by geologic forces. Upon completion, students should be able to relate major hazards and disasters to the geologic forces responsible for their occurrence. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.

Geographic Information Systems

GIS 111 Introduction to GIS 2 2 3
Prerequisites: None
Corequisites: None
This course introduces the hardware and software components of a Geographic Information System and reviews GIS applications. Topics include data structures and basic functions, methods of data capture and sources of data, and the nature and characteristics of spatial data and objects. Upon completion, students should be able to identify GIS hardware components, typical operations, 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 pre-major and/or elective course requirement.

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When only three numbers are listed, the middle number always designates lab hours.

GIS 112 Introduction to GPS 2 2 3
Prerequisites: SRV 110
Corequisites: None
This course provides an overview of Global Positioning Systems (GPS). Topics include the theory, implementation, and operations of GPS, as well as alternate data source remote sensing. Upon completion, students should be able to demonstrate an understanding of the fundamentals of GPS.

GIS 120 Introduction to Geodesy 2 2 3
Prerequisites: GIS 111
Corequisites: None
This course introduces the fundamental concepts behind map projections, datums, and coordinate systems. Topics include the theory of how the earth's shape is defined and how geographic features are positioned using spherical coordinate systems. Upon completion, students should be able to demonstrate an understanding of the fundamentals of geodesy as it relates to the measurement and representation of the earth.

GIS 121 Georeferencing & Mapping 2 2 3
Prerequisites: GIS 111
Corequisites: None
This course introduces coordinate systems, fundamentals of surveying, and cartography. Topics include the theory, acquisition, and use of locational data using both continuous and discrete georeferencing methods. Upon completion, students should be able to identify appropriate coordinate systems for a situation and translate data into correct map form.

GIS 125 CAD for GIS 2 2 3
Prerequisites: None
Corequisites: None
This course introduces the concepts of Computer Aided Drafting (CAD) as well as software that is used for building geographic data for a GIS. Emphasis is placed on the learning of basic commands used in building spatial data. Upon completion, students will be able to operate within a CAD environment.

GIS 215 GIS Data Models 2 2 3
Prerequisites: GIS 111
Corequisites: None
This course covers interpreting and understanding of a variety data formats available in GIS. Topics include the similarities and differences between data models as well as how data is treated differently within each format, to include the conversion of data between different environments. Upon completion, students should be able to demonstrate an understanding of the fundamentals of GIS data storage and interoperability.

GIS 222 Internet Mapping GIS 2 2 3
Prerequisites: WEB 115 and GIS 111
Corequisites: None
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: DBA 110 and GIS 111
Corequisites: None
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 database management systems.

GIS 240 Air Photo Interpretation 2 2 3
Prerequisites: GIS 111
Corequisites: None
This course is designed to introduce the student to remote sensing, photogrammetry and various components of land use mapping. Emphasis is placed on the art and science of aerial photo interpretation. Upon completion, students will be able to review, gather and analyze data from diverse forms of image maps.

GIS 262 GIS Programming Trends 2 2 3
Prerequisites: GIS 111
Corequisites: None
This course introduces non-proprietary and innovative software used in geospatial technology. Topics will include an overview of open source and/or emerging software used in geographic information systems. Upon completion, students should be able to demonstrate current trends and issues in new technologies as they relate to the geospatial information.

Health

HEA 110 Personal Health/Wellness 3 0 3
Prerequisites: None
Corequisites: None
This course provides an introduction to basic personal health and wellness. Emphasis is placed on current health issues such as nutrition, mental health, and fitness. Upon completion, students should be able to demonstrate an understanding of the factors necessary to the maintenance of health and wellness. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

HEA 112 First Aid and CPR 1 2 2
Prerequisites: None
Corequisites: None
This course introduces the basics of emergency first aid treatment. Topics include rescue breathing, CPR, first aid for choking and bleeding, and other first aid procedures. Upon completion, students should be able to demonstrate skills in providing emergency care for the sick and injured until medical help can be obtained. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

Healthcare Business Informatics

HBI 110 Issues and Trends in HBI 3 0 3
Prerequisites: None
Corequisites: None
This course is a survey of current and emerging technology applications and data standards in the healthcare industry. Topics include the history, implementation, use, management, and impact of information technology in healthcare settings. Upon completion, students should have an understanding of the current trends and issues in healthcare informatics.

HBI 113 Survey of Med Insurance 3 0 3
Prerequisites: None
Corequisites: None
This course is a survey of the healthcare insurance system. Emphasis is placed on the foundation necessary for understanding the healthcare delivery system, terminology and practices of healthcare insurance, and provider reimbursement. Upon completion, students should have an understanding of healthcare insurance and how outcomes are addressed through healthcare informatics.

HBI 250 Data Mgmt and Utilization 2 2 3
Prerequisites: DBA 110, DBA 120, or DBA 210
Corequisites: None
This course covers the management and usage of data in healthcare settings according to current practices in healthcare informatics. Topics include data warehousing, data integrity, data security, data mining, and report generating in healthcare settings. Upon completion, students should be able to demonstrate an understanding of using healthcare data to support reporting and decision making in healthcare settings.

HBI 289 HBI Project 1 4 3
Prerequisites: HBI 250
Corequisites: None
This course provides an opportunity to complete a significant healthcare business informatics 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 healthcare informatics project from the definition phase through implementation.

Heavy Equipment Technology

***HET 110 Diesel Engines 3 9 6**
Prerequisites: None
Corequisites: None
This course introduces theory, design, terminology, and operating adjustments for diesel engines. Emphasis is placed on safety, theory of operation, inspection, measuring, and rebuilding diesel engines according to factory specifications. Upon completion, students should be able to measure, diagnose problems, and repair diesel engines.

***HET 114 Power Trains 3 6 5**
Prerequisites: None
Corequisites: None
This course introduces power transmission devices. Topics include function and operation of gears, chains, clutches, planetary gears, drive lines, differentials, and transmissions. Upon completion, students should be able to identify, research specifications, repair, and adjust power train components.

***HET 115 Electronic Engines 2 3 3**
Prerequisites: None
Corequisites: HET 112
This course introduces the principles of electronically controlled diesel engines. Emphasis is placed on testing and adjusting diesel engines in accordance with manufacturers' specifications. Upon completion, students should be able to diagnose, test, and calibrate electronically controlled diesel engines.

***HET 119 Mechanical Transmissions 2 2 3**
Prerequisites: None
Corequisites: None
This course introduces the operating principles of mechanical medium and heavy duty truck transmissions. Topics include multiple counter shafts, power take-offs, sliding idler clutches, and friction clutches. Upon completion, students should be able to diagnose, inspect, and repair mechanical transmissions.

***HET 125 Preventive Maintenance 1 3 2**
Prerequisites: None
Corequisites: None
This course introduces preventive maintenance practices used on medium and heavy duty vehicles and rolling assemblies. Topics include preventive maintenance schedules, services, DOT rules and regulations, and roadability. Upon completion, students should be able to set up and follow a preventive maintenance schedule as directed by manufacturers.

***HET 231 Medium/Heavy Duty Brake Systems 1 3 2**
Prerequisites: None
Corequisites: None
This course covers the theory and repair of braking systems used in medium and heavy duty vehicles. Topics include air, hydraulic, and ABS system diagnosis and repair. Upon completion, students should be able to troubleshoot, adjust, and repair braking systems on medium and heavy duty vehicles.

***HET 233 Suspension and Steering 2 4 4**
Prerequisites: None
Corequisites: None
This course introduces the theory and principles of medium and heavy duty steering and suspension systems. Topics include wheel and tire problems, frame members, fifth wheel, bearings, and coupling systems. Upon completion, students should be able to troubleshoot, adjust, and repair suspension and steering components on medium and heavy duty vehicles.

History

HIS 111 World Civilizations I 3 0 3
Prerequisites: RED 090, ENG 090
Corequisites: None
This course introduces world history from the dawn of civilization to the early modern era. Topics include Eurasian, African, American, and Greco-Roman civilizations and Christian, Islamic and Byzantine cultures. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in pre-modern world civilizations. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

HIS 112 World Civilizations II 3 0 3
Prerequisites: RED 090, ENG 090
Corequisites: None
This course introduces world history from the early modern era to the present. Topics include the cultures of Africa, Europe, India, China, Japan, and the Americas. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in modern world civilizations. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

HIS 131 American History I 3 0 3
Prerequisites: RED 090, ENG 090
Corequisites: None
This course is a survey of American history from pre-history through the Civil War era. Topics include the migrations to the Americas, the colonial and revolutionary periods, the development of the Republic, and the Civil War. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in early American history. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

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HIS 132 American History II 3 0 3
Prerequisites: RED 090, ENG 090
Corequisites: None
This course is a survey of American history from the Civil War era to the present. Topics include industrialization, immigration, the Great Depression, the major wars, the Cold War, and social conflict. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in American history since the Civil War. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

HIS 162 Women and History 3 0 3
Prerequisites: None
Corequisites: None
This course surveys the experience of women in historical perspective. Topics include the experiences and contributions of women in culture, politics, economics, science, and religion. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural contributions of women in history. This course covers American women from colonial times to the present. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

HIS 212 Medieval History 3 0 3
Prerequisites: None
Corequisites: None
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 pre-major and/or elective course requirement.

HIS 221 African-American History 3 0 3
Prerequisites: None
Corequisites: None
This course covers African-American history from the Colonial period to the present. Topics include African origins, the slave trade, the Civil War, Reconstruction, the Jim Crow era, the civil rights movement, and contributions of African Americans. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in the history of African Americans. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

HIS 226 The Civil War 3 0 3
Prerequisites: None
Corequisites: None
This course examines the social, political, economic, and ideological forces that led to the Civil War and Reconstruction. Topics include regional conflicts and sectionalism, dissolution of the Union, military campaigns, and the War's 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 pre-major and/or elective course requirement.

HIS 227 Native American History 3 0 3
Prerequisites: None
Corequisites: None
This course surveys the history and cultures of Native Americans from pre-history to the present. Topics include Native American civilizations, relations with Europeans, and the continuing evolution of Native American cultures. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments among Native Americans. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

HIS 236 North Carolina History 3 0 3
Prerequisites: None
Corequisites: None
This course is a study of geographical, political, economic, and social conditions existing in North Carolina from America's discovery to the present. Topics include native and immigrant backgrounds; colonial, antebellum, and Reconstruction periods; party politics; race relations; and the transition from an agrarian to an industrial economy. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in North Carolina. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

Hospitality Management

HRM 110 Intro to Hosp & Tourism 3 0 3
Prerequisites: DMA 030, ENG 080, RED 090 or placement
Corequisites: None
This course covers the growth and progress of the hospitality industry. Topics include tourism, lodging, resorts, gaming, restaurants, foodservice and clubs. Upon completion, students should be able to demonstrate an understanding of the background, context, and career opportunities that exist within the hospitality industry.

***HRM 120 Front Office Procedures 3 0 3**
Prerequisites: DMA 030, ENG 080, RED 090 or placement
Corequisites: HRM 120A
This course introduces a systematic approach to lodging front office procedures. Topics include reservations, registration, guest satisfaction, occupancy and revenue 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 management of bed and breakfast facilities and the housekeeping requirements for lodging, its operation and management, and its working relationship with the front office.

***HRM 120A Front Office Procedures Lab 0 2 1**
Prerequisites: DMA 030, ENG 080, RED 090 or placement
Corequisites: HRM 120
This course provides a laboratory experience for enhancing student skills in lodging front office procedures. Emphasis is placed on practical computer applications of reservations, registration, guest satisfaction, occupancy and revenue management, security, interdepartmental communications, and related guest services. Upon completion, students should be able to demonstrate a basic proficiency in computer-based, front office applications. This course will also examine computer applications associated with bed and breakfast facilities.

HRM 124 Guest Service Management 2 2 3
Prerequisites: DMA 030, ENG 080, RED 090 or placement
Corequisites: CUL 142
This course is designed to provide an introduction to the culture of dining room service management. Emphasis is placed on the dignity and psychology of service work, dining room organization/infrastructure, 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 135 Facilities Management 3 0 3**
Prerequisites: DMA 030, ENG 080, RED 090 or placement
Corequisites: None
This course introduces the basic elements of planning and designing hospitality facilities; including environmental impacts, maintenance, and upkeep. Topics include equipment and plant preventive maintenance, engineering, interior design, space utilization, remodeling and expansion, and traffic and work flow patterns. Upon completion, students should be able to demonstrate an understanding of the planning, design, national certification, and maintenance of hospitality physical plants and equipment. This course will also examine facility requirements unique to bed and breakfast and other alternative lodging experiences.

***HRM 140 Legal Issues–Hospitality 3 0 3**
Prerequisites: DMA 030, ENG 080, RED 090 or placement
Corequisites: None
This course covers the rights and responsibilities that the law grants to or imposes upon the hospitality industry. Topics include federal and state regulations, historical and current practices, safety and security, risk management, loss prevention, relevant torts, and contracts. Upon completion, students should be able to demonstrate an understanding of the legal system and the concepts necessary to prevent or minimize organizational liability.

***HRM 210 Meetings & Event Planning 3 0 3**
Prerequisites: DMA 030, ENG 080, RED 090 or placement
Corequisites: None
This course introduces concepts related to the planning and operation of conventions, trade shows, professional meetings, and foodservice events. Emphasis is placed on methods of marketing, selling, organizing, and producing conventions, events, and trade shows that will increase financial and environmental value. Upon completion, students should be able to demonstrate an understanding of management principles for 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
This course provides an overview of the responsibilities and activities encountered in managing a food and beverage operation. Topics include planning, organization, accounting, marketing, trends, and human resources from an integrated managerial viewpoint. Upon completion, students should be able to demonstrate an understanding of the operation of a restaurant. Students will also examine menu design, layout, marketing, concept development, target consumers and trends.

***HRM 215A Restaurant Management Lab 0 2 1**
Prerequisites: CUL 135, CUL 135A and HRM 124
Corequisites: HRM 215
This course provides a laboratory experience for enhancing student skills in the responsibilities and activities encountered in managing a food and beverage operation. Emphasis is placed on practical applications of planning, organization, accounting, marketing, trends, and human resources from an integrated managerial viewpoint. Upon completion, students should be able to demonstrate a basic proficiency in restaurant management operations which may include overseeing and execution of production and service. Students will analyze menu mix and guest feedback as it relates to the overall success of foodservice operations.

***HRM 220 Cost Control–Food & Bev 3 0 3**
Prerequisites: DMA 030, ENG 080, RED 090 or placement
Corequisites: None
This course introduces controls and accounting procedures as applied to costs in the hospitality industry. Topics include reports, cost control, planning and forecasting, control systems, financial statements, operational efficiencies, labor controls and scheduling. Upon completion, students should be able to demonstrate an understanding of food, beverage, and labor cost control systems for operational troubleshooting and problem solving.

HRM 225 Beverage Management 3 0 3
Prerequisites: ENG 080, RED 090 or placement
Corequisites: None
This course introduces the management of beverages served in hospitality operations. Topics include history and trends; service, procurement; and storage; knowledge and control of wines and fermented/distilled beverages; and non-alcoholic beverages, coffees, and teas. Upon completion, students should be able to demonstrate an understanding of responsible alcohol service and the knowledge of beverages consumed in a hospitality operation.

***HRM 240 Marketing for Hospitality 3 0 3**
Prerequisites: ENG 080, RED 090 or placement
Corequisites: None
This course covers planning, organizing, directing, and analyzing the results of marketing programs for the hospitality industry. Emphasis is placed on target marketing, marketing mix, analysis, product and image development, use of current media, sales planning, advertising, public relations, and collateral materials. Upon completion, students should be able to apply the marketing process as it relates to the hospitality industry.

***HRM 245 Human Resource Mgmt-Hosp 3 0 3**
Prerequisites: ENG 080, RED 090 or placement
Corequisites: None
This course introduces a systematic approach to human resource management in the hospitality industry. Topics include training/development, staffing, selection, hiring, recruitment, evaluation, benefit administration, employee relations, labor regulations/laws, discipline, motivation, productivity, shift management, contract employees and organizational culture. Upon completion, students should be able to apply human resource management skills for the hospitality industry.

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HRM 260 Procurement for Hosp 3 0 3
Prerequisites: DMA 030, ENG 080, RED 090 or placement
Corequisites: None
This course provides information for management decisions regarding needs analysis and fulfillment for hospitality operations. Emphasis is placed on supply chain sourcing, environmental impacts, procurement technologies, and packaging of products such as food, beverages, supplies, furniture, and equipment. Upon completion, students should be able to demonstrate competence in planning and executing the procurement function.

***HRM 275 Leadership–Hospitality 3 0 3**
Prerequisites: HRM 245
Corequisites: None
This course introduces leadership traits, styles, and the roles and responsibilities of successful hospitality leaders while developing the student's personal leadership skills. Topics include formal and informal hospitality leadership; defining effective and ineffective leadership behavior; and leadership organizational change and planning within the hospitality industry. Upon completion, students will be able to apply appropriate leadership actions in real-world situations ranging from local to global hospitality environments.

***HRM 280 Mgmt Problems–Hospitality 3 0 3**
Prerequisites: ACC 120, CIS 110, COE 112, CUL 142, HRM 110, HRM 120, HRM 210, HRM 215, HRM 220, HRM 225, HRM 240, HRM 245
Corequisites: HRM 135 or HRM 275
This course is designed to introduce students to timely issues within the hospitality industry and is intended to move students into a managerial mindset. Emphasis is placed on problem-solving skills using currently available resources. Upon completion, students should be able to demonstrate knowledge of how hospitality management principles may be applied to real challenges facing industry managers.

Human Services

***HSE 110 Introduction to Human Services 2 2 0 3**
Prerequisites: None
Corequisites: None
This course introduces the human services field, including the history, agencies, roles, and careers. Topics include personal/professional characteristics, diverse populations, community resources, disciplines in the field, systems, ethical standards, and major theoretical and treatment approaches. Upon completion, students should be able to identify the knowledge, skills, and roles of the human services worker. Check with the North Carolina Substance Abuse Professional Practice Board (NCSAPPB) to verify if this course has been approved for training/education credit for substance abuse certification/recertification.

***HSE 112 Group Process I 1 2 0 2**
Prerequisites: None
Corequisites: None
This course introduces interpersonal concepts and group dynamics. Emphasis is placed on self-awareness facilitated by experiential learning in small groups with analysis of personal experiences and the behavior of others. Upon completion, students should be able to show competence in identifying and explaining how people are influenced by their interactions in group settings. Check with the North Carolina Substance Abuse Professional Practice Board (NCSAPPB) to verify if this course has been approved for training/education credit for substance abuse certification/recertification.

***HSE 123 Interviewing Techniques 2 2 0 3**
Prerequisites: None
Corequisites: None
This course covers the purpose, structure, focus, and techniques employed in effective interviewing. Emphasis is placed on observing, attending, listening, responding, recording, and summarizing of personal histories with instructor supervision. Upon completion, students should be able to perform the basic interviewing skills needed to function in the helping relationship. Check with the North Carolina Substance Abuse Professional Practice Board (NCSAPPB) to verify if this course has been approved for training/education credit for substance abuse certification/recertification.

***HSE 125 Counseling 2 2 0 3**
Prerequisites: None
Corequisites: None
This course covers the major approaches to psychotherapy and counseling, including theory, characteristics, and techniques. Emphasis is placed on facilitation of self-exploration, problem-solving, decision-making, and personal growth. Upon completion, students should be able to understand various theories of counseling and demonstrate counseling techniques. Check with the North Carolina Substance Abuse Professional Practice Board (NCSAPPB) to verify if this course has been approved for training/education credit for substance abuse certification/recertification.

***HSE 210 Human Services Issues 2 0 0 2**
Prerequisites: None
Corequisites: None
This course covers current issues and trends in the field of human services. Emphasis is placed on contemporary topics with relevance to special issues in a 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. Check with the North Carolina Substance Abuse Professional Practice Board (NCSAPPB) to verify if this course has been approved for training/education credit for substance abuse certification/recertification

***HSE 220 Case Management 2 2 0 3**
Prerequisites: HSE 110
Corequisites: None
This course covers the variety of tasks associated with professional case management. Topics include treatment planning, needs assessment, referral procedures, and follow-up and integration of services. Upon completion, students should be able to effectively manage the care of the whole person from initial contact through termination of services. Check with the North Carolina Substance Abuse Professional Practice Board (NCSAPPB) to verify if this course has been approved for training/education credit for substance abuse certification/recertification

***HSE 225 Crisis Intervention 3 0 0 3**
Prerequisites: None
Corequisites: None
This course introduces the basic theories and principles of crisis intervention. Emphasis is placed on identifying and demonstrating appropriate and differential techniques for intervening in various crisis situations. Upon completion, students should be able to assess crisis situations and respond appropriately. Check with the North Carolina Substance Abuse Professional Practice Board (NCSAPPB) to verify if this course has been approved for training/education credit for substance abuse certification/recertification.

HSE 240 Issues in Client Services 3 0 0 3
Prerequisites: None
Corequisites: None
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. Check with the North Carolina Substance Abuse Professional Practice Board (NCSAPPB) to verify if this course has been approved for training/education credit for substance abuse certification/ recertification.

HSE 251 Activities Planning 2 2 0 3
Prerequisites: None
Corequisites: None
This course introduces skills and techniques used in recreation and leisure activities to enhance the lives of special populations. Emphasis is placed on music, art, and recreational activities. Upon completion, students should be able to define, plan, and adapt recreational activities for selected groups and individuals to maintain quality of life.

Humanities

HUM 110 Technology and Society 3 0 3
Prerequisites: None
Corequisites: None
This course considers technological change from historical, artistic, and philosophical perspectives and its effect on human needs and concerns. Emphasis is placed on the causes and consequences of technological change. Upon completion, students should be able to critically evaluate the implications of technology. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

HUM 115 Critical Thinking 3 0 3
Prerequisites: ENG 095 or ENG 090 and RED 090
Corequisites: None
This course introduces the use of critical thinking skills in the context of human conflict. Emphasis is placed on evaluating information, problem solving, approaching cross-cultural perspectives, and resolving controversies and dilemmas. Upon completion, students should be able to demonstrate orally and in writing the use of critical thinking skills in the analysis of appropriate texts. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

HUM 120 Cultural Studies 3 0 3
Prerequisites: None
Corequisites: None
This course introduces the distinctive features of a particular culture. Topics include art, history, music, literature, politics, philosophy, and religion. Upon completion, students should be able to appreciate the unique character of the study culture. This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.

HUM 121 The Nature of America 3 0 3
Prerequisites: None
Corequisites: None
This course provides an interdisicplinary survey of the American cultural, social, and political experience. Emphasis is placed on the multicultural character of American society, distinctive qualities of various regions, and the American political system. Upon completion, students should be able to analyze significant cultural, social, and political aspects of American life. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

HUM 122 Southern Culture 3 0 3
Prerequisites: None
Corequisites: None
This course explores the major qualities that make the South a distinct region. Topics include music, politics, literature, art, religion, race relations, and the role of social class in historical and contemporary contexts. Upon completion, students should be able to identify the characteristics that distinguish Southern culture. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

HUM 123 Appalachian Culture 3 0 3
Prerequisites: None
Corequisites: None
This course provides an interdisciplinary study of the unique features of Appalachian culture. Topics include historical, political, sociological, psychological, and artistic features which distinguish this region. Upon completion, students should be able to demonstrate a broad-based awareness and appreciation of Appalachian culture. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

HUM 130 Myth in Human Culture 3 0 3
Prerequisites: None
Corequisites: None
This course provides an in-depth study of myths and legends. Topics include the varied sources of myths and their influence on the individual and society within diverse cultural contexts. Upon completion, students should be able to demonstrate a general familiarity with myths and a broad-based understanding of the influence of myths and legends on modern culture. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

HUM 150 American Women's Studies 3 0 3
Prerequisites: None
Corequisites: None
This course provides an inter-disciplinary study of the history, literature, and social roles of American women from Colonial times to the present. Emphasis is placed on women's roles as reflected in American language usage, education, law, the workplace, and mainstream culture. Upon completion, students should be able to identify and analyze the roles of women as reflected in various cultural forms. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/ fine arts.

HUM 160 Introduction to Film 2 2 3
Prerequisites: ENG 111
Corequisites: None
This course introduces the fundamental elements of film artistry and production. Topics include film styles, history, and production techniques, as well as the social values reflected in film art. 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
This course introduces the humanities as a record in literature, music, art, history, religion, and philosophy of humankind's answers to the fundamental questions of existence. Emphasis is placed on the interconnectedness of various aspects of cultures from ancient through early modern times. Upon completion, students should be able to identify significant figures and cultural contributions of the periods studied. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

HUM 212 Humanities II 3 0 3
Prerequisites: ENG 111
Corequisites: None
This course introduces the humanities as a record in literature, music, art, history, religion, and philosophy of humankind's answers to the fundamental questions of existence. Emphasis is placed on the interconnectedness of various aspects of cultures from early modern times to the present. Upon completion, students should be able to identify significant figures and cultural contributions of the periods studied. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

HUM 220 Human Values and Meaning 3 0 3
Prerequisites: ENG 111, Enrollment in the Associate in Arts program
Corequisites: None
This course presents some major dimensions of human experience as reflected in art, music, literature, philosophy, and history. Topics include the search for identity, the quest for knowledge, the need for love, the individual and society, and the meaning of life. Upon completion, students should be able to recognize interdisciplinary connections and distinguish between open and closed questions and between narrative and scientific models of understanding. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

HUM 230 Leadership Development 3 0 3
Prerequisites: ENG 111
Corequisites: None
This course explores the theories and techniques of leadership and group process. Emphasis is placed on leadership styles, theories of group dynamics, and the moral and ethical responsibilities of leadership. Upon completion, students should be able to identify and analyze a personal philosophy and style of leadership and integrate these concepts in various practical situations. This course has been approved for transfer under the CAA as a pre-major and/or elective course requirement.

Hydraulics

***HYD 110 Hydraulics/Pneumatics I 2 3 3**
Prerequisites: DMA 050 or placement
Corequisites: None
This course introduces the basic components and functions of hydraulic and pneumatic systems. Topics include standard symbols, pumps, control valves, control assemblies, actuators, FRL, maintenance procedures, and switching and control devices. Upon completion, students should be able to understand the operation of a fluid power system, including design, application, and troubleshooting.

HYD 112 Hydraulics/Medium/Heavy Duty 1 2 2
Prerequisites: None
Corequisites: None
This course introduces hydraulic theory and applications as applied to mobile equipment. Topics include component studies such as pumps, motors, valves, cylinders, filters, reservoirs, lines, and fittings. Upon completion, students should be able to identify, diagnose, test, and repair hydraulic systems using schematics and technical manuals.

***HYD 210 Advanced Hydraulics 1 3 2**
Prerequisites: Take One Course: HYD-110, HYD-111, or HYD-112
Corequisites: None
This course covers advanced hydraulic systems. Emphasis is placed on advanced hydraulic systems and components, troubleshooting, and other related topics. Upon completion, students should be able to demonstrate an understanding of the installation, application, operation, and maintenance of hydraulic components and systems.

Industrial Science

***ISC 121 Environmental Health and Safety 3 0 3**
Prerequisites: None
Corequisites: None
This course covers workplace environmental health and safety concepts. Emphasis is placed on managing the implementation and enforcement of environmental health and safety regulations and on preventing accidents, injuries, and illnesses. Upon completion, students should be able to demonstrate an understanding of basic concepts of environmental health and safety.

***ISC 132 Mfg Quality Control 2 3 3**
Prerequisites: None
Corequisites: None
This course introduces quality concepts and techniques used in industry. Topics include elementary statistics and probability, process control, process capability, and quality improvement tools. Upon completion, students should be able to demonstrate an understanding of the concepts and principles of quality and apply them to the work environment. Proficiency using spreadsheet software required for success in this course.

***ISC 222 Project Planning/Control 1 2 2**
Prerequisites: None
Corequisites: None
This course covers how to plan, schedule and control projects typical in manufacturing and service industries. Topics include fundamental project management concepts and hands-on computer application experience with process flow charting and PERT/CPM project managers. Upon completion, students should be able to plan, schedule and control projects using state-of-the-art computer application programs.

***ISC 255 Engineering Economy 2 2 3**
Prerequisite: DMA 040 or Placement, and EGR 125
Corequisites: None
This course covers the process of economic evaluation of manufacturing industrial alternatives such as equipment selection, replacement studies, and cost reduction proposals. Topics include discounted cash flows, time value of money, income tax considerations, internal rates of return, and comparison of alternatives using computer programs. Upon completion, students should be able to analyze complex manufacturing alternatives based on engineering economy principles.

Journalism

JOU 216 Writing for Mass Media 2 2 3
Prerequisites: None
Corequisites: None
This course is an introduction to news writing for newspapers and other print media including the techniques of news gathering, reporting, and interviewing. Emphasis is placed on basic methods of gathering information, conducting interviews, organizing a story, writing leads, writing clear, concise copy, and developing research skills. Upon completion, students should be able to write clear, concise, accurate, complete, balanced and readable news stories according to guidelines set by industry standards. This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.

Landscape Architecture

LAR 210 Prin of Landscape Arch 1 3 2
Prerequisites: DFT 151
Corequisites: None
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.

Machining

MAC 111 Machining Technology I 2 12 6
Prerequisites: None
Corequisites: None
This course introduces machining operations as they relate to the metalworking industry. Topics include machine shop safety, measuring tools, lathes, drilling machines, saws, milling machines, bench grinders, and layout instruments. Upon completion, students should be able to safely perform the basic operations of measuring, layout, drilling, sawing, turning, and milling.

MAC 112 Machining Technology II 2 12 6
Prerequisites: MAC 111
Corequisites: None
This course provides additional instruction and practice in the use of precision measuring tools, lathes, milling machines, and grinders. Emphasis is placed on setup and operation of machine tools including the selection and use of work holding devices, speeds, feeds, cutting tools, and coolants. Upon completion, students should be able to perform basic procedures on precision grinders and advanced operations of measuring, layout, drilling, sawing, turning, and milling.

MAC 121 Introduction to CNC 2 0 2
Prerequisites: None
Corequisites: None
This course introduces the concepts and capabilities of computer numerical control machine tools. Topics include setup, operation, and basic applications. Students will learn computer skills necessary for machinists. Upon completion, students should be able to explain operator safety, machine protection, data input, program preparation, and program storage.

MAC 122 CNC Turning 1 3 2
Prerequisites: BPR 111
Corequisites: None
This course introduces the programming, setup, and operation of CNC turning centers. Topics include programming formats, control functions, program editing, part production, and inspection. Upon completion, students should be able to manufacture simple parts using CNC turning centers.

MAC 124 CNC Milling 1 3 2
Prerequisites: BPR 111
Corequisites: None
This course introduces the manual programming, setup, and operation of CNC machining centers. Topics include programming formats, control functions, program editing, part production, and inspection. Upon completion, students should be able to manufacture simple parts using CNC machining centers.

MAC 151 Machining Calculations 1 2 2
Prerequisites: None
Corequisites: None
This course introduces basic calculations as they relate to machining occupations. Emphasis is placed on basic calculations and their applications in the machine shop. Upon completion, students should be able to perform basic shop calculations.

MAC 152 Advanced Machining Calculations 1 2 2
Prerequisites: None
Corequisites: None
This course combines mathematical functions with practical machine shop applications and problems. Emphasis is placed on gear ratios, lead screws, indexing problems, and their applications in the machine shop. Upon completion, students should be able to calculate solutions to machining problems.

MAC 222 Advanced CNC Turning 1 3 2
Prerequisites: MAC 122
Corequisites: None
This course covers advanced methods in setup and operation of CNC turning centers. Emphasis is placed on programming and production of complex parts. Upon completion, students should be able to demonstrate skills in programming, operations, and setup of CNC turning centers.

*The numbers following course titles indicate **class**, **lab**, **clinic/co-op/shop**, and **credit** hours, respectively.*
When only three numbers are listed, the middle number always designates lab hours.

MAC 224 Advanced CNC Milling 1 3 2
Prerequisites: MAC 124
Corequisites: None
This course covers advanced methods in setup and operation of CNC machining centers. Emphasis is placed on programming and production of complex parts. Upon completion, students should be able to demonstrate skills in programming, operations, and setup of CNC machining centers.

MAC 226 CNC EDM Machining 1 3 2
Prerequisites: None
Corequisites: None
This course introduces the programming, setup, and operation of CNC electrical discharge machines. Topics include programming formats, control functions, program editing, production of parts, and inspection. Upon completion, students should be able to manufacture simple parts using CNC electrical discharge machines.

MAC 228 Advanced CNC Processes 2 3 3
Prerequisites: None
Corequisites: None
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 234 Adv Multi-Axis Machining 2 3 3
Prerequisites: None
Corequisites: None
This course includes multi-axis machining using machining centers with multi-axis capabilities. Emphasis is placed on generation of machining center input with a CAM system and setup of pallet changer and rotary system for multi-axis machining fixtures. Upon completion, students should be able to convert CAD to output for multi-axis machining centers, including tooling, setup, and debugging processes.

MAC 241 Jigs and Fixtures I 2 6 4
Prerequisites: MAC 112
Corequisites: None
This course introduces the application and use of jigs and fixtures. Emphasis is placed on design and manufacture of simple jigs and fixtures. Upon completion, students should be able to design and build simple jigs and fixtures.

MAC 245 Mold Construction I 2 6 4
Prerequisites: MAC 112
Corequisites: None
This course introduces the principles of mold making. Topics include types, construction, and application of molds. Upon completion, students should be able to design and build simple molds.

MAC 247 Production Tooling 2 0 2
Prerequisites: MAC 111
Corequisites: None
Available: Fall, Summer
This course provides advanced study in tooling currently utilized in the production of metal parts. Emphasis is placed on the proper use of tooling used on CNC and other production machine tools. Upon completion, students should be able to choose proper tool grades based on manufacturing requirements and troubleshoot carbide tooling problems.

Mathematics

MAT 110 Mathematical Measurement 2 2 3
Prerequisites: DMA 030 or placement, MAT 120, MAT 121, MAT 161, MAT 171, or MAT 175
Corequisites: None
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: DMA 060, MAT 070, MAT 080, MAT 090, MAT 095, MAT 120, MAT 121, MAT 161, MAT 171, MAT 175
Corequisites: None
This course develops the ability to utilize mathematical skills and technology to solve problems at a level found in non-mathematics-intensive programs. Topics include applications to percent, ratio and proportion, formulas, statistics, functional notation, linear functions, 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: DMA 080 or placement
Corequisites: None
This course provides an integrated approach to technology and the skills required to manipulate, display, and interpret mathematical functions and formulas used in problem solving. Topics include simplification, evaluation, and solving of algebraic and radical functions; complex numbers; right triangle trigonometry; systems of equations; and the use of technology. Upon completion, students should be able to demonstrate an understanding of the use of mathematics and technology to solve problems and analyze and communicate results.

MAT 122 Algebra/Trigonometry II 2 2 3
Prerequisites: Select one: MAT 121, MAT 161, MAT 171, MAT 175
Corequisites: None
This course extends the concepts covered in MAT 121 to include additional topics in algebra, function analysis, and trigonometry. Topics include exponential and logarithmic functions, translation and scaling of functions, Sine Law, Cosine Law, vectors, and statistics. Upon completion, students should be able to demonstrate an understanding of the use of technology to solve problems and to analyze and communicate results.

MAT 140 Survey of Mathematics 3 0 3
Prerequisites: Select one: DMA 040 or placement, MAT 120, MAT 121, MAT 161, MAT 171, MAT 175
Corequisites: None
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. Under the CAA, this course satisfies the general education Mathematics requirement for the AA and AFA degrees. It does not satisfy the general education Mathematics requirement for the AS degree.

MAT 151 Statistics I 3 0 3
Prerequisites: Select one: DMA 050 or placement, MAT 120, MAT 121, MAT 140, MAT 161, MAT 171, MAT 175
Corequisites: MAT 151A
This course provides a project-based approach to the study of basic probability, descriptive and inferential statistics, and decision making. Emphasis is placed on measures of central tendency and dispersion, correlation, regression, discrete and continuous probability distributions, quality control, population parameter estimation, and hypothesis testing. Upon completion, students should be able to describe important characteristics of a set of data and draw inferences about a population from sample data. This course has been approved for transfer under the CAA as a general education course in Mathematics (Quantitative).

MAT 151A Statistics I Lab 0 2 1
Prerequisites: Select one: DMA 050 or placement, MAT 120, MAT 121, MAT 140, MAT 161, MAT 171, MAT 175
Corequisites: MAT 151
This course is a laboratory for MAT 151. Emphasis is placed on experiences that enhance the materials presented in the class. Upon completion, students should be able to solve problems, apply critical thinking, work in teams, and communicate effectively. This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.

MAT 161 College Algebra 3 0 3
Prerequisites: DMA 080 or placement
Corequisites: MAT 161A
This course provides an integrated technological approach to algebraic topics used in problem solving. Emphasis is placed on applications involving equations and inequalities; polynomials, rational, exponential and logarithmic functions; and graphing and data analysis/modeling. Upon completion, students should be able to choose an appropriate model to fit a data set and use the model for analysis and prediction. Under the CAA, this course satisfies the general education Mathematics requirement for the AA and AFA degrees. It does not satisfy the general education Mathematics requirement for the AS degree

MAT 161A College Algebra Lab 0 2 1
Prerequisites: DMA 080 or placement
Corequisites: MAT 161
This course is a laboratory for MAT 161. Emphasis is placed on experiences that enhance the materials presented in the class. Upon completion, students should be able to solve problems, apply critical thinking, work in teams, and communicate effectively. This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.

MAT 167 Discrete Mathematics 3 0 3
Prerequisites: Select one: MAT 121, MAT 161, MAT 171, MAT 280
Corequisites: None
This course is a study of discrete mathematics with emphasis on applications. Topics include number systems, combinations/permutations, mathematical logic/proofs, sets/counting, Boolean algebra, mathematical induction, trees/graphs, and algorithms. Upon completion, students should be able to demonstrate competence in the topics covered. This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.

MAT 171 Precalculus Algebra 3 0 3
Prerequisites: MAT 161
Corequisites: MAT 171A
This is the first of two courses designed to emphasize topics which are fundamental to the study of calculus. Emphasis is placed on equations and inequalities, functions (linear, polynomial, rational), systems of equations and inequalities, and parametric equations. Upon completion, students should be able to solve practical problems and use appropriate models for analysis and predictions. This course has been approved for transfer under the CAA as a general education course in Mathematics.

MAT 171A Precalculus Algebra Lab 0 2 1
Prerequisites: DMA 080, MAT 161 or placement
Corequisites: MAT 171
This course is a laboratory for MAT 171. Emphasis is placed on experiences that enhance the materials presented in the class. Upon completion, students should be able to solve problems, apply critical thinking, work in teams, and communicate effectively. This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.

MAT 172 Precalculus Trigonometry 3 0 3
Prerequisites: MAT 171
Corequisites: MAT 172A
This is the second of two courses designed to emphasize topics which are fundamental to the study of calculus. Emphasis is placed on properties and applications of transcendental functions and their graphs, right and oblique triangle trigonometry, conic sections, vectors, and polar coordinates. Upon completion, students should be able to solve practical problems and use appropriate models for analysis and prediction. This course has been approved for transfer under the CAA as a general education course in Mathematics.

MAT 172A Precalculus Trigonometry Lab 0 2 1
Prerequisites: MAT 171
Corequisites: MAT 172
This course is a laboratory for MAT 172. Emphasis is placed on experiences that enhance the materials presented in the class. Upon completion, students should be able to solve problems, apply critical thinking, work in teams, and communicate effectively. This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.

MAT 175 Precalculus 4 0 4
Prerequisites: Placement
Corequisites: None
This course provides an intense study of the topics which are fundamental to the study of calculus. Emphasis is placed on functions and their graphs with special attention to polynomial, rational, exponential, logarithmic and trigonometric functions, and analytic trigonometry. Upon completion, students should be able to solve practical problems and use appropriate models for analysis and prediction. This course has been approved for transfer under the CAA as a general education course in Mathematics.

MAT 271 Calculus I 3 2 4
Prerequisites: MAT 172 or MAT 175
Corequisites: None
This course covers in depth the differential calculus portion of a three-course calculus sequence. Topics include limits, continuity, derivatives, and integrals of algebraic and transcendental functions of one variable, with applications.

Upon completion, students should be able to apply differentiation and integration techniques to algebraic and transcendental functions. This course has been approved for transfer under the CAA as a general education course in Mathematics.

MAT 272 Calculus II 3 2 4
Prerequisites: MAT 271
Corequisites: None
This course provides a rigorous treatment of integration and is the second calculus course in a three-course sequence. Topics include applications of definite integrals, techniques of integration, indeterminate forms, improper integrals, infinite series, conic sections, parametric equations, polar coordinates, and differential equations. Upon completion, students should be able to use integration and approximation techniques to solve application problems This course has been approved for transfer under the CAA as a general education course in Mathematics.

MAT 273 Calculus III 3 2 4
Prerequisites: MAT 272
Corequisites: None
This course covers the calculus of several variables and is third calculus course in a three-course sequence. Topics include functions of several variables, partial derivatives, multiple integrals, solid analytical geometry, vector-valued functions, and line and surface integrals. Upon completion, students should be able to solve problems involving vectors and functions of several variables. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

MAT 280 Linear Algebra 3 0 3
Prerequisites: MAT 271
Corequisites: None
This course provides a study of linear algebra topics with emphasis on the development of both abstract concepts and applications. Topics include vectors, systems of equations, matrices, determinants, vector spaces, linear transformations in two or three dimensions, eigenvectors, eigenvalues, diagonalization and orthogonality. Upon completion, students should be able to demonstrate both an understanding of the theoretical concepts and appropriate use of linear algebra models to solve application problems. This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.

MAT 285 Differential Equations 3 0 3
Prerequisites: MAT 272
Corequisites: None
This course provides an introduction to ordinary differential equations with an emphasis on applications. Topics include first order, linear higher-order, and systems of differential equations; numerical methods; series solutions; eigenvalues and eigenvectors; Laplace transforms; and Fourier series. Upon completion, students should be able to use differential equations to model physical phenomena, solve the equations, and use the solutions to analyze the phenomena. This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.

Mechanical

MEC 110 Introduction to CAD/CAM 1 2 2
Prerequisites: None
Corequisites: None
This course introduces CAD/CAM. Emphasis is placed on transferring part geometry from CAD to CAM for the development of a CNC-ready program. Upon completion, students should be able to use CAD/CAM software to produce a CNC program.

***MEC 111 Machine Processes I 1 4 3**
Prerequisites: None
Corequisites: None
This course introduces shop safety, hand tools, machine processes, measuring instruments, and the operation of machine shop equipment. Topics include use and care of tools, safety, measuring tools, and the basic setup and operation of common machine tools. Upon completion, students should be able to safely machine simple parts to specified tolerances.

***MEC 145 Mfg Materials I 2 3 3**
Prerequisites: None
Corequisites: None
This course introduces a variety of manufacturing materials and common processing techniques. Emphasis is placed on the processing, testing, and application of materials such as wood, metals, plastics, ceramics, and composites. Upon completion, students should be able to demonstrate an understanding of fundamental engineering applications for a variety of materials, including their process capabilities and limitations.

***MEC 155 Env Benign Manufacturing 2 2 3**
Prerequisites: None
Corequisites: None
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 181 Introduction to CIM 2 0 2**
Prerequisites: None
Corequisites: None
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.

***MEC 231 Computer-Aided Manufacturing I 1 4 3**
Prerequisites: None
Corequisites: None
This course introduces computer-aided manufacturing (CAM) applications and concepts. Emphasis is placed on developing/defining part geometry and the processing information needed to manufacture parts. Upon completion, students should be able to demonstrate skills in defining part geometry, program development, and code generation using CAM software.

***MEC 232 Computer-Aided Manufacturing II 1 4 3**
Prerequisites: MEC 231
Corequisites: None
This course provides an in-depth study of CAM applications and concepts. Emphasis is placed on the manufacturing of complex parts using computer-aided manufacturing software. Upon completion, students should be able to manufacture complex parts using CAM software.

***MEC 260 Fundamentals of Machine Design 2 3 3**
Prerequisites: CIV 110
Corequisites: None
This course introduces the fundamental principles of machine design. Topics include simple analysis of forces, moments, stresses, strains, friction, kinematics, and other considerations for designing machine elements. Upon completion, students should be able to analyze machine components and make component selections from manufacturers' catalogs.

Medical Assisting

MED 110 Orientation to Med Assist 1 0 0 1
Prerequisites: None
Corequisites: None
This course covers the history of medicine and the role of the medical assistant in the health care setting. Emphasis is placed on professionalism, communication, attitude, behaviors, and duties in the medical environment. Upon completion, students should be able to project a positive attitude and promote the profession of medical assisting.

MED 118 Medical Law and Ethics 2 0 0 2
Prerequisites: None
Corequisites: None
This course covers legal relationships of physicians and patients, contractual agreements, professional liability, malpractice, medical practice acts, informed, consent, and bioethical issues. Emphasis is placed on legal terms, professional attitudes, and the principles and basic concepts of ethics and laws involved in providing medical services. Upon completion, students should be able to meet the legal and ethical responsibilities of a multi-skilled health professional.

MED 120 Survey of Medical Terminology 2 0 0 2
Prerequisites: None
Corequisites: None
This course introduces the vocabulary, abbreviations, and symbols used in the language of medicine. Emphasis is placed on building medical terms using prefixes, suffixes, and word roots. Upon completion, students should be able to pronounce, spell, and define accepted medical terms.

MED 121 Medical Terminology I 3 0 0 3
Prerequisites: None
Corequisites: None
This course introduces prefixes, suffixes, and word roots used in the language of medicine. Topics include medical vocabulary and the terms that relate to the anatomy, physiology, pathological conditions, and treatment of selected systems. Upon completion, students should be able to pronounce, spell, and define medical terms as related to selected body systems and their pathological disorders.

MED 122 Medical Terminology II 3 0 0 3
Prerequisites: MED 121
Corequisites: None
This course is the second in a series of medical terminology courses. Topics include medical vocabulary and the terms that relate to the anatomy, physiology, pathological conditions, and treatment of selected systems. Upon completion, students should be able to pronounce, spell, and define medical terms as related to selected body systems and their pathological disorders.

MED 130 Admin Office Proc I 1 2 0 2
Prerequisites: Enrollment in Medical Assisting program.
Corequisites: None
This course introduces medical office administrative procedures. Topics include appointment processing, written and oral communications, medical records, patient orientation, and safety. Upon completion, students should be able to perform basic administrative skills within the medical environment.

MED 131 Admin Office Proc II 1 2 0 2
Prerequisites: MED 130
Corequisites: None
This course provides medical office procedures in both economic and management skills. Topics include physical plant maintenance, equipment and supplies, liability coverage, medical economics, and introductory insurance procedures. Upon completion, students should be able to manage the economics of the medical office and supervise personnel.

MED 138 Infection/Hazard Control 2 0 0 2
Prerequisites: None
Corequisites: None
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, OSHA 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
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
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 240 Exam Room Procedures II 3 4 0 5
Prerequisites: MED 140
Corequisites: None
This course is designed to expand and build upon skills presented in MED 140. Emphasis is placed on advanced exam room procedures. Upon completion, students should be able to demonstrate enhanced competence in selected exam room procedures.

MED 260 MED Clinical Externship 0 0 15 5
Prerequisites: MED 150 and MED 240
Corequisites: None
This course provides the opportunity to apply clinical, laboratory, and administrative skills in a medical facility. Emphasis is placed on enhancing competence in clinical and administrative skills necessary for comprehensive patient care and strengthening professional communications and interactions. Upon completion, students should be able to function as an entry-level health care professional.

*The numbers following course titles indicate **class**, **lab**, **clinic/co-op/shop**, and **credit** hours, respectively.*
When only three numbers are listed, the middle number always designates lab hours.

MED 262 Clinical Perspectives 1 0 0 1
Prerequisites: None
Corequisites: MED 260
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
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: None
Corequisites: MED 131 and MED 140
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
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
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
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
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. Check with the North Carolina Substance Abuse Professional Practice Board (NCSAPPB) to verify if this course has been approved for training/education credit for substance abuse certification/recertification.

Marketing and Retailing

MKT 120 Principles of Marketing 3 0 3
Prerequisites: None
Corequisites: None
This course introduces principles and problems of marketing goods and services. Topics include promotion, placement, and pricing strategies for products. Upon completion, students should be able to apply marketing principles in organizational decision making.

MKT 121 Retailing 3 0 3
Prerequisites: None
Corequisites: None
This course examines the role of retailing in the economy. Topics include the development of present retail structure, functions performed, effective operations, and managerial problems resulting from current economic and social trends. Upon completion, students should be able to demonstrate an understanding of the basic principles of retailing.

MKT 122 Visual Merchandising 3 0 3
Prerequisites: None
Corequisites: None
This course introduces basic layout design and commercial display in retail and service organizations. Topics include an analysis of display as a visual merchandising medium and an examination of the principles and applications of display and design. Upon completion, students should be able to plan, build, and evaluate designs and displays. This course is a unique concentration requirement of the Marketing and Retailing concentration in the Business Administration program.

MKT 123 Fundamentals of Selling 3 0 3
Prerequisites: None
Corequisites: None
This course is designed to emphasize the necessity of selling skills in a modern business environment. Emphasis is placed on sales techniques involved in various types of selling situations. Upon completion, students should be able to demonstrate an understanding of the techniques covered.

MKT 220 Advertising and Sales Promotion 3 0 3
Prerequisites: None
Corequisites: None
This course covers the elements of advertising and sales promotion in the business environment. Topics include advertising and sales promotion appeals, selection of media, use of advertising and sales promotion as a marketing tool, and means of testing effectiveness. Upon completion, students should be able to demonstrate an understanding of the concepts covered through application.

MKT 221 Consumer Behavior 3 0 3
Prerequisites: None
Corequisites: None
This course is designed to describe consumer behavior as applied to the exchange processes involved in acquiring, consuming, and disposing of goods and services. Topics include an analysis of basic and environmental determinants of consumer behavior with emphasis on the decision-making process. Upon completion, students should be able to analyze concepts related to the study of the individual consumer.

MKT 224 International Marketing 3 0 3
Prerequisites: None
Corequisites: None
This course covers the basic concepts of international marketing activity and theory. Topics include product promotion, placement, and pricing strategies in the international marketing environment. Upon completion, students should be able to demonstrate a basic understanding of the concepts covered.

MKT 225 Marketing Research 3 0 3
Prerequisites: MKT 120
Corequisites: None
This course provides information for decision making by providing guidance in developing, analyzing, and using data. Emphasis is placed on marketing research as a tool in decision making. Upon completion, students should be able to design and conduct a marketing research project and interpret the results. This course is a unique concentration requirement of the Marketing and Retailing concentration in the Business Administration program.

MKT 227 Marketing Applications 3 0 3
Prerequisites: MKT 120 and MKT 123
Corequisites: None
This course extends the study of diverse marketing strategies. Emphasis is placed on case studies and small group projects involving research or planning. Upon completion, students should be able to effectively participate in the formulation of a marketing strategy. This course is a unique concentration requirement of the Marketing and Retailing concentration in the Business Administration program.

MKT 229 Special Events Production 2 0 2
Prerequisites: None
Corequisites: None
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
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
Corequisites: BIO 163
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
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
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
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
This course introduces the quantitative analysis of blood and body fluids and their variations in health and disease. Topics include clinical biochemistry, methodologies, instrumentation, and quality control. Upon completion, students should be able to demonstrate theoretical comprehension of clinical chemistry, perform diagnostic techniques, and correlate laboratory findings with disorders.

MLT 140 Introduction to Microbiology 2 3 0 3
Prerequisites: Enrollment in the Medical Laboratory Technology program
Corequisites: None
This course is designed to introduce basic techniques and safety procedures in clinical microbiology. Emphasis is placed on the morphology and identification of common pathogenic

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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
This course surveys professional issues in preparation for career entry. Emphasis is placed on work readiness and theoretical concepts in microbiology, immunohematology, hematology, and clinical chemistry. Upon completion, students should be able to demonstrate competence in career entry-level areas and be prepared for the national certification examination.

MLT 240 Special Clinic Microbiology 2 3 0 3
Prerequisites: MLT 140
Corequisites: None
This course is designed to introduce special techniques in clinical microbiology. Emphasis is placed on advanced areas in microbiology. Upon completion, students should be able to demonstrate theoretical comprehension in performing and interpreting specialized clinical microbiology procedures.

***MLT 252 MLT Practicum I** 0 0 6 2**
Prerequisites: Enrollment in the Medical Laboratory Technology program, MLT 120, MLT 126, MLT 130, MLT 240, BIO 163, CHM 130, and CHM 130A
Corequisites: MLT 111 and MLT 127
This course provides entry-level clinical laboratory experience. Emphasis is placed on technique, accuracy, and precision. Upon completion, students should be able to demonstrate entry-level competence on final clinical evaluations. Concentration will be in the area of Phlebotomy.

***MLT 254 MLT Practicum I** 0 0 12 4**
Prerequisites: Enrollment in the Medical Laboratory Technology program and MLT 252
Corequisites: None
This course provides entry-level clinical laboratory experience. Emphasis is placed on technique, accuracy, and precision. Upon completion, students should be able to demonstrate entry-level competence on final clinical evaluations. Concentration will be in the area of blood banking.

***MLT 255 MLT Practicum I** 0 0 15 5**
Prerequisites: Enrollment in the Medical Laboratory Technology program and MLT 252
Corequisites: None
This course provides entry-level clinical laboratory experience. Emphasis is placed on technique, accuracy, and precision. Upon completion, students should be able to demonstrate entry-level competence on final clinical evaluations. Concentration will be in the area of microbiology.

***MLT 261 MLT Practicum II** 0 0 3 1**
Prerequisites: Enrollment in the Medical Laboratory Technology program and MLT 252
Corequisites: None
This course provides entry-level clinical laboratory experience. Emphasis is placed on technique, accuracy, and precision. Upon completion, students should be able to demonstrate entry-level competence on final clinical evaluations. Concentration will be in the area of donors and component therapy.

***MLT 265 MLT Practicum II** 0 0 15 5**
Prerequisites: Enrollment in the Medical Laboratory Technology program and MLT 252
Corequisites: None
This course provides entry-level clinical laboratory experience. Emphasis is placed on technique, accuracy, and precision. Upon completion, students should be able to demonstrate entry-level competence on final clinical evaluations. Concentration will be in the area of hematology.

***MLT 275 MLT Practicum III** 0 0 15 5**
Prerequisites: Enrollment in the Medical Laboratory Technology program and MLT 252
Corequisites: None
This course provides entry-level clinical laboratory experience. Emphasis is placed on technique, accuracy, and precision. Upon completion, students should be able to demonstrate entry-level competence on final clinical evaluations. Concentration will be in the area of clinical chemistry. ** MLT 252, 254, 255, 261, 265, 275 Because of clinical space restrictions, students will have individual schedules for MLT Practicums. Students will register for these courses as assigned by the department chairperson. During each student's first clinical experience course, general hospital orientation will be covered.

Maintenance

***MNT 110 Intro to Maint Procedures 1 3 2**
Prerequisites: None
Corequisites: None
This course covers basic maintenance fundamentals for power transmission equipment. Topics include equipment inspection, lubrication, alignment, and other scheduled maintenance procedures. Upon completion, students should be able to demonstrate knowledge of accepted maintenance procedures and practices according to current industry standards.

***MNT 111 Maintenance Practices 2 2 3**
Prerequisites: None
Corequisites: None
This course provides in-depth theory and practical applications relating to predictive and preventive maintenance programs. Emphasis is placed on equipment failure analysis, maintenance management software, and techniques such as vibration and infrared analysis. Upon completion, students should be able to demonstrate an understanding of modern analytical and documentation methods.

***MNT 120 Industrial Wiring Methods 1 3 2**
Prerequisite: None
Corequisites: None
This course is designed to prepare the student to install wiring systems in accordance with the NEC and industry practices. Emphasis is placed on the use and installation of raceways, conductors, enclosures, and other devices typically used in industry. Upon completion, students should be able to safely install simple industrial branch and feeder circuits.

***MNT 240 Industrial Equip Troubleshoot 1 3 2**
Prerequisite: None
Corequisites: None
This course covers the various service procedures, tools, instruments, and equipment necessary to analyze and repair typical industrial equipment. Emphasis is placed on electro-mechanical and fluid power equipment troubleshooting, calibration, and repair, including common techniques and procedures. Upon completion, students should be able to troubleshoot and repair industrial equipment.

Therapeutic Massage

MTH 110 Fundamentals of Massage 6 9 3 10
Prerequisites: None
Corequisites: None
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 Ther Massage Applications 6 9 3 10
Prerequisites: MTH 110
Corequisites: None
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: Select one: MTH 110, MTH 120, MTH 125, MTH 210, MTH 220
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
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 of this course, the student should be able to discuss issues relating to the practice of massage therapy, client/therapist relationships as well as ethical issues.

MTH 210 Adv Skills of Massage 4 9 3 8
Prerequisites: Select one: MTH 120, MTH 121
Corequisites: None
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: Select one: MTH 120, MTH 121, MTH 221
Corequisites: None
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: Select one: MTH 120, MTH 125, MTH 210, MTH 220
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
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
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
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 121 Music Theory I 3 2 4
Prerequisites: None
Corequisites: None
This course provides an in-depth introduction to melody, rhythm, and harmony. Emphasis is placed on fundamental melodic, rhythmic, and harmonic analysis, introduction to part writing, ear-training, and sight-singing. Upon completion, students should be able to demonstrate proficiency in the recognition and application of the above. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

MUS 122 Music Theory II 3 2 4
Prerequisites: MUS 121
Corequisites: None
This course is a continuation of studies begun in MUS 121. Emphasis is placed on advanced melodic, rhythmic, and harmonic analysis and continued studies in part-writing, ear-training, and sight-singing. Upon completion, students should be able to demonstrate proficiency in the recognition and application of the above. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

MUS 131 Chorus I 0 2 1
Prerequisites: None
Corequisites: None
This course provides an opportunity to gain experience singing in a chorus. Emphasis is placed on vocal techniques and the study and performance of a variety of styles and

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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 pre-major and/or elective course requirement.

MUS 132 Chorus II 0 2 1
Prerequisites: MUS 131
Corequisites: None
This course provides a continuation of studies begun in MUS 131. Emphasis is placed on vocal techniques and the study and performance of a variety of styles and periods of choral literature. Upon completion, students should be able to demonstrate skills needed to participate in choral singing leading to performance. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

MUS 210 History of Rock Music 3 0 3
Prerequisites: None
Corequisites: None
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. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

MUS 231 Chorus III 0 2 1
Prerequisites: MUS 132
Corequisites: None
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 pre-major and/or elective course requirement.

MUS 232 Chorus IV 0 2 1
Prerequisites: MUS 231
Corequisites: None
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 pre-major and/or elective course requirement.

Networking Technology

NET 110 Networking Concepts 2 2 3
Prerequisites: None
Corequisites: None
This course introduces students to the networking field. Topics include network terminology and protocols, local-area networks, wide-area networks, OSI model, cabling, router programming, Ethernet, IP addressing, and network standards. Upon completion, students should be able to perform tasks related to networking mathematics, terminology, and models, media, Ethernet, subnetting, and TCP/IP Protocols.

NET 125 Networking Basics 1 4 3
Prerequisites: None
Corequisites: None
This course introduces the networking field. Emphasis is placed on network terminology and protocols, local-area networks, wide-area networks, OSI model, cabling, router programming, Ethernet, IP addressing, and network standards. Upon completion, students should be able to perform tasks related to networking mathematics, terminology, and models, media, Ethernet, subnetting, and TCP/IP Protocols. This is the first course in the Cisco Academy CCNA sequence and this course has been certified by the National Security Agency, National Information Assurance Education and Training Program as meeting NSTISSI No. 4011, National Training Standard for Information Systems Security (INFOSEC) Professionals and CNSSI No. 4013 Entry Level System Administrators (SA).

NET 126 Routing Basics 1 4 3
Prerequisites: NET 125
Corequisites: None
This course focuses on initial router configuration, router software management, routing protocol configuration, TCP/IP, and access control lists (ACLs). Emphasis will be placed on the fundamentals of router configuration, managing router software, routing protocol, and access lists. Upon completion, students should have an understanding of routers and their role in WANs, router configuration, routing protocols, TCP/IP, troubleshooting, and ACLs. This is the second course in the Cisco Academy CCNA sequence.

NET 175 Wireless Technology 2 2 3
Prerequisites: NET 110 or NET 125 and NET 126
Corequisites: None
This course introduces the student to wireless technology and interoperability with different communication protocols. Topics include Wireless Application Protocol (WAP), Wireless Mark-up Language (WML), link manager, service discovery protocol, transport layer and frequency band. Upon completion, students should be able to discuss in written and oral form protocols and procedures required for different wireless applications.

NET 225 Routing and Switching I 1 4 3
Prerequisites: NET 126
Corequisites: None
This course focuses on advanced IP addressing techniques, intermediate routing protocols, command-line interface configuration of switches, Ethernet switching, VLANs, STP, and VTP. Emphasis will be placed on application and demonstration of skills acquired in pre-requisite courses. Upon completion, students should be able to perform tasks related to VLSM, routing protocols, switching concepts and configuration, STP, VLANs, and VTP. This is the third course in the Cisco Academy CCNA sequence.

NET 226 Routing and Switching II 1 4 3
Prerequisites: NET 225
Corequisites: None
This course introduces WAN theory and design, WAN technology, PPP, Frame Relay, ISDN, and additional case studies. Topics include network congestion problems, TCP/IP transport and network layer protocols, advanced routing and switching configuration, ISDN protocols, PPP encapsulation operations on a router. Upon completion, students should be able to provide solutions for network routing problems, identify ISDN protocols, and describe the Spanning Tree protocol. This is the fourth course in the Cisco Academy CCNA sequence.

NET 289 Networking Project 1 4 3
Prerequisites: NOS 220 and NOS 230
Corequisites: NET 226
This course provides an opportunity to complete a significant networking project from the design phase through implementation with minimal instructor support. Emphasis is placed on project definition, documentation, installation, testing, presentation, and training. Upon completion, students should be able to complete a project from the definition phase through implementation.

Networking Operating Systems

NOS 110 Operating Systems Concepts 2 3 3
Prerequisites: None
Corequisites: None
This course introduces students to a broad range of operating system concepts, including installation and maintenance. Emphasis is placed on operating system concepts, management, maintenance, and resources required. Upon completion of this course, students will have an understanding of OS concepts, installation, management, maintenance, using a variety of operating systems. The course will include file management and simple user creation under at least two operating systems.

NOS 120 Linux/UNIX Single User 2 2 3
Prerequisites: NOS 110 or CET 211
Corequisites: None
This course develops the necessary skills for students to develop both GUI and command line skills for using and customizing a Linux workstation. Topics include Linux file system and access permissions, GNOME Interface, VI editor, X Window System expression pattern matching, I/O redirection, network and printing utilities. Upon completion, students should be able to customize and use Linux systems for command line requirements and desktop productivity roles.

NOS 130 Windows Single User 2 2 3
Prerequisites: NOS 110 or CET 211
Corequisites: None
This course introduces operating system concepts for single-user systems. Topics include hardware management, file and memory management, system configuration/optimization, and utilities. Upon completion, students should be able to perform operating systems functions at the support level in a single-user environment.

NOS 220 Linux/UNIX Admin I 2 2 3
Prerequisites: NOS 120
Corequisites: None
This course introduces the Linux file system, group administration, and system hardware controls. Topics include installation, creation and maintaining file systems, NIS client and DHCP client configuration, NFS, SMB/Samba, Configure X, Gnome, KDE, basic memory, processes, and security. Upon completion, students should be able to perform system administration tasks including installation, configuring and attaching a new Linux workstation to an existing network.

NOS 230 Windows Admin I 2 2 3
Prerequisites: NOS 130
Corequisites: None
This course covers the installation and administration of a Windows Server network operating system. Topics include managing and maintaining physical and logical devices, access to resources, the server environment, managing users, computers, and groups, and Managing/Implementing Disaster Recovery. Upon completion, students should be able to manage and maintain a Windows Server environment.

Nursing

***NUR 101 Practical Nursing I 7 6 6 11**
Prerequisites: Admission into the Practical Nursing program
Corequisites: BIO 168 and PSY 150
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
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
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, NUR 117
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
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.

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***NUR 113 Family Health Concepts 3 0 6 5**
Prerequisites: BIO 169, NUR 111, NUR 112, NUR 114, NUR 212, PSY 241
Corequisites: None
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
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 117 Pharmacology 1 3 0 2**
Prerequisites: Admission into the ADN or LPN to ADN Bridge Option
Corequisites: BIO 168 & NUR 111
This course introduces information concerning sources, effects, legalities, and the safe use of medications as therapeutic agents. Emphasis is placed on nursing responsibility, accountability, pharmacokinetics, routes of medication administration, contraindications and side effects. Upon completion, students should be able to compute dosages and administer medication safely.

***NUR 211 Health Care Concepts 3 0 6 5**
Prerequisites: NUR 111, NUR 112, NUR 114, NUR 212, BIO 169
Corequisites: None
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
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
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
This course covers basic keyboarding skills. Emphasis is placed on the touch system, correct techniques, and development of speed and accuracy. Upon completion, students should be able to key at an acceptable speed and accuracy level using the touch system. Students should be able to complete timed writing competencies consisting of three timed writings at 25 nwam for three minutes with three or fewer errors and 160 keystrokes per minute for two minutes with two or less errors on the numeric keypad using the touch system.

OST 132 Keyboard Skill Building 1 2 2
Prerequisites: OST 134
Corequisites: None
This course is designed to increase speed and improve accuracy in keyboarding. Emphasis is placed on diagnostic tests to identify accuracy and speed deficiencies followed by corrective drills. Upon completion, students should be able to keyboard rhythmically with greater accuracy and speed. Students should be able to complete timed writing competencies consisting of three timed writings at 50 nwam for five minutes with five or fewer errors using the touch system.

OST 134 Text Entry & Formatting 2 2 3
Prerequisites: None
Corequisites: None
This course is designed to provide skills needed to increase speed, improve accuracy, and format documents. Topics include letters, memos, tables, and business reports. Upon completion, students should be able to produce documents and key timed writings at speeds commensurate with employability. Students should be able to complete timed writing competencies consisting of three timed writings at 40 nwam for five minutes with five or fewer errors using the touch system.

OST 136 Word Processing 2 2 3
Prerequisites: None
Corequisites: None
This course is designed to introduce word processing concepts and applications. Topics include preparation of a variety of documents and mastery of specialized software functions. Upon completion, students should be able to work effectively in a computerized word processing environment. Upon course entrance, a keyboarding proficiency test requiring 25 gwam at 98 percent accuracy using the touch system will be administered.

OST 137 Office Software Applications 2 2 3
Prerequisites: None
Corequisites: None
This course introduces the concepts and functions of software that meets the changing needs of the community. Emphasis is placed on the terminology and use of software through a hands-on approach. Upon completion, students should be able to use software in a business environment.

OST 141 Med Terms I-Med Office 3 0 3
Prerequisites: None
Corequisites: None
This course uses a language-structure approach to present the terminology and vocabulary that will be encountered in medical office settings. Topics include word parts that relate to systemic components, conditions, pathology, and disorder remediation in approximately one-half of the systems of the human body. Upon completion, students should be able to relate words to systems, pluralize, define, pronounce, and construct sentences with the included terms.

OST 142 Med Terms II-Med Office 3 0 3
Prerequisites: OST 141
Corequisites: None
This course is a continuation of OST 141 and continues the study, using a language-structure approach, of medical office terminology and vocabulary. Topics include word parts that relate to systemic components, conditions, pathology, and disorder remediation in the remaining systems of the human body. Upon completion, students should be able to relate words to systems, pluralize, define, pronounce, and construct sentences with the included terms.

OST 148 Med Coding Billing & Insu 3 0 3
Prerequisites: CIS 110 and MED 121 or OST 141
Corequisites: None
This course introduces fundamentals of medical coding, billing, and insurance. Emphasis is placed on the medical billing cycle to include third party payers, coding concepts, and form preparation. Upon completion, students should be able to explain the life cycle of and accurately complete a medical insurance claim.

***OST 149 Medical Legal Issues 3 0 3**
Prerequisites: None
Corequisites: None
This course introduces the complex legal, moral, and ethical issues involved in providing healthcare services. Emphasis is placed on the legal requirements of medical practices; the relationship of physician, patient, and office personnel; professional liabilities; and medical practice liability. Upon completion, students should be able to demonstrate a working knowledge of current medical law and accepted ethical behavior.

OST 164 Text Editing Applications 3 0 3
Prerequisites: None
Corequisites: None
This course provides a comprehensive study of editing skills needed in the workplace. Emphasis is placed on grammar, punctuation, sentence structure, proofreading, and editing. Upon completion, students should be able to use reference materials to compose and edit text.

OST 184 Records Management 2 2 3
Prerequisites: None
Corequisites: None
This course includes the creation, maintenance, protection, security, and disposition of records stored in a variety of media forms. Topics include alphabetic, geographic, subject, and numeric filing methods. Upon completion, students should be able to set up and maintain a records management system.

OST 201 Medical Transcription I 3 2 4
Prerequisites: OST 136 and OST 164
Corequisites: MED 122 or OST 142; and OST 164
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
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
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
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
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
This course provides an in-depth study of diagnostic coding. Emphasis is placed on ICD coding system. Upon completion, students should be able to properly code diagnoses In a medical facility.

***OST 286 Professional Development 3 0 3**
Prerequisites: None
Corequisites: None
This course covers the personal competencies and qualities needed to project a professional image in the office. Topics include interpersonal skills, healthy life-styles, appearance, attitude, personal and professional growth, multicultural awareness, and professional etiquette. Upon completion, students should be able to demonstrate these attributes in the classroom, office, and society.

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When only three numbers are listed, the middle number always designates lab hours.

***OST 289 Administrative Office Mgt 2 2 3**
Prerequisites: OST 136 and OST 164
Corequisites: None
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
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
This course provides supervised experience in the performance of venipuncture and microcollection techniques in a clinical facility. Emphasis is placed on patient interaction and application of universal precautions, proper collection techniques, special procedures, specimen handling, and data management. Upon completion, students should be able to safely perform procedures necessary for specimen collections on patients in various health care settings. This is a certificate-level course.

Physical Education

PED 110 Fit and Well for Life 1 2 2
Prerequisites: None
Corequisites: None
This course is designed to investigate and apply the basic concepts and principles of lifetime physical fitness and other health-related factors. Emphasis is placed on wellness through the study of nutrition, weight control, stress management, and consumer facts on exercise and fitness. Upon completion, students should be able to plan a personal, lifelong fitness program based on individual needs, abilities, and interests. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 117 Weight Training I 0 3 1
Prerequisites: None
Corequisites: None
This course introduces the basics of weight training. Emphasis is placed on developing muscular strength, muscular endurance, and muscle tone. Upon completion, students should be able to establish and implement a personal weight training program. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 118 Weight Training II 0 3 1
Prerequisites: PED 117
Corequisites: None
This course covers advanced levels of weight training. Emphasis is placed on meeting individual training goals and addressing weight training needs and interests. Upon completion, students should be able to establish and implement an individualized advanced weight training program. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 119 Circuit Training 0 3 1
Prerequisites: None
Corequisites: None
This course covers the skills necessary to participate in a developmental fitness program. Emphasis is placed on the circuit training method which involves a series of conditioning timed stations arranged for maximum benefit and variety. Upon completion, students should be able to understand and appreciate the role of circuit training as a means to develop fitness. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

PED 120 Walking for Fitness 0 3 1
Prerequisites: None
Corequisites: None
This course introduces fitness through walking. Emphasis is placed on stretching, conditioning exercises, proper clothing, fluid needs, and injury prevention. Upon completion, students should be able to participate in a recreational walking program. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 122 Yoga I 0 2 1
Prerequisites: None
Corequisites: None
This course introduces the basic discipline of yoga. Topics include proper breathing, relaxation techniques, and correct body positions. Upon completion, students should be able to demonstrate the procedures of yoga. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 123 Yoga II 0 2 1
Prerequisites: PED 122
Corequisites: None
This course introduces more detailed aspects of the discipline of yoga. Topics include breathing and physical postures, relaxation, and mental concentration. Upon completion, students should be able to demonstrate advanced procedures of yoga. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 128 Golf - Beginning 0 2 1
Prerequisites: None
Corequisites: None
This course emphasizes the fundamentals of golf. Topics include the proper grips, stance, alignment, swings for the short and long game, putting, and the rules and etiquette of golf. Upon completion, students should be able to perform the basic golf shots and demonstrate a knowledge of the rules and etiquette of golf. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 130 Tennis - Beginning 0 2 1
Prerequisites: None
Corequisites: None
This course emphasizes the fundamentals of tennis. Topics include basic strokes, rules, etiquette, and court play. Upon completion, students should be able to play recreational tennis. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 142 Lifetime Sports 0 2 1
Prerequisites: None
Corequisites: None
This course is designed to give an overview of a variety of sports activities. Emphasis is placed on the skills and rules necessary to participate in a variety of lifetime sports. Upon completion, students should be able to demonstrate an awareness of the importance of participating in lifetime sports activities. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 143 Volleyball - Beginning 0 2 1
Prerequisites: None
Corequisites: None
This course covers the fundamentals of volleyball. Emphasis is placed on the basics of serving, passing, setting, spiking, blocking, and the rules and etiquette of volleyball. Upon completion, students should be able to participate in recreational volleyball. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 145 Basketball - Beginning 0 2 1
Prerequisites: None
Corequisites: None
This course covers the fundamentals of basketball. Emphasis is placed on skill development, knowledge of the rules, and basic game strategy. Upon completion, students should be able to participate in recreational basketball. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 171 Nature Hiking 0 2 1
Prerequisites: None
Corequisites: None
This course provides instruction on how to equip and care for oneself on the trail. Topics include clothing, hygiene, trail ethics, and necessary equipment. Upon completion, students should be able to successfully participate in nature trail hikes. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 217 Pilates I 0 2 1
Prerequisites: None
Corequisites: None
This course provides an introduction to the Pilates method of body conditioning exercise. Topics include instruction in beginning and intermediate Pilates exercises using a mat or equipment, history of the Pilates method, and relevant anatomy and physiology. Upon completion, students should be able to perform beginning and intermediate exercises, and posses an understanding of the benefits of conditioning the body's core muscles. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

PED 218 Pilates II 0 2 1
Prerequisites: PED 217
Corequisites: None
This course provides continued instruction to the Pilates method of body conditioning exercise. Topics include instruction in intermediate and advanced Pilates exercises using a mat or equipment, relevant anatomy and physiology, and further discussion of related concepts. Upon completion, students should be able to perform intermediate and advanced exercises, and possess the autonomy to maintain their own personal Pilates practice. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

PED 220 Exercise for Physically Challenged 0 2 1
Prerequisites: None
Corequisites: None
This course is designed to improve physical strength, endurance, and range of motion while focusing on individual needs. Emphasis is placed on exercises which are designed and adapted to serve those with special needs. Upon completion, students should be able to show improved physical fitness, body awareness, and an appreciation for their physical well-being. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 235 Tai Chi 0 3 1
Prerequisites: None
Corequisites: None
This course introduces martial arts using the Tai Chi 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 for transfer under the Comprehensive Articulation Agreement as a pre-major and/or elective course requirement.

PED 236 Kempo 0 3 1
Prerequisites: None
Corequisites: None
This course introduces martial arts using the Kempo 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 for transfer under the Comprehensive Articulation Agreement as a pre-major and/or elective course requirement.

Philosophy

PHI 215 Philosophical Issues 3 0 3
Prerequisites: ENG 111
Corequisites: None
This course introduces fundamental issues in philosophy considering the views of classical and contemporary philosophers. Emphasis is placed on knowledge and belief, appearance and reality, determinism and free will, faith and reason, and justice and inequality. Upon completion, students should be able to identify, analyze, and critique the philosophical components of an issue. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

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When only three numbers are listed, the middle number always designates lab hours.

PHI 240 Introduction to Ethics 3 0 3
Prerequisites: ENG 111
Corequisites: None
This course introduces theories about the nature and foundations of moral judgments and applications to contemporary moral issues. Emphasis is placed on utilitarianism, rule-based ethics, existentialism, relativism versus objectivism, and egoism. Upon completion, students should be able to apply various ethical theories to individual moral issues such as euthanasia, abortion, crime and punishment, and justice. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

Pharmacy

PHM 110 Introduction to Pharmacy 3 0 3
Prerequisites: None
Corequisites: None
This course introduces pharmacy practice and the technician's role in a variety of pharmacy settings. Topics include medical terminology and abbreviations, drug delivery systems, law and ethics, prescription and medication orders, and the health care system. Upon completion, students should be able to explain the role of pharmacy technicians, read and interpret drug orders, describe quality assurance, and utilize pharmacy references.

PHM 111 Pharmacy Practice I 3 3 4
Prerequisites: None
Corequisites: PHM 110, PHM 115
This course provides instruction in the technical procedures for preparing and dispensing drugs in the hospital and retail settings under supervision of a registered pharmacist. Topics include drug packaging and labeling, out-patient dispensing, hospital dispensing procedures, controlled substance procedures, inventory control, and non-sterile compounding. Upon completion, students should be able to perform basic supervised dispensing techniques in a variety of pharmacy settings.

PHM 115 Pharmacy Calculations 3 0 3
Prerequisites: None
Corequisites: None
This course provides an introduction to the metric, avoirdupois, and apothecary systems of measurement and the calculations used in pharmacy practice. Topics include ratio and proportion, dosage determinations, percentage preparations, reducing and enlarging formulas, dilution and concentration, aliquots, specific gravity and density, and flow rates. Upon completion, students should be able to correctly perform calculations required to properly prepare a medication order.

PHM 115 A Pharmacy Calculations Lab 0 2 1
Prerequisites: None
Corequisites: None
This course provides an opportunity to practice and perform calculations encountered in pharmacy practice. Emphasis is placed on ratio and proportion, dosage calculations, percentage, reduction/enlargement formulas, aliquots, flow rates, and specific gravity/density. Upon completion, students should be able to perform the calculations required to properly prepare a medication order.

PHM 118 Sterile Products 3 3 4
Prerequisites: PHM 110, PHM 111
Corequisites:
This course provides an introduction to intravenous admixture preparation and other sterile products, including total parenteral nutrition and chemotherapy. Topics include aseptic techniques; facilities, equipment, and supplies utilized in admixture preparation; incompatibility and stability; laminar flow hoods; immunizations and irrigation solutions; and quality assurance. Upon completion, students should be able to describe and demonstrate the steps involved in preparation of intermittent and continuous infusions, total parenteral nutrition, and chemotherapy.

PHM 120 Pharmacology I 3 0 3
Prerequisites: None
Corequisites: None
This course introduces the study of the properties, effects, and therapeutic value of the primary agents in the major drug categories. Topics include nutritional products, blood modifiers, hormones, diuretics, cardiovascular agents, respiratory drugs, and gastrointestinal agents. Upon completion, students should be able to place major drugs into correct therapeutic categories and identify indications, side effects, and trade and generic names.

PHM 125 Pharmacology II 3 0 3
Prerequisites: PHM 120
Corequisites: None
This course provides a continuation of the study of the properties, effects, and therapeutic value of the primary agents in the major drug categories. Topics include autonomic and central nervous system agents, anti-inflammatory agents, and anti-infective drugs. Upon completion, students should be able to place major drugs into correct therapeutic categories and identify indications, side effects, and trade and generic names.

PHM 132 Pharmacy Clinical 0 6 2
Prerequisites: None
Corequisites: None
This course provides an opportunity to work in pharmacy settings under a pharmacist's supervision. Emphasis is placed on effective communication with personnel, developing proper employee attitude, and dispensing of medications. Upon completion, students should be able to demonstrate an understanding of pharmacy operations, utilize references, dispense medications, prepare patient charges, and efficiently operate computers.

PHM 134 Pharmacy Clinical 0 12 4
Prerequisites: None
Corequisites: None
This course provides an opportunity to work in pharmacy settings under a pharmacist's supervision. Emphasis is placed on effective communication with personnel, developing proper employee attitude, and dispensing of medications. Upon completion, students should be able to demonstrate an understanding of pharmacy operations, utilize references, dispense medications, prepare patient charges, and efficiently operate computers.

PHM 138 Pharmacy Clinical 0 24 8
Prerequisites: None
Corequisites: None
This course provides an opportunity to work in pharmacy settings under a pharmacist's supervision. Emphasis is placed on effective communication with personnel, developing proper employee attitude, and dispensing of medications. Upon completion, students should be able to demonstrate an understanding of pharmacy operations, utilize references, dispense medications, prepare patient charges, and efficiently operate computers.

PHM 140 Trends in Pharmacy 2 0 2
Prerequisites: None
Corequisites: None
This course covers the major issues, trends, and concepts in contemporary pharmacy practice. Topics include professional ethics, continuing education, job placement, and the latest developments in pharmacy technician practice. Upon completion, students should be able to demonstrate a basic knowledge of the topics discussed.

PHM 150 Hospital Pharmacy 3 3 4
Prerequisites: None
Corequisites: PHM 118
This course provides an in-depth study of hospital pharmacy practice. Topics include hospital organizational structure, committee functions, utilization of reference works, purchasing and inventory control, drug delivery systems, and intravenous admixture preparation. Upon completion, students should be able to explain hospital organization/committee functions, interpret and enter patient orders, fill unit-dose cassettes, and prepare intravenous admixtures.

PHM 155 Community Pharmacy 2 2 3
Prerequisites: None
Corequisites: None
This course covers the operational procedures relating to retail pharmacy. Emphasis is placed on a general knowledge of over-the-counter products, prescription processing, business/inventory management, and specialty patient services. Upon completion, students should be able to provide technical assistance and support to the retail pharmacist.

PHM 160 Pharm Dosage Forms 3 0 3
Prerequisites: None
Corequisites: None
This course is a study of pharmaceutical dosage forms and considerations in their manufacture. Topics include bioavailability, routes of administration, tablets, capsules, solutions, syrups, suspensions, elixirs, aerosols, transdermals, topicals, ophthalmics, otics, and other dosage forms. Upon completion, students should be able to describe the characteristics of the major dosage forms and explain how these characteristics affect the action of the drug.

PHM 165 Pharmacy Prof Practice 2 0 2
Prerequisites: None
Corequisites: None
This course provides a general overview of all aspects of pharmacy technician practice. Emphasis is placed on pharmacy law, calculations, compounding, pharmacology, and pharmacy operations. Upon completion, students should be able to demonstrate competence in the areas required for the Pharmacy Technician Certification Examination.

Physical Science

PHS 140 Weather and Climate 3 0 3
Prerequisites: None
Corequisites: None
This course introduces the nature, origin, processes, and dynamics of the earth's atmospheric environment. Topics include general weather patterns, climate, and ecological influences on the atmosphere. Upon completion, students should be able to demonstrate an understanding of weather formation, precipitation, storm patterns, and processes of atmospheric pollution. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

Physics

PHY 110 Conceptual Physics 3 0 3
Prerequisites: None
Corequisites: PHY 110A
This course provides a conceptually-based exposure to the fundamental principles and processes of the physical world. Topics include basic concepts of motion, forces, energy, heat, electricity, magnetism, and the structure of matter and the universe. Upon completion, students should be able to describe examples and applications of the principles studied. Nonmathematical discussions of concepts and practical applications will be stressed. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

PHY 110A Conceptual Physics Lab 0 2 1
Prerequisites: None
Corequisites: PHY 110
This course is a laboratory for PHY 110. Emphasis is placed on laboratory experiences that enhance materials presented in PHY 110. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in PHY 110. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

PHY 121 Applied Physics I 3 2 4
Prerequisites: None
Corequisites: None
This algebra-based course introduces fundamental physical concepts as applied to industrial and service technology fields. Topics include systems of units, problem-solving methods, graphical analyses, vectors, motion, forces, Newton's laws of motion, work, energy, power, momentum, and properties of matter. Upon completion, students should be able to demonstrate an understanding of the principles studied as applied in industrial and service fields.

PHY 125 Health Sciences Physics 3 2 4
Prerequisites: None
Corequisites: None
This course introduces fundamental physical principles as they apply to health technologies. Topics include motion, force, work, power, simple machines, and other topics as required by the student's area of study. Upon completion, students should be able to demonstrate an understanding of the fundamental principles covered as they relate to practical applications in the health sciences.

PHY 131 Physics - Mechanics 3 2 4
Prerequisites: MAT 121, MAT 161, MAT 171, or MAT 175
Corequisites: None
This algebra/trigonometry-based course introduces fundamental physical concepts as applied to engineering technology fields. Topics include systems of units, problem-solving methods, graphical analysis, vectors, motion, forces, Newton's laws of motion, work, energy, power, momentum, and properties of matter. Upon completion, students should be able to apply the principles studied to applications in engineering technology fields.

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When only three numbers are listed, the middle number always designates lab hours.

PHY 151 College Physics I 3 2 4
Prerequisites: MAT 161 or MAT 171
Corequisites: None
This course uses algebra/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
This course uses algebra/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
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
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
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
This course provides theory and processing experience with the injection molding process. Topics include machine type, molds, controls, machine-polymer part relationship, molding factors, troubleshooting, and molding problems/solutions. Upon completion, students should be able to demonstrate an understanding of machine setup and operation and be able to optimize common injection molding machines.

Political Science

POL 110 Introduction to Political Science 3 0 3
Prerequisites: None
Corequisites: None
This course introduces basic political concepts used by governments and addresses a wide range of political issues. Topics include political theory, ideologies, legitimacy, and sovereignty in democratic and 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
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.

Psychology

PSY 118 Interpersonal Psychology 3 0 3
Prerequisites: None
Corequisites: None
This course introduces the basic principles of psychology as they relate to personal and professional development. Emphasis is placed on personality traits, communication/leadership styles, effective problem solving, and cultural diversity as they apply to personal and work environments. Upon completion, students should be able to demonstrate an understanding of these principles of psychology as they apply to personal and professional development. This course is intended for certificate, diploma, and A.A.S. degree programs.

PSY 150 General Psychology 3 0 3
Prerequisites: None
Corequisites: None
This course provides an overview of the scientific study of human behavior. Topics include history, methodology, biopsychology, sensation, perception, learning, motivation, cognition, abnormal behavior, personality theory, social psychology, and other relevant topics. Upon completion, students should be able to demonstrate a basic knowledge of the science of psychology. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral science.

PSY 215 Positive Psychology 3 0 3
Prerequisites: PSY 150
Corequisites: None
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 pre-major and/or elective course requirement.

PSY 237 Social Psychology 3 0 3
Prerequisites: PSY 150 or SOC 210
Corequisites: None
This course introduces the study of individual behavior within social contexts. Topics include affiliation, attitude formation and change, conformity, altruism, aggression, attribution, interpersonal attraction, and group behavior. Upon completion, students should be able to demonstrate an understanding of the basic principles of social influences on behavior. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

PSY 239 Psychology of Personality 3 0 3
Prerequisites: PSY 150
Corequisites: None
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
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 281 Abnormal Psychology 3 0 3
Prerequisites: PSY 150
Corequisites: None
This course provides an examination of the various psychological disorders, as well as theoretical, clinical, and experimental perspectives of the study of psychopathology. Emphasis is placed on terminology, classification, etiology, assessment, and treatment of the major disorders. Upon completion, students should be able to distinguish between normal and abnormal behavior patterns as well as demonstrate knowledge of etiology, symptoms, and therapeutic techniques. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral science.

Radiography

RAD 110 Radiography Intro & Patient Care 2 3 0 3
Prerequisites: Enrollment in Radiography program
Corequisites: BIO 163, RAD 111, RAD 151, and RAD 182
This course provides an overview of the radiography profession and student responsibilities. Emphasis is placed on basic principles of patient care, radiation protection, technical factors, and medical terminology. Upon completion, students should be able to demonstrate basic skills in these areas.

RAD 111 RAD Procedures I 3 3 0 4
Prerequisites: Enrollment in the Radiography program
Corequisites: BIO 163, RAD 110, RAD 151, and RAD 182
This course provides the knowledge and skills necessary to perform standard radiographic procedures. Emphasis is placed on radiography of the chest, abdomen, extremities, spine, and pelvis. Upon completion, students should be able to demonstrate competence in these areas.

RAD 112 RAD Procedures II 3 3 0 4
Prerequisites: BIO 163, RAD 110, RAD 111, RAD 151, and RAD 182
Corequisites: RAD 121 and RAD 161
This course provides the knowledge and skills necessary to perform standard radiographic procedures. Emphasis is placed on radiography of the skull, bony thorax, and gastrointestinal, biliary, and urinary systems. Upon completion, students should be able to demonstrate competence in these areas.

RAD 121 Radiographic Imaging I 2 3 0 3
Prerequisites: RAD 110, RAD 111, and RAD 151
Corequisites: RAD 112 and RAD 161
This course 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
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
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
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.

*The numbers following course titles indicate **class**, **lab**, **clinic/co-op/shop**, and **credit** hours, respectively.*
When only three numbers are listed, the middle number always designates lab hours.

***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
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
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
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
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
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
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
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.

***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
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
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
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.

Reading

RED 080 Introduction to College Reading 3 2 4
Prerequisites: ENG 075 or RED 070 or placement
Corequisites: None
This course introduces effective reading and inferential thinking skills in preparation for RED 090. Emphasis is placed on vocabulary, comprehension, and reading strategies. Upon completion, students should be able to determine main ideas and supporting details, recognize basic patterns of organization, draw conclusions, and understand vocabulary in context. This course does not satisfy the developmental reading prerequisite for ENG 111.

RED 090 Improved College Reading 3 2 4
Prerequisites: ENG 085 or RED 080 or placement
Corequisites: None
This course is designed to improve reading and critical thinking skills. Topics include vocabulary enhancement; extracting implied meaning; analyzing author's purpose, tone, and style; and drawing conclusions and responding to written material. Upon completion, students should be able to comprehend and analyze college-level reading material. This course satisfies the developmental reading prerequisite for ENG 111.

Religion

REL 110 World Religions 3 0 3
Prerequisites: None
Corequisites: None
This course introduces the world's major religious traditions. Topics include Primal religions, Hinduism, Buddhism, Islam, Judaism, and Christianity. Upon completion, students should be able to identify the origins, history, beliefs, and practices of the religions studied. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

REL 111 Eastern Religions 3 0 3
Prerequisites: None
Corequisites: None
This course introduces the major Asian religious traditions. Topics include Hinduism, Buddhism, Taoism, Confucianism, and Shinto. Upon completion, students should be able to identify the origins, history, beliefs, and practices of the religions studied. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

REL 112 Western Religions 3 0 3
Prerequisites: None
Corequisites: None
This course introduces the major western religious traditions. Topics include Zoroastrianism, Islam, Judaism, and Christianity. Upon completion, students should be able to identify the origins, history, beliefs, and practices of the religions studied. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

REL 211 Intro to Old Testament 3 0 3
Prerequisites: None
Corequisites: None
This course is a survey of the literature of the Hebrews with readings from the law, prophets, and other writings. Emphasis is placed on the use of literary, historical, archeological, and cultural analysis. Upon completion, students should be able to use the tools of critical analysis to read and understand Old Testament literature. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

REL 212 Intro to New Testament 3 0 3
Prerequisites: None
Corequisites: None
This course is a survey of the literature of first-century Christianity with readings from the gospels, Acts, and the Pauline and pastoral letters. Topics include the literary structure, audience, and religious perspective of the writings, as well as the historical and cultural context of the early Christian community. Upon completion, students should be able to use the tools of critical analysis to read and understand New Testament literature. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

Substance Abuse

***SAB 110 Substance Abuse Overview 3 0 0 3**
Prerequisites: None
Corequisites: None
This course provides an overview of the core concepts in substance abuse and dependence. Topics include the history of drug use/abuse, effects on societal members, treatment of addiction, and preventative measures. Upon completion, students should be able to demonstrate knowledge of the etiology of drug abuse, addiction, prevention, and treatment. Check with the North Carolina Substance Abuse Professional Practice Board (NCSAPPB) to verify if this course has been approved for training/education credit for substance abuse certification/recertification.

***SAB 140 Pharmacology 3 0 0 3**
Prerequisites: None
Corequisites: None
This course covers the pharmacology of psychoactive drugs and abused chemicals and treatment options. Emphasis is placed on the use of psychoactive drugs and related psychological and social complexities, including models for prevention and treatment. Upon completion, students should be able to understand and identify theories of addiction, major classes of drugs, treatment alternatives, and social repercussions. Check with the North Carolina Substance Abuse Professional Practice Board (NCSAPPB) to verify if this course has been approved for training/education credit for substance abuse certification/recertification.

***SAB 210 Substance Abuse Counseling 2 2 0 3**
Prerequisites: None
Corequisites: None
This course provides theory and skills acquisition by utilizing intervention strategies designed to obtain therapeutic information, support recovery, and prevent relapse. Topics include counseling individuals and dysfunctional families, screening instruments, counseling techniques and approaches, recovery and relapse, and special populations. Upon completion, students should be able to discuss issues critical to recovery, identify intervention models, and initiate a procedure culminating in cognitive/behavioral change. Check with the North Carolina Substance Abuse Professional Practice Board (NCSAPPB) to verify if this course has been approved for training/education credit for substance abuse certification/recertification

Information Systems Security

SEC 110 Security Concepts 2 2 3
Prerequisites: None
Corequisites: None
This course introduces the concepts and issues related to securing information systems and the development of policies to implement information security controls. Topics include the historical view of 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. This course has been certified by the National Security Agency, National Information Assurance Education and Training Program as meeting NSTISSI No. 4011, National Training Standard for Information Systems Security (INFOSEC) Professionals and CNSSI No. 4013 Entry Level System Administrators (SA).

SEC 150 Secure Communications 2 2 3
Prerequisites: SEC 110, NET 125 and NET 226
Corequisites: None
This course provides an overview of current technologies used to provide secure transport of information across networks. Topics include data integrity through encryption, Virtual Private Networks, SSL, SSH, and IPSec. Upon completion, students should be able to implement secure data transmission technologies. This is a Cisco Academy course.

SEC 160 Security Administration I 2 2 3
Prerequisites: SEC 110 and NET 125
Corequisites: None
This course provides an overview of security administration and fundamentals of designing security architectures. Topics include networking technologies, TCP/IP concepts, protocols, network traffic analysis, monitoring, and security best practices. Upon completion, students should be able to identify normal network traffic using network analysis tools and design basic security defenses. This course has been certified by the National Security Agency, National Information Assurance Education and Training Program as meeting NSTISSI No. 4011, National Training Standard for Information Systems Security (INFOSEC) Professionals and CNSSI No. 4013 Entry Level System Administrators (SA).

SEC 210 Intrusion Detection 2 2 3
Prerequisites: SEC 160
Corequisites: None
This course introduces the student to intrusion detection methods in use today. Topics include the types of intrusion detection products, traffic analysis, and planning and placement of intrusion detection solutions. Upon completion, students should be able to plan and implement intrusion detection solution for networks and host based systems.

SEC 220 Defense-In-Depth 2 2 3
Prerequisites: None
Corequisites: SEC 160
This course introduces students to the concepts of defense in-depth, a security industry best practice. Topics include firewalls, backup systems, redundant systems, disaster recovery, and incident handling. Upon completion, students should be able to plan effective information security defenses, backup systems, and disaster recovery procedures. This course has been certified by the National Security Agency, National Information Assurance Education and Training Program as meeting National Training Standard CNSSI No. 4013 Entry Level System Administrators (SA).

SEC 289 Security Capstone Project 1 4 3
Prerequisites: SEC 220
Corequisites: None
This course provides the student the opportunity to put into practice all the skills learned to this point. Emphasis is placed on security policy, process planning, procedure definition, business continuity, and systems security architecture. Upon completion, students should be able to design and implement comprehensive information security architecture from the planning and design phase through implementation.

SEC 293S Selected Topics in Information Security 2 2 3
Prerequisites: NET126, NOS130, NOS130 and SEC110
Corequisites: None
This course provides the student with an in-depth look at common Internet, network, and host-based attack methodologies. Topics include attack methods such as social engineering, spoofing, denial of service, man-in-the-middle, session hijacking, password cracking, malicious code, and web hacking techniques. Upon completion, students should be able to generate anomalous network traffic, identify common network attack patterns, and perform penetration testing.

Simulation & Game Development

SGD 168 Mobile SG Programming I 2 3 3
Prerequisites: CIS 115 and WEB 115
Corequisites: None
This course introduces the mobile simulation and game programming process. Topics include mobile simulation/game programming, performance tuning, animation, sound effects, music, and mobile networks. Upon completion, students should be able to apply simulation/game programming concepts to the creation of mobile simulations and games.

SGD 268 Mobile SG Programming II 2 3 3
Prerequisites: SGD 168
Corequisites: None
This course introduces advanced mobile simulation and game programming processes. Topics include advanced mobile simulation/game platforms, performance tuning, animation, sound effects, music, and mobile networks. Upon completion, students should be able to apply advanced simulation/game programming concepts to the creation of mobile simulations and games.

Sociology

SOC 210 Introduction to Sociology 3 0 3
Prerequisites: None
Corequisites: None
This course introduces the scientific study of human society, culture, and social interactions. Topics include socialization, research methods, diversity and inequality, cooperation and conflict, social change, social institutions, and organizations. Upon completion, students should be able to demonstrate knowledge of sociological concepts as they apply to the interplay among individuals, groups, and societies. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral science.

SOC 213 Sociology of the Family 3 0 3
Prerequisites: None
Corequisites: None
This course covers the institution of the family and other intimate relationships. Emphasis is placed on mate selection, gender roles, sexuality, communication, power and conflict, parenthood, diverse life-styles, divorce and remarriage, and economic issues. Upon completion, students should be able to analyze the family as a social institution and the social forces which influence its development and change. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral science.

SOC 215 Group Processes 3 0 3
Prerequisites: None
Corequisites: None
This course introduces group processes and dynamics. Emphasis is placed on small group experiences, roles and relationships within groups, communication, cooperation and conflict resolution, and managing diversity within and among groups. Upon completion, students should be able to demonstrate the knowledge and skills essential to analyze group interaction and to work effectively in a group context. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

SOC 220 Social Problems 3 0 3
Prerequisites: None
Corequisites: None
This course provides an in-depth study of current social problems. Emphasis is placed on causes, consequences, and possible solutions to problems associated with families, schools, workplaces, communities, and the environment. Upon completion, students should be able to recognize, define, analyze, and propose solutions to these problems. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral science.

SOC 225 Social Diversity 3 0 3
Prerequisites: None
Corequisites: None
This course provides a comparison of diverse roles, interests, opportunities, contributions, and experiences in social life. Topics include race, ethnicity, gender, sexual orientation, class, and religion. Upon completion, students should be able to analyze how cultural and ethnic differences evolve and how they affect personality development, values, and tolerance. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral science.

SOC 234 Sociology of Gender 3 0 3
Prerequisites: None
Corequisites: None
This course examines contemporary roles in society with special emphasis on recent changes. Topics include sex role specialization, myths and stereotypes, gender issues related to family, work, and power. Upon completion, students should be able to analyze modern relationships between men and women. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

SOC 240 Social Psychology 3 0 3
Prerequisites: None
Corequisites: None
This course examines the influence of culture and social groups on individual behavior and personality. Emphasis is placed on the process of socialization, communication, conformity, deviance, interpersonal attraction, intimacy, race and ethnicity, small group experiences, and social movements. Upon completion, students should be able to identify and analyze cultural and social forces that influence the individual in a society. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral science.

SOC 254 Rural and Urban Sociology 3 0 3
Prerequisites: None
Corequisites: None
This course applies sociological concepts to a comparative study of major social issues facing contemporary rural and urban America. Emphasis is placed on growth and development patterns, ecological factors, social organizations, social controls, and processes of change. Upon completion, students should be able to illustrate the differences and similarities that exist between urban and rural environments as they resolve contemporary issues. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

Medical Sonography

SON 110 Introduction to Sonography 1 3 3 3
Prerequisites: Enrollment in Sonography Program
Corequisites: SON 130
This course provides an introduction to medical sonography. Topics include applications, sonographic terminology, history, patient care, ethics, and basic skills. Upon completion, students should be able to define professionalism and sonographic applications and perform basic patient care skills and preliminary scanning techniques.

SON 111 Sonographic Physics 3 3 0 4
Prerequisites: CVS 163 or SON 110
Corequisites: None
This course introduces ultrasound physical principles, bioeffects, and sonographic instrumentation. Topics include sound wave mechanics, transducers, sonographic equipment, Doppler physics, bioeffects, and safety. Upon completion, students should be able to demonstrate knowledge of sound wave mechanics, transducers, sonography equipment, the Doppler effect, bioeffects, and safety.

SON 120 SON Clinical Ed I 0 0 15 5
Prerequisites: SON 110
Corequisites: None
This course provides active participation in clinical sonography. Emphasis is placed on imaging, processing, and technically evaluating sonographic examinations. Upon completion, students should be able to image, process, and evaluate sonographic examinations.

SON 121 SON Clinical Ed II 0 0 15 5
Prerequisites: SON 120
Corequisites: None
This course provides continued active participation in clinical sonography. Emphasis is placed on imaging, processing, and technically evaluating sonographic examinations. Upon completion, students should be able to image, process, and evaluate sonographic examinations.

SON 130 Abdominal Sonography I 2 3 0 3
Prerequisites: Enrollment in Sonography Program
Corequisites: SON 110
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
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
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.

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When only three numbers are listed, the middle number always designates lab hours.

SON 220 SON Clinical Ed III 0 0 24 8
Prerequisites: SON 121
Corequisites: None
This course provides continued active participation in clinical sonography. Emphasis is placed on imaging, processing, and technically evaluating sonographic examinations. Upon completion, students should be able to image, process, and evaluate sonographic examinations.

SON 221 SON Clinical Ed IV 0 0 24 8
Prerequisites: SON 220
Corequisites: None
This course provides continued active participation off campus in clinical sonography. Emphasis is placed on imaging, processing, and technically evaluating sonographic examinations. Upon completion, students should be able to image, process, and evaluate sonographic examinations.

SON 225 Case Studies 0 3 0 1
Prerequisites: SON 110 or CVS 163
Corequisites: None
This course offers the opportunity to present interesting cases found during clinical education. Emphasis is placed on presentation methods which integrate patient history, laboratory results, and sonographic findings with reference to current literature. Upon completion, students should be able to correlate information necessary for complete presentation of case studies.

SON 241 Obstetrical Sonography I 2 0 0 2
Prerequisites: SON 110
Corequisites: None
This course covers normal obstetrical sonography techniques, the normal fetal environment, and abnormal first trimester pregnancy states. Topics include gestational dating, fetal anatomy, uterine environment, and first trimester complications. Upon completion, students should be able to produce gestational sonograms which document age, evaluate the uterine environment, and recognize first trimester complications.

SON 242 Obstetrical Sonography II 2 0 0 2
Prerequisites: SON 241
Corequisites: None
This course covers second and third trimester obstetrical complications and fetal anomalies. Topics include abnormal fetal anatomy and physiology and complications in the uterine environment. Upon completion, students should be able to identify fetal anomalies, fetal distress states, and uterine pathologies.

SON 250 Vascular Sonography 1 3 0 2
Prerequisites: SON 111
Corequisites: None
This course provides an in-depth study of the anatomy and pathology of the vascular system. Topics include peripheral arterial, peripheral venous, and cerebrovascular disease testing. Upon completion, students should be able to identify normal vascular anatomy and recognize pathology of the vascular system.

SON 289 Sonographic Topics 2 0 0 2
Prerequisites: SON 110
Corequisites: None
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
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
This course introduces the fundamental elements of the Spanish language within a cultural context. Emphasis is placed on the development of basic listening, speaking, reading, and writing skills. Lab practice is expected of students. Upon completion, students should be able to comprehend and respond with grammatical accuracy to spoken and written Spanish and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

SPA 112 Elementary Spanish II 3 0 3
Prerequisites: SPA 111
Corequisites: SPA 182
This course is a continuation of SPA 111 focusing on the fundamental elements of the Spanish language within a cultural context. Emphasis is placed on the progressive development of listening, speaking, reading, and writing skills. Lab practice is expected of students. Upon completion, students should be able to comprehend and respond with increasing proficiency to spoken and written Spanish and demonstrate further cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

SPA 120 Spanish for the Workplace 3 0 3
Prerequisites: None
Corequisites: None
This course offers applied Spanish for the workplace to facilitate basic communication with people whose native language is Spanish. Emphasis is placed on oral communication and career-specific vocabulary that targets health, business, and/or public service professions. Upon completion, students should be able to communicate at a functional level with native speakers and demonstrate cultural sensitivity.

SPA 141 Culture and Civilization 3 0 3
Prerequisites: None
Corequisites: None
This course provides an opportunity to explore issues related to the Hispanic world. Topics include historical and current events, geography, and customs. Upon completion, students should be able to identify and discuss selected topics and cultural differences related to the Hispanic world. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

SPA 181 Spanish Lab I 0 2 1
Prerequisites: None
Corequisites: SPA 111
This course provides an opportunity to enhance acquisition of the fundamental elements of the Spanish language. Emphasis is placed on the progressive development of basic listening, speaking, reading, and writing skills through the use of

various supplementary learning media and materials. Upon completion, students should be able to comprehend and respond with grammatical accuracy to spoken and written Spanish and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

SPA 182 Spanish Lab II 0 2 1
Prerequisites: SPA 181
Corequisites: SPA 112
This course provides an opportunity to enhance acquisition of the fundamental elements of the Spanish language. Emphasis is placed on the progressive development of basic listening, speaking, reading, and writing skills through the use of various supplementary learning media and materials. Upon completion, students should be able to comprehend and respond with increasing proficiency to spoken and written Spanish and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

SPA 211 Intermediate Spanish I 3 0 3
Prerequisites: SPA 112
Corequisites: None
This course provides a review and expansion of the essential skills of the Spanish language. Emphasis is placed on the study of authentic and representative literary and cultural texts. Lab practice is expected of students. Upon completion, students should be able to communicate effectively, accurately, and creatively about the past, present, and future. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

SPA 212 Intermediate Spanish II 3 0 3
Prerequisites: SPA 211
Corequisites: None
This course provides a continuation of SPA 211. Emphasis is placed on the continuing study of authentic and representative literary and cultural texts. Lab practice is expected of students. Upon completion, students should be able to communicate spontaneously and accurately with increasing complexity and sophistication. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

Surveying

SRV 110 Surveying I 2 6 4
Prerequisites: EGR 115 and (MAT 121, MAT 161, MAT 171 or MAT 175)
Corequisites: None
This course introduces the theory and practice of plane surveying. Topics include measuring distances and angles, differential and profile leveling, compass applications, topography, and mapping. Upon completion, students should be able to use/care for surveying instruments, demonstrate field note techniques, and apply the theory and practice of plane surveying.

SRV 111 Surveying II 2 6 4
Prerequisites: SRV 110
Corequisites: None
This course introduces route surveying and roadway planning and layout. Topics include simple, compound, reverse, spiral, and vertical curves; geometric design and layout; planning of cross-section and grade line; drainage; earthwork calculations; and mass diagrams. Upon completion, students should be able to calculate and lay out highway curves; prepare roadway plans, profiles, and sections; and perform slope staking.

SRV 210 Surveying III 2 6 4
Prerequisites: SRV 110
Corequisites: None
This course introduces boundary surveying, land partitioning, and calculations of areas. Topics include advanced traverses and adjustments, preparation of survey documents, and other related topics. Upon completion, students should be able to research, survey, and map a boundary.

SRV 220 Surveying Law 2 2 3
Prerequisites: SRV 110
Corequisites: None
This course introduces the law as related to the practice of surveying. Topics include surveyors' responsibilities, deed descriptions, title searches, eminent domain, easements, weight of evidence, riparian rights, and other related topics. Upon completion, students should be able to identify and apply the basic legal aspects associated with the practice of land surveying.

SRV 230 Subdivision Planning 1 6 3
Prerequisites: SRV 111, SRV 210, and CIV 211
Corequisites: None
This course covers the planning aspects of residential subdivisions from analysis of owner and municipal requirements to plat layout and design. Topics include municipal codes, lot sizing, roads, incidental drainage, esthetic considerations, and other related topics. Upon completion, students should be able to prepare a set of subdivision plans.

SRV 240 Topographic/Site Surveying 2 6 4
Prerequisites: SRV 110
Corequisites: SRV 210
This course covers topographic, site, and construction surveying. Topics include topographic mapping, earthwork, site planning, construction staking, and other related topics. Upon completion, students should be able to prepare topographic maps and site plans and locate and stake out construction projects.

SRV 250 Advanced Surveying 2 6 4
Prerequisites: SRV 111
Corequisites: None
This course covers advanced topics in surveying. Topics include photogrammetry, astronomical observations, coordinate systems, error theory, GPS, GIS, Public Land System, and other related topics. Upon completion, students should be able to apply advanced techniques to the solution of complex surveying problems.

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When only three numbers are listed, the middle number always designates lab hours.

Surgical Technology

SUR 110 Introduction to Surgical Technology 3 0 0 3
Prerequisites: Enrollment in the Surgical Technology program
Corequisites: SUR 111
This course provides a comprehensive study of peri-operative care, patient care concepts, and professional practice concepts within the profession of surgical technology. Topics include: introductory concepts, organizational structure and relationships, legal, ethical and moral issues, medical terminology, pharmacology, anesthesia, wound healing management concepts, and technological sciences. Upon completion, students should be able to apply theoretical knowledge of the course topics to the practice of surgical technology.

SUR 111 Periop Patient Care 5 6 0 7
Prerequisites: Enrollment in the Surgical Technology program
Corequisites: BIO 163 and SUR 110
This course provides the surgical technology student the theoretical knowledge required to function in the pre-operative, intra-operative, and post-operative role. Topics include asepsis, disinfection and sterilization, physical environment, instrumentation, equipment, peri-operative patient care, and peri-operative case management. Upon completion, students should be able to apply the principles and practice of the per-operative team member to the operative environment.

SUR 122 Surgical Procedures I 5 3 0 6
Prerequisites: BIO 163, SUR 110 and SUR 111
Corequisites: SUR 123 or STP 101
This course provides an introduction to selected basic and intermediate surgical specialties that students are exposed to the first clinical rotation. Emphasis is placed on related surgical anatomy, pathology, and procedures that enhance theoretical knowledge of patient care, instrumentation, supplies and equipment. Upon completion, students should be able to correlate, integrate, and apply theoretical knowledge of the course topics to the clinical operative environment.

SUR 123 SUR Clinical Practice I 0 0 21 7
Prerequisites: SUR 110 and SUR 111
Corequisites: SUR 122
This course provides clinical experience with a variety of perioperative assignments to build upon skills learned in SUR 111. Emphasis is placed on the scrub and circulating roles of the surgical technologist including aseptic technique and basic case preparation for selected surgical procedures. Upon completion, students should be able to prepare, assist with, and dismantle basic surgical cases in both the scrub and circulating roles.

SUR 134 Surgical Procedures II 5 0 0 5
Prerequisites: SUR 123 or STP 101
Corequisites: SUR 135
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
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 123
Corequisites: SUR 134 and SUR 135
This course provides employability skills and an overview of theoretical knowledge in preparation for certification. Topics include test-taking strategies, resume preparation, interviewing strategies, communication skills, and teamwork concepts. 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: None
Corequisites: None
This course is designed to provide individualized experience in advanced practice, education, circulating, and managerial skills. Emphasis is placed on developing and demonstrating proficiency in skills necessary for advanced practice. Upon completion, students should be able to assume leadership roles in a chosen specialty area.

SUR 211 Adv Theoretical Concepts 2 0 0 2
Prerequisites: None
Corequisites: None
This course covers theoretical knowledge required for extension of the surgical technologist role. Emphasis is placed on advanced practice in complex surgical specialties, educational methodologies, and managerial skills. Upon completion, students should be able to assume leadership roles in a chosen specialty area.

SUR 212 SUR Clinical Supplement 0 0 12 4
Prerequisites: SUR 135
Corequisites: None
This course provides the opportunity to continue mastering the continuity of care in the peri-operative assignment. Emphasis is placed on maintaining and enhancing acquired clinical skills in the peri-operative setting. Upon completion, students should be able to demonstrate mastery of surgical techniques in the role of the entry level surgical technologist.

Sustainability Technologies

SST 110 Intro to Sustainability 3 0 3
Prerequisites: None
Corequisites: None
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: DMA 050 or placement
Corequisites: None
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
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
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
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
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. Check with the North Carolina Substance Abuse Professional Practice Board (NCSAPPB) to verify if this course has been approved for training/education credit for substance abuse certification/recertification.

Transportation

***TRN 110 Intro to Transport Tech 1 2 2**
Prerequisites: None
Corequisites: None
This course covers workplace safety, hazardous materials, environmental regulations, hand tools, service information, basic concepts, vehicle systems, and common transportation industry terminology. Topics include familiarization with major vehicle systems, proper use of various hand and power tools, material safety data sheets, and personal protective equipment. Upon completion, students should be able to demonstrate appropriate safety procedures, identify and use basic shop tools, and describe government regulations regarding transportation repair facilities.

***TRN 120 Basic Transp Electricity 4 3 5**
Prerequisites: None
Corequisites: None
This course covers basic electrical theory, wiring diagrams, test equipment, and diagnosis, repair and replacement of batteries, starters, and alternators. Topics include Ohm's Law, circuit construction, wiring diagrams, circuit testing, and basic troubleshooting. Upon completion, students should be able to properly use wiring diagrams, diagnose, test, and repair basic wiring, battery, starting, charging, and electrical concerns.

***TRN 120A Basic Transp Electrical Lab 0 3 1**
Prerequisites: None
Corequisites: TRN 120
This course provides a lab that allows students to enhance their understanding of electrical components and circuits used in the transportation industry. Topics include inspection, diagnosis, and repair of electrical components and circuits using appropriate service information for specific transportation systems. Upon completion, students should be able to diagnose and service electrical components and circuits used in transportation systems.

***TRN 130 Intro to Sustainable Transp 2 2 3**
Prerequisites: None
Corequisites: None
This course provides an overview of alternative fuels and alternative fuel vehicles. Topics include composition and use of alternative fuels including compressed natural gas, biodiesel, ethanol, hydrogen, and synthetic fuels, hybrid/electric, and vehicles using alternative fuels. Upon completion, students should be able to identify alternative fuel vehicles, explain how each alternative fuel delivery system operates, and perform minor repairs.

***TRN 140 Transp Climate Control 1 2 2**
Prerequisites: None
Corequisites: None
This course covers the theory of refrigeration and heating, electrical/electronic/pneumatic controls, and diagnosis and 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 diagnose and repair vehicle climate control systems.

***TRN 140A Transp Climate Control Lab 1 2 2**
Prerequisites: None
Corequisites: TRN 140
This course provides experiences for enhancing student skills in the diagnosis and repair of transportation climate control systems. Emphasis is placed on reclaiming, recovery, recharging, leak detection, climate control components, diagnosis, air conditioning equipment, tools and safety. Upon completion, students should be able to describe the operation, diagnose, and safely service climate control systems using appropriate tools, equipment, and service information.

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***TRN 145 Adv Transp Electronics** **2 3 3**
Prerequisites: TRN 120
Corequisites: None
This course covers advanced transportation electronic systems including programmable logic controllers, on-board data networks, telematics, high voltage systems, navigation, collision avoidance systems and electronic accessories. Topics include interpretation of wiring schematics, reprogramming PLC's, diagnosing and testing data networks and other electronic concerns. Upon completion, students should be able to reprogram PLC's, diagnose and test data networks and other electronic concerns, and work safely with high voltage systems.

Veterinary Medical Technology

VET 110 Animal Breeds and Husbandry **2 2 0 3**
Prerequisites: Enrollment in the VMT program
Corequisites: None
This course provides a study of the individual breed characteristics and management techniques of the canine, feline, equine, bovine, porcine, ovine, caprine, and laboratory animals. Topics include physiological data, animal health management, and basic care and handling of animals. Upon completion, students should be able to identify breeds of domestic and laboratory animals, list physiological data, and outline basic care, handling, and management techniques.

VET 120 Veterinary Anatomy and Physiology **3 3 0 4**
Prerequisites: Enrollment in the VMT program
Corequisites: None
This course covers the structure and function of the animal body with emphasis on the similarities and differences among domestic animals. Emphasis is placed on the structure and function of the major physiological systems of domestic, laboratory, and zoo animals. Upon completion, students should be able to identify relevant anatomical structure and describe basic physiological processes for the major body systems.

VET 121 Veterinary Medical Terminology **3 0 0 3**
Prerequisites: Enrollment in the VMT program
Corequisites: None
This course covers the basic medical terminology required for veterinary technicians. Topics include the pronunciation, spelling and definition of word parts and vocabulary terms unique to the anatomy, clinical pathology, and treatment of animals. Upon completion, students should be able to demonstrate knowledge and understanding of basic medical terms as they relate to veterinary medicine. It is highly recommended that this course be taken in the first semester of the Veterinary Technology program.

VET 123 Veterinary Parasitology **2 3 0 3**
Prerequisites: VET 110, VET 120 and VET 121
Corequisites: None
This course covers the common internal and external parasites of companion animals, livestock, selected zoo animals, and wild animals. Emphasis is placed on laboratory diagnosis of the most common forms of the parasite through fecal, urine, skin and blood exams. Upon completion, students should be able to identify common parasites and discuss life-cycles, treatment and prevention strategies, and public health aspects of veterinary parasitology.

VET 125 Veterinary Diseases I **2 0 0 2**
Prerequisites: VET 110, VET 120 and VET 121
Corequisites: None
This course introduces basic immunology, fundamentals of disease processes including inflammation, and common infectious diseases of animals and their prevention through immunization. Topics include fundamental disease processes, principles of medical therapy, immunologic processes, infections and zoonotic diseases of domestic animals, and prevention of disease. Upon completion, students should be able to describe basic disease and immunological processes, recognize infections and zoonotic diseases, and discuss prevention strategies.

VET 126 Veterinary Diseases II **1 3 0 2**
Prerequisites: VET 125
Corequisites: VET 211, VET 213, and VET 215
This course includes the study of basic disease processes, fundamentals of pathology and other selected topics of veterinary medicine. Topics include histopathology, pathologic changes associated with common diseases of animals, necropsy procedures, specimen handling, and other selected material. Upon completion, students should be able to describe basic pathological changes associated with disease, recognize histopathologic changes, and properly perform collection and submission of necropsy specimens.

VET 131 Veterinary Lab Techniques I **2 3 0 3**
Prerequisites: VET 110, VET 123 and VET 125
Corequisites: VET 133
This course includes the fundamental study of hematology, hemostasis, and urinalysis. Emphasis is placed on basic hematology and urinalysis techniques, manual skill development, instrumentation, quality control, and applications to veterinary science. Upon completion, students should be able to perform manual and automated CBCs, hemostatic assays, and complete urinalyses and maintain laboratory equipment and quality control.

VET 133 Veterinary Clinical Practices I **2 3 0 3**
Prerequisites: VET 110, VET 123 and VET 125
Corequisites: VET 131, VET 120
This course introduces basic practices and techniques of the veterinary clinic and biomedical research fields for dogs, cats, and laboratory animals. Topics include physical exam, husbandry, housing, sanitation, restraint and handling, administration of medications, anesthesia and euthanasia techniques, grooming and dentistry. Upon completion, students should be able to properly restrain, medicate, examine, groom, and maintain each of the species studied.

VET 137 Veterinary Office Practices **1 2 0 2**
Prerequisites: Enrollment in the VMT program
Corequisites: VET 121
This course is designed to teach basic administrative techniques, client communication skills, and regulations pertaining to veterinary medicine. Topics include record keeping, telephone techniques, professional liability, office procedures, state and national regulatory laws, human relations, and animal welfare. Upon completion, students should be able to demonstrate effective communication techniques, office procedures, and knowledge of regulatory laws and issues relating to animal welfare.

VET 211 Veterinary Lab Techniques II 2 3 0 3
Prerequisites: VET 131
Corequisites: VET 213
This course covers advanced hematology, serology, immunology, and clinical chemistry. Topics include advanced hematologic, serologic, and immunologic test procedures, manual and automated clinical chemistry procedures, laboratory safety, and quality control. Upon completion, students should be able to collect, prepare, and analyze serum and plasma samples and outline quality control and safety procedures.

VET 212 Veterinary Lab Techniques III 2 3 0 3
Prerequisites: VET 211
Corequisites: VET 214
This course introduces the basic principles of microbiology, histology and cytology. Emphasis is placed on collection of microbiological samples for culture and sensitivity and collection and preparation of samples for histological and cytological examination. Upon completion, students should be able to perform microbiological culture and sensitivity and evaluate cytology and histology specimens.

VET 213 Veterinary Clinical Practice II 1 9 0 4
Prerequisites: VET 133
Corequisites: VET 126, VET 211, and VET 215
This course covers basic radiography, anesthesia techniques, dentistry, sample collection and handling, surgical assistance and instrumentation, sterile techniques, and patient record keeping. Topics include basic radiology, injectable and gas anesthesia, dentistry, instrument identification and care, sterile surgical technique, specimen collection and processing, and maintenance of patient records. Upon completion, students should be able to take and process radiographs, administer and monitor anesthesia, assist in surgical procedures, collect specimens, and maintain surgical records.

VET 214 Veterinary Clinical Practice III 1 9 0 4
Prerequisites: VET 126, VET 211, VET 213, VET 215
Corequisites: VET 212
The course covers advanced anesthetic techniques, special radiographic techniques, advanced dentistry, sample collection and processing, bandaging, and emergency and critical care procedures. Topics include induction and maintenance of anesthesia, radiographic contrast studies, advanced dentistry, external coaptation, intensive care procedures, and advanced sample collection techniques. Upon completion, students should be able to demonstrate proficiency in sample collection, radiology, anesthesia, critical care and emergency procedures, and dentistry.

VET 215 Veterinary Pharmacology 3 0 0 3
Prerequisites: CHM 130 and CHM 130A, or CHM 151, VET 125
Corequisites: VET 213
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
This course covers the topics relevant to the medical and surgical techniques for the common domestic large animal species. Topics include physical exam, restraint, sample collection, bandaging, emergency treatment, surgical and obstetrical procedures and instruments, herd health, and lameness topics. Upon completion, students should be able to safely perform restraint, examination, and sample collection; assist surgical, obstetrical, and emergency procedures; and discuss herd health.

VET 237 Animal Nutrition 3 0 0 3
Prerequisites: CHM 130 and CHM 130A
Corequisites: None
This course covers the principles of nutrition and their application to feeding practices of domestic, farm, and companion animals. Topics include basic nutrients and nutritional needs of individual species, proximate analysis, interpretation of food and feed labels, types of animal foods, and ration formulation. Upon completion, students should be able to select appropriate diets for animals in various stages of health and disease, analyze nutrition labels, and identify foods.

Water and Wastewater Treatment

WAT 161 Solid Waste Management 2 0 2
Prerequisite: None
Corequisites: None
This course covers the theory, practice, and regulation of solid waste management. Topics include generation, characteristics, and disposal options for management of solid wastes and sludges. Upon completion, students should be able to identify the sources and characteristics of solid wastes and sludges and describe the alternatives available for their disposal.

Web Technologies

WEB 110 Internet/Web Fundamentals 2 2 3
Prerequisite: None
Corequisites: None
This course introduces World Wide Web Consortium (W3C) standard markup language and services of the Internet. Topics include creating web pages, search engines, FTP, and other related topics. Upon completion, students should be able to deploy a hand-coded website created with mark-up language, and effectively use and understand the function of search engines.

WEB 111 Intro to Web Graphics 2 2 3
Prerequisite: None
Corequisites: None
This course introduces the creation of web graphics, and addressing problems peculiar to WWW display using appropriate software. Topics include web graphics file types, optimization, RGB color, web typography, elementary special effects, transparency, animation, slicing, basic photo manipulation, and other related topics. Upon completion, students should be able to create graphics, such as animated banners, buttons, backgrounds, logos, and manipulate photographic images for Web delivery. Emphasis is placed on graphic design principles and industry standard Adobe software.

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WEB 115 Web Markup and Scripting 2 2 3
Prerequisite: Basic computer literacy including file management skills is necessary. (CTS 060 will provide students the foundation for this course.)
Corequisites: None
This course introduces Worldwide Web Consortium (W3C) standard client-side Internet programming using industry-established practices. Topics include JavaScript, markup elements, stylesheets, validation, accessibility, standards, and browsers. Upon completion, students should be able to develop hand-coded web pages using current markup standards. Emphasis is placed on XHTML, 1.0 Transitional, SCC-1 and CSS-2 markup.

WEB 120 Intro Internet Multimedia 2 2 3
Prerequisites: WEB 115, WEB 210, and WEB 215
Corequisites: None

This is the first of two courses covering the creation of internet multimedia. Topics include internet multimedia file types, file type conversion, acquisition of digital audio/video, streaming audio/video and graphics animation plug-in programs and other related topics. Upon completion, students should be able to create internet multimedia presentations utilizing a variety of methods and applications.

WEB 125 Mobile Web Design 2 2 3
Prerequisites: WEB 110, and WEB 115
Corequisites: None
This course introduces students to web design for mobile devices. Topics include planning an effective mobile Web site, industry standard Mobile Markup Language, CSS3, multimedia, m-commerce, social media, testing and publishing. Upon completion, students should be able to plan, develop, test, and publish Web content designed for mobile devices.

WEB 141 Mobile Interface Design 2 2 3
Prerequisites: WEB 111
Corequisites: None
This course covers current design standards and emerging approaches related to the design and development of user interfaces for mobile devices. Emphasis is placed on research and evaluation of standard and emerging practices for effective interface and user experience design. Upon completion, students should be able to design effective and usable interfaces for mobile devices.

WEB 151 Mobile Applications Dev I 2 2 3
Prerequisites: CIS 115
Corequisites: None
This course introduces students to programming technologies, design and development related to mobile applications. Topics include accessing device capabilities, industry standards, operating systems, and programming for mobile applications using an OS Software Development Kit (SDK). Upon completion, students should be able to create basic applications for mobile devices.

WEB 182 PHP Programming 2 2 3
Prerequisite: CIS 115 and WEB 115
Corequisites: None
This course introduces students to the server-side, HTML-embedded scripting language PHP. Emphasis is placed on programming techniques required to create dynamic web pages using PHP scripting language features. Upon completion, students should be able to design, code, test, debug, and create a dynamic web site using the PHP scripting language.

WEB 186 XML Technology 2 2 3
Prerequisites: CIS 115 and DBA 110
Corequisites: None
This course is designed to introduce students to XML and related internet technologies. Topics include extendible style language (XSL), document object model (DOM), extendible style sheet language transformation (XSLT), and simple object access protocol (SOAP). Upon completion, students should be able to create a complex XML document. Oxygen XML Editor will be used in this course.

WEB 210 Web Design 2 2 3
Prerequisite: WEB 115
Corequisites: None
This course introduces intermediate to advanced web design techniques. Topics include customer expectations, advanced markup language, multimedia technologies, usability and accessibility practices, and techniques for the evaluation of web design. Upon completion, students should be able to employ advanced design techniques to create high impact and highly functional web sites. Emphasis is placed on CSS layout techniques.

WEB 213 Internet Mkt & Analytics 2 2 3
Prerequisite: WEB 115
Corequisites: None
This course introduces students to Search Engine Optimization (SEO), Search Engine Marketing (SEM) and web analytics. Topics include Search Engine Optimization (SEO), Pay Per Click advertising (PPC), Search Engine Marketing (SEM), web analytics, eye-tracking software and email marketing. Upon completion, students should be able to set up, monitor and maintain SEO optimized websites; and develop strategies for online marketing and advertising plans.

WEB 214 Social Media 2 2 3
Prerequisite: WEB 210
Corequisites: None
This course introduces students to social media for organizations. Topics include social media, marketing strategy, brand presence, blogging, social media analytics and technical writing. Upon completion, students should be able to utilize popular social media platforms as part of a marketing strategy, and work with social media analytics tools.

WEB 215 Adv Markup and Scripting 2 2 3
Prerequisite: WEB 115 and WEB 182
Corequisites: None
This course covers advanced programming skills required to design Internet applications. Emphasis is placed on programming techniques required to support Internet applications. Upon completion, students should be able to design, code, debug, and document Internet-based programming solutions to various real-world problems using an appropriate programming language. Major emphasis is placed on JavaScript, DOM scripting, and JavaScript frameworks.

WEB 225 Content Management Sys 2 2 3
Prerequisites: WEB110, WEB 182, and WEB 210
Corequisites: None
This course introduces students to Content Management Systems (CMS) designed for the publication of Web content to Web sites. Topics include individual user accounts, administration menus, RSS-feeds, customizable layout, flexible account privileges, logging, blogging systems, creating online forums, and modules. Upon completion, students should be able to register and maintain individual user accounts and create a business website and/or an interactive community website.

WEB 250 Database Driven Websites 2 2 3
Prerequisites: DBA 110, DBA 120, WEB 182 and WEB 210
Corequisites: None
This course introduces dynamic (database-driven) website development. Topics include the use of basic database CRUD statements (create, read, update and delete) incorporated into web applications, as well as in software architecture principles. Upon completion, students should be able to design and develop database driven web applications according to industry standards.

WEB 251 Mobile Application Dev II 2 2 3
Prerequisite: WEB 151
Corequisites: None
This course covers advanced applications and custom programming to develop applications for mobile devices. Topics include device capabilities, OS specific Software Development Kits (SDK), scripting for functionality and designing interactivity. Upon completion, students should be able to demonstrate effective programming techniques to develop advanced mobile applications.

***WEB 289 Internet Technologies Project 1 4 3**
Prerequisites: WEB 250
Corequisites: None
This course provides an opportunity to complete a significant Web technologies project from the design phase through implementation with minimal instructor support. Emphasis is placed on project definition, documentation, installation, testing, presentation, and training. Upon completion, students should be able to complete an Internet project from the definition phase through implementation.

Welding

WLD 110 Cutting Processes 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 thicknesses.

WLD 112 Basic Welding Processes 1 3 2
Prerequisites: None
Corequisites: None
This course introduces basic welding and cutting. Emphasis is placed on beads applied with gases, mild steel fillers, and electrodes and the capillary action of solder. Upon completion, students should be able to set up welding and oxy-fuel equipment and perform welding, brazing, and soldering processes.

WLD 113 Soldering and Brazing 1 2 2
Prerequisites: None
Corequisites: None
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
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
This course is designed to enhance skills with the shielded metal arc (stick) welding process. Emphasis is placed on advancing manipulative skills with SMAW electrodes on varying joint geometry. Upon completion, students should be able to perform groove welds on carbon steel with prescribed electrodes in the flat, horizontal, vertical, and overhead positions.

WLD 121 GMAW (MIG) FCAW/Plate 2 6 4
Prerequisites: None
Corequisites: None
This course introduces metal arc welding and flux core arc welding processes. Topics include equipment setup and fillet and groove welds with emphasis on application of GMAW and FCAW electrodes on carbon steel plate. Upon completion, students should be able to perform fillet welds on carbon steel with prescribed electrodes in the flat, horizontal, and overhead positions.

WLD 122 GMAW (MIG) Plate/Pipe 1 6 3
Prerequisites: WLD 121
Corequisites: None
This course is designed to enhance skills with the gas metal arc (MIG) welding process. Emphasis is placed on advancing skills with the GMAW process making groove welds on carbon steel plate and pipe in various positions. Upon completion, students should be able to perform groove welds with prescribed electrodes on various joint geometry.

WLD 131 GTAW (TIG) Plate 2 6 4
Prerequisites: None
Corequisites: None
This course introduces the gas tungsten arc (TIG) welding process. Topics include correct selection of tungsten, polarity, gas, and proper filler rod with emphasis placed on safety, equipment setup, and welding techniques. Upon completion, students should be able to perform GTAW fillet and groove welds with various electrodes and filler materials.

WLD 132 GTAW (TIG) Plate/Pipe 1 6 3
Prerequisites: WLD 131
Corequisites: None
This course is designed to enhance skills with the gas tungsten arc (TIG) welding process. Topics include setup, joint preparation, and electrode selection with emphasis on manipulative skills in all welding positions on plate and pipe. Upon completion, students should be able to perform GTAW welds with prescribed electrodes and filler materials on various joint geometry.

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WLD 141 Symbols and Specifications 2 2 3
Prerequisites: None
Corequisites: None
This course introduces the basic symbols and specifications used in welding. Emphasis is placed on interpretation of lines, notes, welding symbols, and specifications. Upon completion, students should be able to read and interpret symbols and specifications commonly used in welding.

WLD 145 Thermoplastic Welding 1 3 2
Prerequisite: None
Corequisites: None
This course introduces the thermoplastic welding processes and materials identification. Topics include filler material selection, identification, joint design, and equipment setup with emphasis on bead types and applications. Upon completion, students should be able to perform fillet and groove welds using thermoplastic materials.

WLD 151 Fabrication I 2 6 4
Prerequisites: WLD 110, WLD 115, WLD 116, and WLD 131
Corequisites: None
This course introduces the basic principles of fabrication. Emphasis is placed on safety, measurement, layout techniques, and the use of fabrication tools and equipment. Upon completion, students should be able to perform layout activities and operate various fabrication and material handling equipment.

WLD 212 Inert Gas Welding 1 3 2
Prerequisites: None
Corequisites: None
This course introduces inert gas-shielded welding methods (MIG/TIG). Topics include correct selection of consumable and non-consumable electrodes, equipment setup, safety, and welding techniques. Upon completion, students should be able to perform inert gas welding in flat, horizontal, and overhead positions.

WLD 215 SMAW (Stick) Pipe 1 9 4
Prerequisites: WLD 115 or WLD 116
Corequisites: None
This course covers the knowledge and skills that apply to welding pipe. Topics include pipe positions, joint geometry, and preparation with emphasis placed on bead application, profile, and discontinuities. Upon completion, students should be able to perform SMAW welds to applicable codes on carbon steel pipe with prescribed electrodes in various positions.

WLD 231 GTAW (TIG) Pipe 1 6 3
Prerequisites: WLD 132
Corequisites: None
This course covers gas tungsten arc welding on pipe. Topics include joint preparation and fit up with emphasis placed on safety, GTAW welding technique, bead application, and joint geometry. Upon completion, students should be able to perform GTAW welds to applicable codes on pipe with prescribed electrodes and filler materials in various pipe positions.

WLD 251 Fabrication II 1 6 3
Prerequisites: WLD 151
Corequisites: None
This course covers advanced fabrication skills. Topics include advanced layout and assembly methods with emphasis on the safe and correct use of fabrication tools and equipment. Upon completion, students should be able to fabricate projects from working drawings.

WLD 261 Certification Practices 1 3 2
Prerequisites: WLD 115, WLD 121, and WLD 131
Corequisites: None
This course covers certification requirements for industrial welding processes. Topics include techniques and certification requirements for pre-qualified joint geometry. Upon completion, students should be able to perform welds on carbon steel plate and/or pipe according to applicable codes.

WLD 262 Inspection and Testing 2 2 3
Prerequisites: None
Corequisites: None
This course introduces destructive and nondestructive testing methods. Emphasis is placed on safety, types and methods of testing, and the use of testing equipment and materials. Upon completion, students should be able to understand and/or perform a variety of destructive and nondestructive testing processes.

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