



CATALOG



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2013-2014 CALENDAR

Fall Semester 2013

August

19 First day of classes

21 Last day for schedule adjustment for full-term courses

September

2 Labor Day Holiday (College closed)

October

14-15 Fall Break - no classes (College Services closed)

14 Staff Professional Development/Faculty Break
(College Services closed)

15 Celebration of Excellence (College Services closed)

November

27-30 Thanksgiving Break (College closed)

December

1 College Closed

9-14 Exam Week

14 Last day of classes

16 Grades due by Noon

20-31 Holiday Break (College closed)

Spring Semester 2014

January

1 New Year's Day (College closed)

2 College reopens, faculty report, open registration

3 Faculty Professional Development Day

6 First day of classes

8 Last day for schedule adjustment

20 Martin Luther King Jr. Holiday (College closed)

March

3-8 Spring Break - no curriculum classes

6 Staff Professional Development Day

April

15 Honors Ceremony

18-20 Good Friday Holiday (College closed)

28 - May 3 Exam Week

May

3 Last day of classes

5 College Summer hours begin

6 Grades due by Noon

8 Commencement

Summer Term 2014

May

12 Faculty Report

14 First day of classes

15 Last day for schedule adjustment (for full-term courses)

26 Memorial Day Holiday (College closed)

July

4 Independence Day Holiday (College closed)

22 Last day of classes

23 Grades due by 5pm

GTCC

GUILFORD TECHNICAL
COMMUNITY COLLEGE

The academic calendars on this page are for planning purposes and are subject to change. Classes will not be held on inclement weather days if the College has not missed instructional days.

welcome



Congratulations on choosing Guilford Technical Community College (GTCC) as the college where you will continue your path to academic and career success!

Whether your goal is to earn a technical certificate or degree and immediately enter the workplace or earn a two-year degree before transferring to a four-year university, the faculty and staff of GTCC are here to support you in your journey.

This catalog serves to 1) outline an academic pathway for current and future GTCC students, 2) reaffirm our commitment to your academic and professional success, and 3) help you make informed decisions about your education and your future.

Since 1958, GTCC has provided accessible, affordable, and quality programs and services to our community. In the words of Dallas Herring, the founder of the North Carolina Community College System, it is our goal to

“...take the people where they are and carry them as far as they can go.... If they cannot read, then we will simply teach them to read and make them proud of their achievement. If they did not finish high school but have a mind to do it, then we will offer them a high school education at a time and in a place convenient to them and at a price within their reach. If their talent is technical or vocational, then we will simply offer them instruction, whatever the field, however complex or however simple, that will provide them with the knowledge and the skill they can sell in the marketplaces of our State, and thereby contribute to its scientific and industrial growth. If their needs are in the great tradition of liberal education, then we will simply provide them the instruction, extending through two years of standard college work, which will enable them to go to the University or to senior college and on into life in numbers unheard of before in North Carolina. If their needs are for cultural advancement, intellectual growth or civic understanding, then we will simply make available to them the wisdom of the ages and the enlightenment of our times and help them to maturity.”

We are here to nurture your growth and to help you succeed in whatever you want to do. Again, welcome to GTCC!

Randy Parker
President, GTCC

Directory

Location	Key	Building Name	Location	Key	Building Name
1	AB	Auto Body	13	ER3	ERTC 3/Service Building
2	TC	Transportation Complex	14	ER4	ERTC 4/Drive Track
3	BP	Burn Pits	15	DS	Fountain Dental Science
4	BH	Business Hall	16	GH	Gerrald Hall
5	T1	Center for Business & Industry Offices	17	HT	Hassell Health Technologies
6	CEPJ	Central Energy Plant	18	--	CBD / IIRER / Grant Writing Offices
7	CO	Cline Observatory	19	HM	Koury Hospitality Careers
8	CT	Community Training Center	20	LR	Learning Resource Center
9	T2	CBI Conference Center	21	MH	Machinery Hall
10	DH	Davis Hall	22	CC	Medlin Campus Center
11	ER1	ERTC 1/Burn Tower	23	PS	Public Safety
12	ER2	ERTC 2/Drill Tower	24	SH	Science Hall
			25	AT	Sears Applied Technologies
			26	SC	Service Careers
			27	WLD	Welding
			28	JWH	James Williams Hall

GTCC JAMESTOWN CAMPUS
601 HIGH POINT ROAD
JAMESTOWN, NC 27282

Legend

POLICE

First Aid

Bus Stop

Information

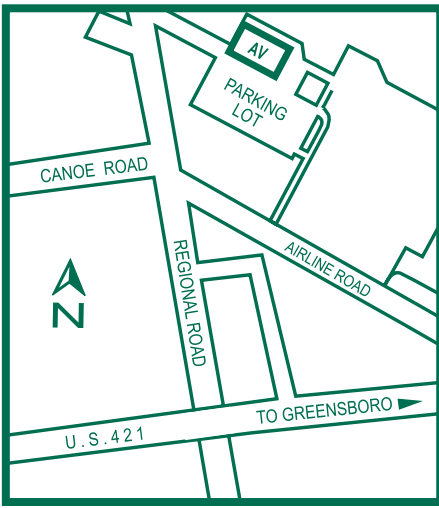
Dining

Emergency Telephone

Parking Lot Identifiers

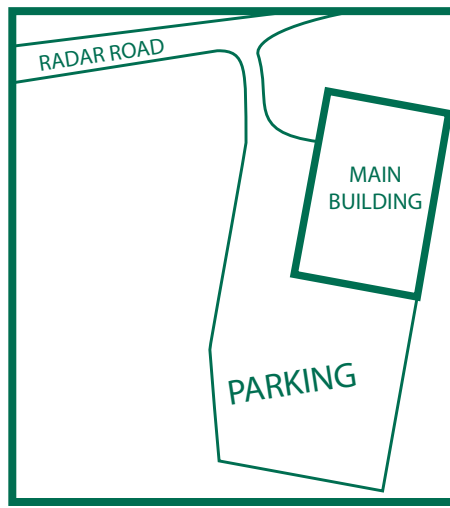
Emergency Evacuation Assembly Area





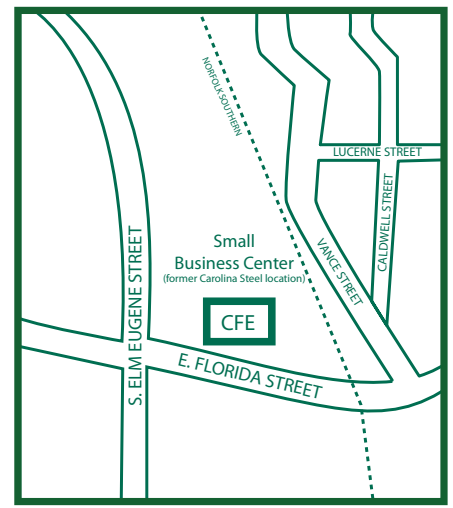
Aviation Center

AV GTCC Aviation Center
260 Regional Road,
Greensboro



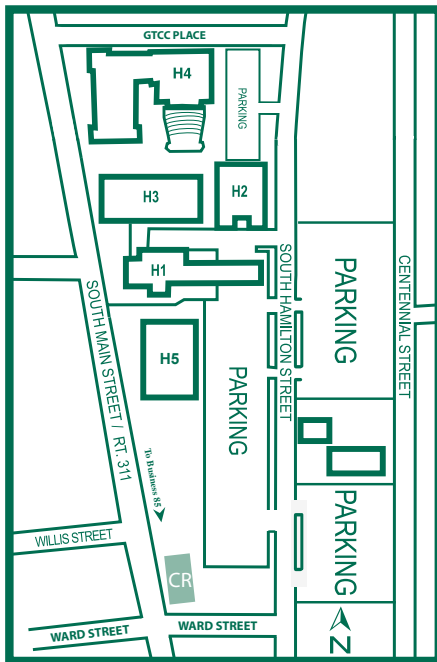
Aviation Center II

819 Radar Road
Greensboro



Small Business Center - Greensboro

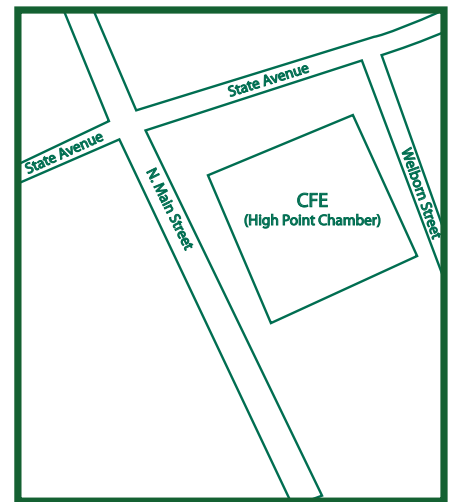
1451 S. Elm Eugene Street, Suite 1201
Greensboro, NC



High Point Campus

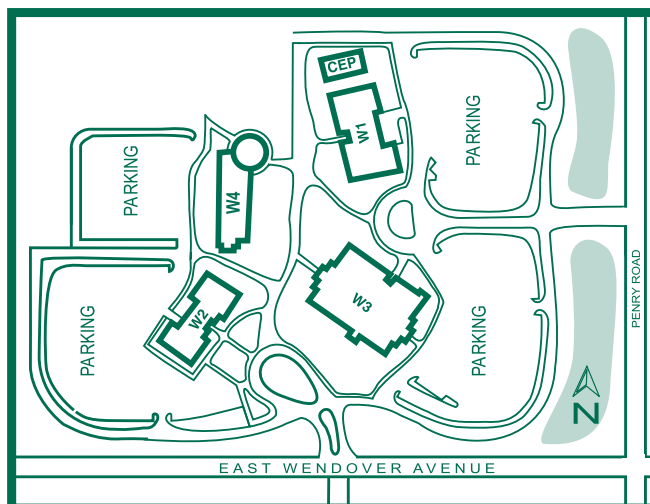
H1 901 South Main Street (Main Office)
H2 Upholstery Building
H3 Basic Skills Building
H4 Entertainment Technology Building
H5 Classroom Building

CR GTCC Craft Furniture Store
1111 S. Main Street



Small Business Center - High Point

1634 North Main Street
High Point, NC



Greensboro Campus

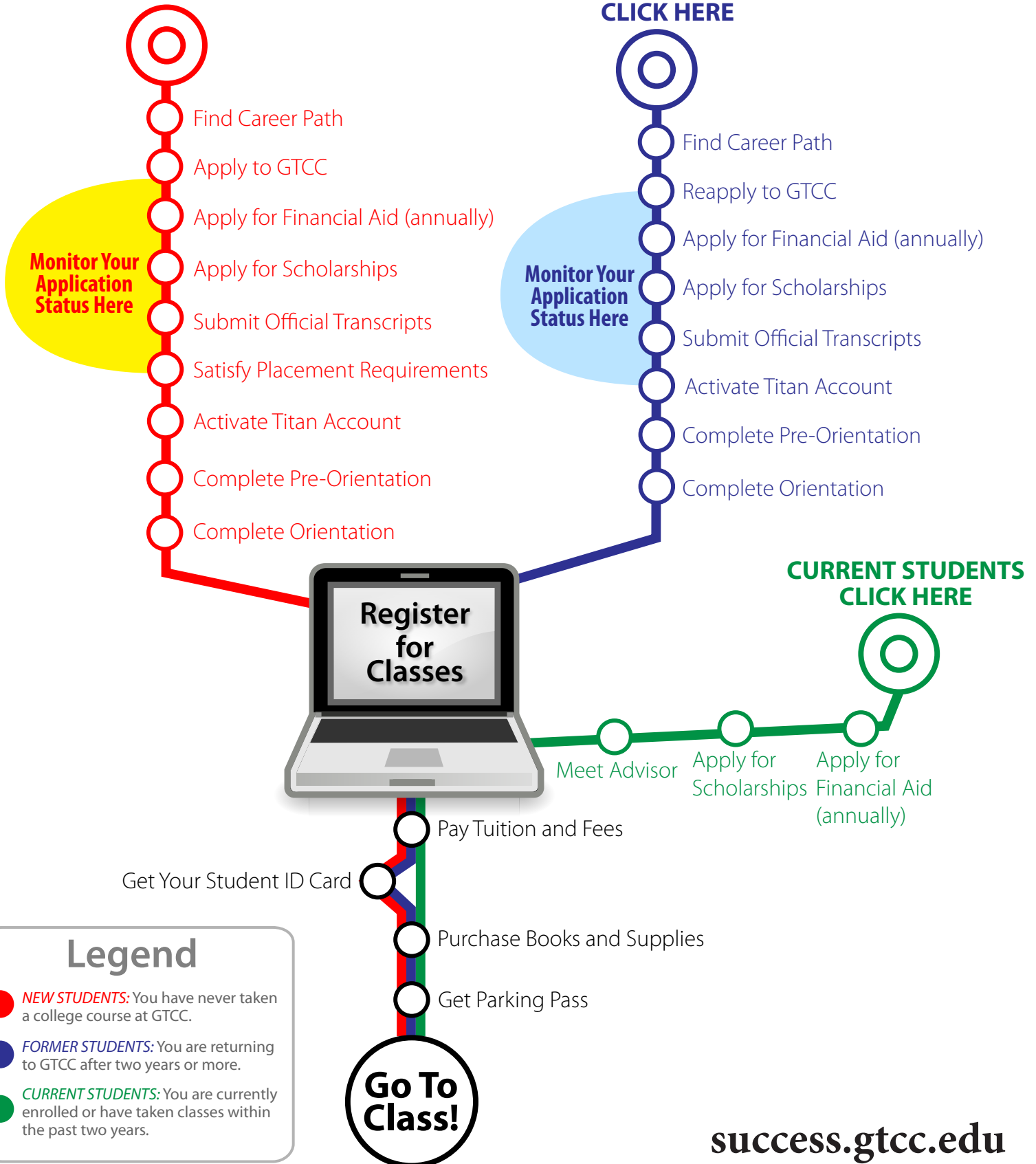
3505 E. Wendover Ave, Greensboro

W1 Adult Education Center
W2 Continuing Education Center
W3 Technical Education Center
W4 Greensboro Campus Center

GTCC's Path To Success

**NEW GTCC STUDENTS
CLICK HERE**

**FORMER GTCC STUDENTS
CLICK HERE**



steps to getting started

Step #1

Review the Getting Started resource at success.gtcc.edu

This brief online presentation will acquaint you with GTCC admission policies and procedures, financial aid, and orientation.

Step #2

Research your career path through College Foundation of North Carolina's career assessments and then learn about GTCC programs

You can access the CFNC career assessments and GTCC program search tool from the Path to Success at <http://success.gtcc.edu> by clicking on *Find Career Path*

Step #3

Apply for Admission

Admissions Office

Jamestown: Medlin Campus Center, Second Floor

(336) 334-4822 ext. 31125

<http://www.gtcc.edu/admissions>

Email: admissions@gtcc.edu

College Liaison for Concurrent Enrollment

Jamestown: Sears Applied Technology Center #335

(336) 334-4822 ext. 50562

<http://ccpi.gtcc.edu/>

General Admission

GTCC has an open-door admissions policy. The college is open to anyone 18 years old or older or high school graduates younger than 18. Individuals under 18 years of age who have not graduated from high school can attend GTCC as stipulated by the policies of the State Board of Community Colleges and the procedures specified by GTCC.

If you apply for an associate's degree, diploma, or certificate program, you must be a high school graduate or have earned the Adult High School diploma or the GED. If you do not meet this requirement, you can enroll in GTCC's GED or Adult High School program, for which there is no charge.

Upon submitting an application for admission, you may be interviewed and/or be asked to take a placement test depending on the program to which you apply and the courses in which you wish to enroll.

Qualified high school graduates will be admitted into a specific program if it is not a limited enrollment program of study. High school graduates applying to a limited enrollment program will be admitted, if qualified and if space is available, based upon admissions standards, which are available in Enrollment Services or online at <http://www.gtcc.edu/limitedenrollment>. Admission to the college does not guarantee acceptance to the program of your choice or guarantee continued enrollment in the college.

High School and Home School Students

If you are a junior or senior in high school or a home school student and meet the eligibility requirements you can enroll as a concurrent/dual enrolled student as part of the Career and College Promise Initiative.

High school students must meet with their high school counselor to determine eligibility.

- Have your high school counselor complete the Eligibility Verification Form.
- If eligible, complete the GTCC application for admission.
- Take the GTCC placement test, if necessary, to meet admission and/or course prerequisite requirements.
- Submit the Eligibility Verification Form, GTCC Application Form, assessment scores if available, and a current high school transcript to the College Liaison for Concurrent Enrollment Programs.

Home school students should meet with the College Liaison for Concurrent Enrollment to receive additional information and determine eligibility.

More information about the Career and College Promise Initiative is available at <http://ccpi.gtcc.edu/>

If you are 16 or 17 years old and have been suspended from a public or private secondary school for disciplinary reasons or you voluntarily want to enroll in Adult High School or GED classes, you must wait up to three months before you can be admitted to the college. More information on GTCC's Basic Skills Classes is available at <http://www.gtcc.edu/adultbasic-education>

Co-Admission

Guilford Technical Community College and North Carolina Agricultural & Technical State University.

Through a special admission process, students who wish to study Mechanical or Civil Engineering at GTCC and transfer to NC A&T to earn a bachelor's degree can be admitted to NC A&T as they pursue their freshman and sophomore years at GTCC.

International Students

International students are welcome to apply for admission. You must:

- Complete and submit the International Application packet (\$40 application fee)
- Return all required documents on or before the deadline as specified in the international application packet
- Send all applicable transcripts from secondary and post-secondary schools
- Present a minimum TOEFL (Test Of English as a Foreign Language) score of 500 (written test), 173 (computerized test), or a letter from a certified English language institute showing proficiency in English if your native language is not English
- Send health and medical records that show that you have up-to-date immunizations
- Submit evidence of adequate financial support to cover expenses for the first year of study. Financial aid is not available for international students.

When you have completed these steps and met admission approval, an I-20 eligibility document and a letter of acceptance will be issued.

If you are an international student who wants to transfer to GTCC, you must complete all of the steps listed above and receive a transfer clearance from the school or college you are currently authorized to attend.

Student housing is not available; you must make your own arrangements for housing. Contact the International Student office on the Jamestown campus for assistance.

Special Credit Students

Students not enrolled in a college transfer or career-technical degree, diploma, or certificate program who wish to take classes are classified as special credit students. To enroll as a special credit student, indicate Special Credit Student as your program of interest on the GTCC application. Special credit students are encouraged to complete Pre-Orientation and must provide documentation demonstrating course pre-requisites have been met. Financial aid is not available for special credit students.

Limited Enrollment Admissions

Some of our programs have enrollment limits and require special application procedures before a student may register. The submission of an application packet to these limited enrollment programs does not guarantee that the applicant has satisfied minimum admission criteria. Only completed applications meeting minimum admission criteria will be considered.

Limited enrollment programs include: Associate Degree Nursing, Cosmetology, Dental Assisting, Dental Hygiene, eDegree Programs, Emergency Medical Science, Licensed Practical Nurse, Medical Assisting, Pharmacy Technology, Physical Therapist Assistant, Radiography, Returning LPN, and Surgical Technology.

Applicants for limited enrollment programs must complete the admission application procedures and satisfy program criteria by the stated deadline before being considered for acceptance to the program. Information and admissions deadlines for limited enrollment programs can be found at <http://www.gtcc.edu/limitedenrollment>

Step #4

Apply for Financial Aid and Scholarships

Financial Aid Office

Jamestown: Medlin Campus Center, Second Floor

(336) 334-4822 ext. 31186

<http://www.gtcc.edu/financial-aid>

Email: finaid@gtcc.edu

The Financial Aid office at GTCC helps students apply for and receive all major types of Title IV federal and State of North Carolina financial aid, including grants, work study, loans, and scholarships. Additional information regarding specific types of financial aid is available on page 307 or at <http://www.gtcc.edu/financialaid>

The Financial Aid office provides materials, resources, and helpful staff to guide students through the application process.

General Eligibility Requirements

To be eligible for financial aid, you must:

- Be at least 16 years old
- Be a U.S. citizen or an eligible non-citizen
- Have earned a high school diploma, its equivalent, or a GED
- Be enrolled in an eligible program of study at GTCC (at least 16 credit hours)
- Be registered with the Selective Service if you are male and at least 18 years of age
- Not be in default on a Federal Student Loan or owe a refund on any Title IV grant at any educational institution

How to Apply

Complete the Free Application for Federal Student Aid (FAFSA) online at <http://www.fafsa.ed.gov/>. For help filling out the FAFSA, visit Enrollment Services on the second floor of the Medlin Campus Center on the Jamestown campus, room 125 of the Continuing Education Center on the Greensboro campus, or the Counseling Center at the High Point campus.

The FAFSA requires the GTCC school code: 004838

Because financial aid is determined each academic year, you must fill out a new FAFSA every year.

For scholarships available through GTCC, visit <http://www.gtcc.edu/scholarships>. The scholarship website lists the application deadline and includes a link to the GTCC scholarship application.

Conditions for Awards

The following three items are the key conditions reviewed when awarding financial aid:

1. The size of the Expected Family Contribution (EFC). The FAFSA information is used to calculate this number. This number is used to determine eligibility for most types of financial aid.
2. The budget of the student while in college
3. Availability of the types of aid

Application Verification

All schools and colleges must verify some of the data on FAFSA applications. Examples of verification materials required include tax transcript from the IRS for some FAFSA submitters, family's proof of untaxed agency income or benefits (Social Security, TANF, subsidized housing, etc.).

Financial Aid Disbursement

After the student is awarded financial aid, it is noted on their account and will be used directly to pay their tuition and fees. Students may use financial aid in the bookstore during specified days each semester. Any remaining aid will be disbursed to the student to be used for college expenses such as room and board, transportation, supplies, and personal items.

Step #5

Submit Official Transcripts

Enrollment Services

Medlin Campus Center, Second Floor
(336) 334-4822 ext. 50161

<http://www.gtcc.edu/records>

Email: admissions@gtcc.edu

How to Submit Transcripts

You must submit to GTCC an official high school or GED transcript, as well as transcripts from all colleges and universities you have attended. Send transcripts to:

Guilford Technical Community College
Records Department
P.O. Box 309
Jamestown, NC 27282

Recognized Institutions

GTCC recognizes state funded public schools and home schools registered with the state. If you attended a non-traditional private school, online high school, or correspondence school, GTCC will only accept your high school diploma if it is from a regionally accredited diploma granting high school. We accept high school diplomas from schools accredited by the Distance Education Training Council (DETC).

International Students

Students who graduated from international high schools will need to submit for copy an original diploma or original exit test scores.

Students will have one semester to show proof of high school graduation to remain in a degree, diploma or certificate program.

College Transcripts

If you have taken courses at another college or university, have all official transcripts sent to Enrollment Services. If you have a bachelor's degree, a high school transcript is not required unless you are applying for a limited enrollment program. Students must submit any outstanding official college transcripts within 30 days of the first day of class in fall and spring semesters, and within 15 days in the summer term. Failure to submit an official college transcript that validates pre-requisites will result in the student being administratively withdrawn from all classes that require proof of those prerequisites, which for financial aid and veterans benefits recipients, may result in a debt which must be repaid.

Step #6

Satisfy Placement Requirements

Assessment Center
(336) 334-4822 + extension
Jamestown: Medlin Campus Center #217, ext. 50262
High Point: H1 #133, ext. 55023
Greensboro: Continuing Education Center #132, ext. 53059
<http://www.gtcc.edu/enrollment-services/assessment.aspx>
Email: testingcenter@gtcc.edu

To be properly placed into classes, students must take placement tests in reading, writing, and mathematics. These tests assess students' academic readiness and will help them find classes that fit their present skill levels.

You may not be required to take the placement test if:

- You have transcribed coursework in reading, English, or math with a grade of C or higher from a regionally accredited college or university. GTCC must offer a similar course based on the common course catalog for credit to be awarded. Students should see an admissions advisor in Enrollment Services for assistance.
- You have previously taken a placement test and your scores are less than five years old. GTCC accepts the following tests for placement: COMPASS, ASSET, Accuplacer, NC DAP, PLAN, PSAT, ACT, and SAT. Students must have their scores officially reported by the testing agency or testing institution, depending on the test, to the GTCC Assessment Center. Additional score and placement information is available at <http://www.gtcc.edu/path-to-success/placement-requirements.aspx>
- You have achieved proficiency by completing college proficiency exams. For more information on proficiency exams, please see page 299 under Academic Information.

Take a Placement Test

If you have not previously completed college level course work in English or math or completed a placement test, you will need to visit a GTCC Assessment Center to complete placement tests prior to registering for classes. To take a placement test, you must bring with you a photo ID, a blue testing card from an Admissions advisor or Enrollment Services, and a workshop certificate if you are re-testing.

Prepare for Placement Tests

Study for placement tests and take them seriously. Your scores on placement tests impact how long it will take you to finish your program and earn your degree. A low score on a placement test can mean up to three extra semesters of college and limit

your course selection. Of the students who took the placement test, then studied and re-tested, 60% placed at least one level higher in reading and English, and 30% placed at least one level higher in math. You can re-test once in a 6-month period if you have not started a course sequence. Resources to help you study for the placement test are available at <http://www.gtcc.edu/enrollment-services/assessment.aspx>

Step #7

Activate Titan Account

Tutorial: <http://www.gtcc.edu/distance/titanliveid.html>
Activation Page: <https://myaccount.gtcc.edu/showLogin.cc>
(336) 334-4822 ext. 31216

Your Titan Account is the username that will enable you to access GTCC orientation information, email, and WebAdvisor. After your application is processed, it will take 2-3 days for your Titan Account to be created. You can check whether your Titan Account has been created on the Application Status website: <https://applicationstatus.gtcc.edu/>

Activate your Titan Account

After your Titan Account has been created, you must activate it to access GTCC online resources. To watch a tutorial about how to activate your account, go to <http://www.gtcc.edu/distance/titanliveid.html>. To navigate straight to the activation page, go to <https://myaccount.gtcc.edu/showLogin.cc>

Carefully read and follow the password requirements, and be sure to answer the security questions in case you need to reset your password in the future.

Step #8

Complete Pre-Orientation

Academic Advising Center
(336) 334-4822 + extension
Jamestown: Medlin Campus Center, Second Floor, ext. 50578
High Point: H1 #133, ext. 55023
Greensboro: Continuing Education Center #132, ext. 53059
Moodle: <http://online.gtcc.edu> (log-in required)
Email: orientation@gtcc.edu

New and former students must complete Pre-Orientation. Pre-Orientation is an online module accessed through Moodle, our learning management system. You must have activated your Titan Account to be able to sign into Moodle and access Pre-Orientation.

Pre-Orientation covers important campus information and policies including laws related to students, campus services, online and academic resources, civility, registrar procedures, developmental education, career exploration, and student life.

Pre-Orientation Exam

After you watch or read the Pre-Orientation presentation, you must complete the Pre-Orientation Exam and score a 90% or higher. After you pass the Pre-Orientation Exam with a 90% or above, you will receive a certificate of completion and can access the website where you will register for a New Student Orientation session.

Complete Pre-Orientation on Campus

If you do not have computer access or need assistance, you can complete Pre-Orientation on computers in any of our Academic Advising Centers.

Step #9 Complete Orientation

Academic Advising Center
(336) 334-4822 + extension
Jamestown: Medlin Campus Center, Second Floor, ext. 50578
High Point: H1 #133, ext. 55023
Greensboro: Continuing Education Center #132, ext. 53059
<http://www.gtcc.edu/path-to-success/complete-orientation.aspx>
<https://orientation.gtcc.edu> (log-in required)
Email: orientation@gtcc.edu, onlineorientation@gtcc.edu

New Student Orientation is designed to provide information that will help students succeed at GTCC. In orientation, you will learn about expectations of college students, attendance and registrar procedures, academic advising, and other relevant information such as transitioning from high school to college or transferring from GTCC to a university. You will develop an academic plan with an advisor and learn how to use GTCC's online systems. You will also have the option to take a tour of the campus.

Orientation Requirements

New Student Orientation is required for students who are:

- Attending college for the first time
- Attending GTCC for the first time, but have previous college experience
- Returning to GTCC after an absence of more than two years

New Student Orientation is not required for students who:

- Have completed a bachelor's degree or higher
- Are enrolled at GTCC as Special Credit students

Register for an Orientation Session

You must pass the Pre-Orientation Exam with a 90% or higher before you can register for New Student Orientation. After you successfully complete Pre-Orientation, log in to <https://orientation.gtcc.edu> with your Titan Account username and password and follow the prompts that appear. You will be able to choose an orientation session from a list of available dates.

Attend an Orientation Session

Plan to check in at your scheduled orientation session at least 15 minutes before the session begins. After you complete New Student Orientation, you will have the knowledge and skills necessary to register for classes during a registration period.

Online Orientation

Online New Student Orientation is available to students who:

- Have completed an associate's degree
- Are exempt from developmental reading and English course work (placed into or completed ENG-111)

Eligible students will see the option to register for Online New Student Orientation on the New Student Orientation registration site.

Step #10 Register for Classes

WebAdvisor: <http://www.gtcc.edu/webadvisor-login> (log-in required)

Registration for classes is available for currently enrolled, returning, and new students via WebAdvisor. To register via WebAdvisor, students must know their Titan Account username and password.

Please use the following checklist to review required steps prior to registration:

- New students and students who have not attended GTCC in two years must apply to the college (see step 3).
- Students must satisfy placement requirements for any course with a pre-requisite or co-requisite (see step 6). Pre-requisites and co-requisites can be found in this catalog at the end of individual course descriptions.
- New and former students must complete Pre-Orientation (see step 8) and Orientation (see step 9).
- Students should meet with an advisor to create a new academic plan or review an existing academic plan. Students attending orientation will create this plan in orientation.
- Register via WebAdvisor. If you encounter difficulties registering via WebAdvisor, assistance is available in the Advising Center or Open Computer Lab.

See the Academic Information section on page 295 for important registration information regarding adding, dropping, refund dates, withdrawal from school, waiting lists, attendance, and no-show drop policy.

Step #11

Pay Tuition and Fees

Cashiers Office

(336) 334-4822 + extension

Jamestown: Medlin Campus Center #270, ext. 50083

High Point: H1, ext. 55083

Greensboro: Continuing Education Center #136, ext. 53012

<http://www.gtcc.edu/cashiersoffice>

College Tuition and Fees

After you have registered, you must pay your tuition and fees and any other financial obligations. You are responsible for buying books and supplies for your courses.

The amount of tuition is determined by residency and by the number of credit hours. Some classes require an additional course fee, and there may be other fees as well. More information about tuition and fees can be found at <http://www.gtcc.edu/cashiersoffice>.

Payment Deadlines

Payment for all tuition and fees is due on or before the published deadlines. Deadlines can be found at <http://www.gtcc.edu/cashiersoffice>. Your account balance must be paid by the deadline or you may lose your classes and owe tuition charges. Sponsor authorizations must be received before posted student payment deadlines.

Payment Options

The College offers the following payment options:

Option #1:

Pay all tuition and fees by the payment deadline

Option #2:

Tuition Deferment Program

The Tuition Deferment program is designed to assist students who do not have or are awaiting financial aid eligibility and need help with paying their tuition and fee charges. When they sign up for the tuition deferment program, qualified students can pay 50% of their tuition and fees charges on or before the payment deadline and pay for the other 50% approximately one month after classes begin. If a student does not repay the deferment on the agreed-upon date, the total deferment plus late fines fees will become due and payable immediately. Failure to repay the deferment will result in the student being denied selected student services. For more information about tuition deferment, visit <http://www.gtcc.edu/tuition-deferment>.

Option #3:

Financial Aid/Scholarships

If financial aid is not available by the first day of the term or does not completely cover tuition and fees, select option 1 or 2 in the preceding text. If a balance remains on a student account past the due date, the account is subject to late fees and collection costs.

Option #4:

Sponsorships

Arrangements for payment by an agency or company must be pre-approved by the college. The student is responsible to ensure that a payment authorization is on file before posted student payment deadlines. If authorizations are not received and no payments are made, students' classes may be dropped for non-payment. Ultimately the student is responsible for payment of all unpaid charges, including late fees and third party service fees.

Option #5:

Tuition Payment Requirements for Veterans

Students who submit a Certificate of Eligibility from the VA to the school for Post 9/11 Chapter 33 will have their eligibility percentage of in-state tuition and fees paid to the school by the VA providing they have remaining entitlement. VA Vocational Rehabilitation Chapter 31, NC Children's Scholarship, and Tuition Assistance students with current approval documents on file will have their tuition cost paid for by the respective entity sponsoring the student. All other GI Bill® Chapters and Veterans Programs are responsible for paying their tuition on the school's payment due date.

Payment Types

All payments must be made in U.S. funds. Acceptable payment types include cash, check, money order, American Express, Discover, MasterCard, and Visa. To avoid long lines at the Cashiers Office, students can pay their account balance with a credit or debit card through WebAdvisor. If paying in person, you must present two forms of identification, including at least one unexpired photo ID. Students paying by credit card in person must present the actual credit card to the cashier. If paying by check, the account holder's name, address, and account number must be pre-printed on the check.

Student Financial Responsibility

By enrolling or having enrolled as a student at GTCC, students agree to be responsible for all charges on their student account and abide by the student account practices and policies. Students will be held accountable for understanding the practices and policies of college billing and collections. Detailed descriptions are provided on pages 298 of this catalog. They include:

- Billing and Collection Rights and Responsibilities
- Student Account Statements
- Past Due Accounts
- Collections
- Types of Fees
- Refunds

This information is also available on the GTCC website: <http://www.gtcc.edu/>

Step #12 Get Your Student ID Card

Student Life Office

(336) 334-4822 + extension

Jamestown: Medlin Campus Center #132, ext. 50517

High Point: H1, ext. 55066

Greensboro: Continuing Education Center 101, ext. 53070

<http://www.gtcc.edu/students/student-id>

All students are required to have a student ID card. Student IDs are created on the Jamestown, High Point, and Greensboro campuses. To obtain a new student ID, you must present two forms of state or federally issued identification, one of which must be a photo ID. The first student ID is free. If you need a replacement ID, you must first pay \$5 at the Cashiers Office and bring the receipt as proof of payment. Student IDs are made only during periods when GTCC is accepting tuition payments for the current or upcoming semester.

Step #13 Purchase Books and Supplies

GTCC Bookstore

(336) 334-4822 + extension

Jamestown: Medlin Campus Center, First Floor, ext. 50050

High Point: H1, ext. 55061

Greensboro Bookstore/Cashiers Office: Continuing Education Center, First Floor, ext. 53011

Aviation Center: AV1 #153, ext. 59021

<http://www.gtcc.edu/bookstore>

You can find your required textbooks online at <http://www.gtcc.edu/bookstore.aspx> or by visiting the GTCC bookstore on the campus where your program is based.

Step #14 Get Parking Pass

Campus Police

(336) 334-4822, ext. 52529

Jamestown: Medlin Campus Center #101

High Point: H1, Main Lobby

Greensboro: Continuing Education Center #148

Aviation Center: AV1 #119

<http://www.gtcc.edu/parkingpermit>

Students can obtain their parking pass from campus police offices on the Jamestown, High Point, and Greensboro campuses or from the Aviation Center main office. Students can also retrieve a parking pass from the Cashiers Office on the Jamestown campus. The cost of a parking pass is included in the campus access, parking, and security fee.

The GTCC parking deck on the Jamestown campus requires a paid access card and permit for entry. Payment can be made at the Jamestown Cashiers Office. For more information, visit <http://www.gtcc.edu/features/parking-deck.aspx>

Step #15 Go to Class!

<http://www.gtcc.edu/path-to-success/go-to-class>

Students are responsible for their attendance in classes for which they are enrolled. Non-attendance is not a basis for refund or non-payment of tuition.

degree requirements

Degree Requirements

GTCC offers a wide variety of planned educational programs, called “curriculum” programs, which range in length from one semester to two years. These programs lead to certificates, diplomas, or associate’s degrees, depending on the nature of the curriculum. Curriculum programs include Associate in Arts, Associate in Science, Associate in Fine Arts, Associate in Applied Science, Associate in General Education, diploma, and certificate programs. All curricula are subject to change.

College Transfer

Associate in Arts, Associate in Science, Associate in Fine Arts

GTCC offers college transfer through the Associate in Arts (AA), Associate in Science (AS) and Associate in Fine Arts (AFA) degree programs. The Associate in Arts (AA) degree is designed for students who want to pursue a four-year degree in one of the liberal arts disciplines or training at a professional school that requires a strong liberal arts background. The Associate in Science (AS) degree is designed for students who want to pursue a four-year degree in areas of study such as computer science, engineering, mathematics, the sciences or professional programs that require strong mathematics and science backgrounds. The Associate in Fine Arts (AFA) degree is designed for students who want to pursue a four-year degree in areas of study such as art, drama or music.

The Comprehensive Articulation Agreement (CAA) addresses the transfer of students between institutions in the North Carolina Community College System and the constituent institutions of the University of North Carolina. To be eligible for the transfer of credits under the CAA, the student must graduate from the community college with an Associate in Arts (AA) or Associate in Science (AS) degree or have completed the 44-hour general education core as defined below and have an overall Grade Point Average (GPA) of at least 2.0 on a 4.0 scale and a grade of “C” or better in all CAA courses. Because the AFA curriculum standard includes only 28 semester hour credits for general education, AFA students who transfer must meet the general education requirements of the receiving institution. Information about the Comprehensive Articulation Agreement can be located at <http://www.nccommunitycolleges.edu/Programs/transfer-information.htm>

The Independent Comprehensive Articulation Agreement (ICAA) between signatory institutions of the North Carolina Independent Colleges and Universities (NCICU) and the North Carolina Community College System (NCCCS) is intended to provide smooth transfer for community college students who wish to continue their education at an NCICU institution which has signed the agreement. Information about the Independent Comprehensive Articulation Agreement can be located at http://www.ncicu.org/fast_facts.htm

A diploma is available for the completion of the Associate in Arts (AA) or Associate in Science (AS) general education core. The core is the first level of completion that allows students to take advantage of the terms of the Comprehensive Articulation Agreement.

GENERAL EDUCATION COURSE REQUIREMENTS FOR ASSOCIATE IN ARTS (44 CREDITS)

CREDIT HOUR REQUIREMENTS*	COURSES FULFILLING REQUIREMENTS
6 credit hours of English Composition	ENG 111, 112, 114
12 credit hours of Humanities/Fine Arts**	ART 111, 114, 115; COM 110, 120, 231; DRA 111, 112, 126; ENG 131, 231, 232, 241, 242, 251, 252, 261, 262; FRE 111, 112, 211, 212; HUM 110, 115, 120, 121, 122, 130, 150, 160, 161, 211, 212; MUS 110, 112, 210; PHI 210, 215, 240; REL 110, 111, 112, 211, 212, 221; SPA 111, 112, 211, 212
12 credit hours of Social/Behavioral Science***	ANT 210, 220; ECO 251, 252; GEO 111, 112; HIS 111, 112, 121, 122, 131, 132; POL 120, 210, 220; PSY 150, 239, 241, 281; SOC 210, 213, 220, 225, 240
7-8 credit hours of Mathematics	CIS 110, 115; MAT 140/140A, 151/151A, 161/161A, 171/171A, 172/172A, 175/175A, 263, 271, 272, 273
8 credit hours of Natural Sciences	AST 111/111A, 151/151A, 152/152A; BIO 110, 111, 112, 140/140A; CHM 131/131A, 132, 151, 152; GEL 111, 230; PHY 110/110A, 151, 152, 251, 252

* Individual program may provide specific course requirements

** Four courses from at least three discipline areas are required. One course must be a literature course. Three credit hours in Speech/Communication may be substituted for three credit hours in Humanities/Fine Arts. Speech/Communication may not substitute for the literature requirement.

*** Four courses from at least three discipline areas are required. One course must be a history course.

College Transfer Elective Courses (20-21 credits)

These courses are generally major specific and are to be selected from courses identified by the North Carolina Community College System as general education or college transfer elective courses.

Total Credits Required for Associate in Arts Degree: 64-65

Students are responsible for contacting their intended transfer institution to ensure they select appropriate courses. The 65th credit of an associate's degree is not guaranteed to transfer.

GENERAL EDUCATION COURSE REQUIREMENTS FOR ASSOCIATE IN SCIENCE (44 CREDITS)

CREDIT HOUR REQUIREMENTS*	COURSES FULFILLING REQUIREMENTS
6 credit hours of English Composition	ENG 111, 112, 114
9 credit hours of Humanities/Fine Arts**	ART 111, 114, 115; COM 110, 120, 231; DRA 111, 112, 126; ENG 131, 231, 232, 241, 242, 251, 252, 261, 262; FRE 111, 112, 211, 212; HUM 110, 115, 120, 121, 122, 130, 150, 160, 161, 211, 212; MUS 110, 112, 210; PHI 210, 215, 240; REL 110, 111, 112, 211, 212, 221; SPA 111, 112, 211, 212
9 credit hours of Social/Behavioral Science***	ANT 210, 220; ECO 251, 252; GEO 111, 112; HIS 111, 112, 121, 122, 131, 132; POL 120, 210, 220; PSY 150, 239, 241, 281; SOC 210, 213, 220, 225, 240
20 credit hours of Natural Sciences/ Mathematics****	AST 111/111A, 151/151A, 152/152A; BIO 111, 112, 140/140A; CHM 131/131A, 132, 151, 152; CIS 110, 115; GEL 111, 230; MAT 151/151A, 171/171A, 172/172A, 175/175A, 263, 271, 272, 273; PHY 110/110A, 151, 152, 251, 252

* Individual program may provide specific course requirements

** Three courses from three discipline areas are required. One course must be a literature course. Three credit hours in Speech/Communication may be substituted for three credit hours in Humanities/Fine Arts. Speech/Communication may not substitute for the literature requirement.

*** Three courses from three discipline areas are required. One course must be a history course.

**** Eight credit hours minimum of Natural Sciences and six credit hours minimum from Mathematics are required. A minimum two-course sequence from the following courses is required: BIO 111/112, CHM 151/152, PHY 151/152, PHY 251/252. One course in mathematics at the precalculus algebra level or above is required; the other mathematics course(s) may be higher level mathematics or may be selected from among other quantitative subjects, such as computer science and statistics.

Natural Sciences/Mathematics Elective Courses (14 credits)

These courses are to be selected from courses identified by the North Carolina Community College System as Natural Sciences or Mathematics general education or college transfer elective courses.

College Transfer Elective Courses (6-7 credits)

These courses are to be selected from courses identified by the North Carolina Community College System as general education or college transfer elective courses.

Total Credits Required for Associate in Science Degree: 64-65

Students are responsible for contacting their intended transfer institution to ensure they select appropriate courses. The 65th credit of an associate's degree is not guaranteed to transfer.

GENERAL EDUCATION COURSE REQUIREMENTS FOR ASSOCIATE IN FINE ARTS (28 CREDITS)

CREDIT HOUR REQUIREMENTS*	COURSES FULFILLING REQUIREMENTS
6 credit hours of English Composition	ENG 111, 112, 114
6 credit hours of Humanities/Fine Arts**	ART 111, 114, 115; COM 110, 120, 231; DRA 111, 112, 126; ENG 131, 231, 232, 241, 242, 251, 252, 261, 262; FRE 111, 112, 211, 212; HUM 110, 115, 120, 121, 122, 130, 150, 160, 161, 211, 212; MUS 110, 112, 210; PHI 210, 215, 240; REL 110, 111, 112, 211, 212, 221; SPA 111, 112, 211, 212
9 credit hours of Social/Behavioral Science***	ECO 251, 252; HIS 111, 112, 121, 122, 131, 132; POL 120, 210, 220; PSY 150, 239, 241, 281; SOC 210, 213, 220, 225, 240
3 credit hours of Mathematics	MAT 140/140A, 151/151A, 161/161A, 171/171A, 172/172A, 175/175A, 263, 271, 272, 273
4 credit hours of Natural Science	AST 111/111A, 151/151A, 152/152A; BIO 110, 111, 112, 140/140A; CHM 131/131A, 132, 151, 152; GEL 111, 230; PHY 110/110A, 151, 152, 251, 252

* Individual program may provide specific course requirements

** Two courses from two discipline areas are required. One course must be a literature course. Three credit hours in Speech/Communication may be substituted for three credit hours in Humanities/Fine Arts. Speech/Communication may not substitute for the literature requirement.

*** Three courses from three discipline areas are required. One course must be a history course.

Other Required Courses (36-37 credits)

Major course requirements are determined on a program-by-program basis by articulation agreements developed under the Comprehensive Articulation Agreement, whenever possible and appropriate for transfer to the University of North Carolina constituent institutions.

Total Credits Required for Associate in Fine Arts Degree: 64-65

Students are responsible for contacting their intended transfer institution to ensure they select appropriate courses. The 65th credit of an associate's degree is not guaranteed to transfer.

Career-Technical (not intended for college transfer)

Associate in Applied Science, Associate in General Education, Diploma, Certificate

Associate in Applied Science

Associate in Applied Science (AAS) programs are designed to provide entry-level employment training. AAS programs range from 64 to 76 semester hour credits. A full-time student can typically complete one of these programs within two years. In addition to major course work, Associate in Applied Science degree programs require a minimum of 15 semester hour credits of general education. General education requirements include course work in communications, humanities/fine arts, social/behavioral sciences and natural sciences/mathematics. Certain courses in Associate in Applied Science degree programs may be accepted by a four-year college or university for transfer credit in an associated field.

GENERAL EDUCATION COURSE REQUIREMENTS FOR ASSOCIATE IN APPLIED SCIENCE (15 CREDITS)

CREDIT HOUR REQUIREMENTS*	COURSES FULFILLING REQUIREMENTS
6 credit hours of communications	COM 110, 120, 231; ENG 111, 112, 114
3 credit hours of Humanities/Fine Arts	ART 111, 114, 115; DRA 111, 112, 126; ENG 125, 131, 231, 232, 241, 242, 251, 252, 261, 262, 273; HUM 110, 115, 120, 121, 122, 130, 150, 160, 211 212; MUS 110, 111, 112, 121; PHI 210, 215, 240; REL 110, 111, 112, 211, 212, 221
3 credit hours of Social/Behavioral Science	ANT 210, 220; ECO 251, 252; GEO 111, 112; HIS 111, 112, 121, 122, 131, 132, 151, 227, 236; POL 120, 210, 220, 250; PSY 110, 118, 150, 281; SOC 210, 213, 220, 225
3-4 credit hours of Mathematics/Natural Science	AST 111/111A, 151/151A; BIO 110, 111, 140/140A, 163, 165; CHM 131/131A, 151; GEL 111, 230; MAT 110, 115, 120, 121, 140/140A, 151/151A, 161/161A, 171/171A, 175/175A; PHY 110/110A, 121, 131, 151

* Individual program may provide specific course requirements

Other Major Requirements for Associate in Applied Science Degree (49-61 credits)

These courses are determined by the specific program of study.

Total Credits Required for Associate in Applied Sciences Degree: 64-76

Associate in General Education

The Associate in General Education (AGE) program is designed for individuals wishing to broaden their education, with emphasis on personal interest, growth and development. The two-year AGE program provides students opportunities to study English, literature, fine arts, philosophy, social science, science and mathematics at the college level. All courses in the program are college-level courses. Many of the courses are equivalent to college transfer courses; however, the program is not principally designed for college transfer. Successful completion of 64-65 semester hour credits leads to an associate in general education degree.

GENERAL EDUCATION COURSE REQUIREMENTS FOR ASSOCIATE IN GENERAL EDUCATION (15 CREDITS)

CREDIT HOUR REQUIREMENTS*	COURSES FULFILLING REQUIREMENTS
6 credit hours of communications	COM 110, 120, 231; ENG 111, 112, 114
3 credit hours of Humanities/Fine Arts	ART 111, 114, 115; DRA 111, 112, 126; ENG 125, 131, 231, 232, 241, 242, 251, 252, 261, 262, 273; HUM 110, 115, 120, 121, 122, 130, 150, 160, 211 212; MUS 110, 111, 112, 121; PHI 210, 215, 240; REL 110, 111, 112, 211, 212, 221
3 credit hours of Social/Behavioral Science	ANT 210, 220; ECO 251, 252; GEO 111, 112; HIS 111, 112, 121, 122, 131, 132, 151, 227, 236; POL 120, 210, 220, 250; PSY 110, 118, 150, 281, SOC 210, 213, 220, 225
3-4 credit hours of Mathematics/Natural Science	AST 111/111A, 151/151A; BIO 110, 111, 140/140A, 163, 165; CHM 131/131A, 151; GEL 111, 230; MAT 110, 115, 120, 121, 140/140A, 151/151A, 161/161A, 171/171A, 175/175A; PHY 110/110A, 121, 131, 151

* Individual program may provide specific course requirements

Other Required Credits (49-50 credits)

Other major credits include additional general education and professional courses. A maximum of seven credits in health, physical education, college orientation, and/or study skills may be included.

Total Credits Required for Associate in General Education Degree: 64-65

Diploma

Diploma programs are designed to provide training for entry-level employment. Diploma programs range from 36 to 48 semester hour credits and can usually be completed by a full-time student within two semesters and one summer session. Associate degree level courses within a diploma program may also be applied toward an Associate in Applied Science degree.

Certificate

Certificate programs are designed to provide training for entry-level employment. Certificate programs range from 12 to 18 semester hour credits and can usually be completed within one semester by a full-time student. Associate degree level courses within a certificate program may also be applied toward a diploma or an Associate in Applied Science degree.

General Education Philosophy and Outcomes

The following core academic competencies are considered essential for student success and are covered in the GTCC curriculum for all degrees. The broad purpose of a learning-centered two-year technical and community college in the culturally diverse world of the 21st century should be to prepare graduates for productive employment, university transfer, and lifelong learning through the attainment of the following skills, knowledge, and values:

Oral and Written Communication

- Demonstrate effective oral presentation and interpersonal communication skills.
- Employ active reading skills to analyze texts.
- Conduct appropriate print, electronic, and field research to achieve a particular purpose.
- Create logical written documents with appropriateness to intended audience, purpose, needed evidence/support materials, and organization in required formats.
- Use intellectual property ethically with attention to source citation.

Information Literacy

- Identify sources required to support a position.
- Access relevant materials/sources efficiently.
- Evaluate sources critically.

Humanities and Fine Arts

- Interpret logically content orally and/or in writing using multiple perspectives.
- Demonstrate effective communication skills in a variety of settings and formats.
- Analyze cultural similarities and differences.

Behavioral and Social Sciences

- Evaluate information from multiple sources.
- Integrate knowledge from diverse disciplines, to draw generalizations and evidence-based conclusions.
- Apply critical reasoning skills to real world experience/applications both independently and collaboratively.
- Demonstrate an understanding of global diversity.

Students pursuing the Associate in Arts, Associate in Science, or Associate in Fine Arts degree will achieve the following competencies in both Natural Sciences and Mathematics. Students pursuing the Associate in Applied Science or Associate in General Education degree will achieve the following competencies in Natural Sciences and/or Mathematics.

Natural Sciences

- Apply relevant critical thinking in articulating and solving problems.
- Communicate scientific information effectively to the appropriate audience.
- Explore new ideas and distinguish among ideas based on empirical support.
- Apply scientific approach of investigation individually and collaboratively to solve problems and scrutinize new ideas.
- Critically examine the impact of scientific and technical knowledge on human society and the environment.

Mathematics

- Demonstrate mathematical computation skills.
- Apply mathematics to solve applications and interpret results.
- Communicate problem solving processes and conclusions effectively using appropriate mathematical terminology.

curriculum programs of study

The wide variety of curriculum credit programs at GTCC are designed to meet the educational needs of individual citizens, businesses and industries in Guilford County. When you successfully complete a program of study, you can earn an associate degree, a diploma or a certificate, depending on the program.

GTCC operates from three campuses and three specialized centers:

- Jamestown Campus (Main Campus)
601 High Point Road
- High Point Campus
901 South Main Street
- Greensboro Campus
3505 East Wendover Avenue
- T. H. Davis Aviation Center
260 North Regional Road
Piedmont Triad International Airport
Greensboro, NC
- Aviation Center II
819 Radar Road
Piedmont Triad International Airport
Greensboro, NC
- Small Business Center - Greensboro
1451 S. Elm Eugene Street,
Suite 120, Greensboro, NC
- Small Business Center - High Point
1634 North Main Street
High Point Chamber of Commerce
High Point, NC

Mailing Address for all campuses and centers:

PO Box 309
Jamestown, NC 27282

College Transfer Programs A-Z

pages 20-26

Technical Programs A-Z

pages 27 - 146

Career & College Promise

pages 147 - 160

Associate in Arts

A 10 10 0

College Transfer - General Studies

Contact: (336) 334-4822, ext. 50578

The Associate in Arts (AA) degree is designed for students who want to pursue a four-year degree in one of the liberal arts disciplines or training at a professional school that requires a strong liberal arts background. Upon transfer, students who earn the Associate in Arts degree generally major in fields such as anthropology, business, communication, economics, English, foreign language, geography, history, humanities, music, philosophy, political science, psychology, religion, and sociology.

Upon successful completion of this degree, graduates will be able to:

- Apply strategies to acquire new information (concepts and perspectives) in a variety of academic disciplines
- Analyze academic, workplace, and societal issues presented in a variety of academic disciplines using discipline-specific concepts and underlying perspectives
- Use critical thinking (reason and creativity in problem-solving and decision-making) in a variety of academic disciplines
- Demonstrate use of technology appropriate to a variety of academic disciplines

Fall Semester I			Credits
ENG	111	Expository Writing	3
—	—	Humanities/Fine Arts Requirement ¹	3
—	—	Social/Behavioral Science Requirement ²	3
—	—	Natural Science Requirement ⁴	4
—	—	Mathematics Requirement ⁵	3-4
Total			16-17

Spring Semester I			Credits
ENG	112	Argument-Based Research	3
—	—	Humanities/Fine Arts Requirement ¹	3
—	—	History Requirement ³	3
—	—	Natural Science Requirement ⁴	4
—	—	Mathematics Requirement ⁶	4
Total			17

Fall Semester II			Credits
—	—	Literature Requirement ⁷	3
—	—	Humanities/Fine Arts Requirement ¹	3
—	—	Social/Behavioral Science Requirement ²	3
—	—	Social/Behavioral Science Requirement ²	3
—	—	College Transfer Elective ⁸	3-4
Total			15-16

Apply for general education core diploma ^ ^

Minimum 44 credits

Spring Semester II

—	—	College Transfer Elective ⁸	3-4
—	—	College Transfer Elective ⁸	3-4
—	—	College Transfer Elective ⁸	3-4
—	—	College Transfer Elective ⁸	3-4
—	—	College Transfer Elective ⁸	3-4
Total			15-20

Total credit hours required for degree: 64-65

The 65th credit of an associate's degree is not guaranteed to transfer.

¹Humanities/Fine Arts Requirement:

ART 114	PHI 215
ART 115	PHI 240
COM 231*	REL 110
DRA 111	REL 211
FRE 111 ^	REL 212
HUM 115	SPA 111 ^
MUS 110	

* COM 231 is required

^ Higher level course may be substituted based on pre-requisites

Three Humanities/Fine Arts courses from at least two discipline areas are required.

²Social/Behavioral Science Requirement:

ECO 251	PSY 150
ECO 252	SOC 210
POL 120	

** HIS courses also fulfill Social/Behavioral Science requirements

Four Social/Behavioral Science courses from at least three discipline areas are required. One course must be a history course.

³History Requirement**:

HIS 111	HIS 121
HIS 112	HIS 122

** HIS courses also fulfill Social/Behavioral Science requirements

⁴Natural Science Requirement:

AST 151/151A	GEL 111
BIO 110	PHY 110/110A
CHM 131/131A	

⁵Mathematics Requirements, Fall Semester I:

MAT 140***

MAT 161/161A***

MAT 171/171A***

*** Higher level MAT course may be substituted based on pre-requisites, excluding MAT 223

⁶Mathematics Requirements, Spring Semester I:

MAT 151/151A***

MAT 172/172A***

*** Higher level MAT course may be substituted based on pre-requisites, excluding MAT 223

⁷Literature Requirements:

ENG 231 ENG 251

ENG 232 ENG 252

ENG 241 ENG 261

ENG 242 ENG 262

⁸College Transfer Electives**:**

ACA 122; ACC 120, 121; ANT 210, 220; ART 111, 121, 122, 131, 132, 240; AST 111/111A, 152/152A, 251; BIO 140/140A, 163, 165, 166, 250, 265, 275, 280; BUS 110, 115, 137; CHM 132, 151, 152, 251, 252; CIS 110, 115; CJC 111, 121, 141; COM 110, 111, 120, 130, 140, 150; CSC 134, 139, 151, 239; DRA 112, 120, 126, 130, 131, 132, 140, 142, 143, 145, 170, 171, 240, 270, 271; EDU 144, 145, 146, 216; ENG 114, 131, 125, 126, 273; FRE 112, 211, 212; GEL 230; GEO 111, 112; HEA 110, 120; HIS 131, 132, 151, 227, 236; HUM 110, 120, 121, 122, 130, 150, 160, 161, 211, 212; MAT 140A, 175/175A, 263, 271, 272, 273, 285; MUS 112, 210; PED 110, 111, 112, 113, 114, 117, 118, 119, 120, 121, 122, 123, 128, 129, 139, 140, 143, 144, 145, 146, 152, 153, 154, 155, 216, 240; PHI 210; PHY 151, 152, 251, 252; POL 210, 220, 250; PSY 239, 241, 281; REL 111, 221; SOC 213, 220, 225, 240; SPA 112, 211, 212

**** Requirements not used to meet core requirements may be used as electives

^^ Students who have completed the 44-credit general education core of the Associate in Arts degree should apply for the general education core diploma. Completion of the general education core is the first level of completion that allows students to take advantage of the terms of the Comprehensive Articulation Agreement.

Students are responsible for contacting their intended transfer institution to ensure they select appropriate courses.

Associate in Fine Arts

A 10 20 0

College Transfer - Drama Concentration

Contact: (336) 334-4822, ext. 50299

The Associate in Fine Arts (AFA) degree is designed for students who want to pursue a four-year degree in areas of study such as art, drama or music. Because the AFA curriculum standard includes only 28 semester hour credits for general education, AFA students who transfer must meet the general education requirements of the receiving institution.

The Associate in Fine Arts (AFA) degree with a concentration in Drama is designed for students who want to pursue a four-year degree in drama. Students may emphasize either acting or technical theatre within this degree program. Graduates will be eligible for admission with junior class standing at most public and private four-year institutions which offer the BFA or BA degrees in drama or theater arts. Graduates will also be eligible for employment in entry level positions in theater and related fields. An interview with the program coordinator is required for admission to the program. All students are required to participate in the college theatre company.

Upon successful completion of this degree, graduates will be able to:

- Apply strategies to acquire new information (concepts and perspectives) in a variety of academic disciplines
- Analyze academic, workplace, and societal issues presented in a variety of academic disciplines using discipline-specific concepts and underlying perspectives
- Use critical thinking (reason and creativity in problem-solving and decision-making) in a variety of academic disciplines
- Demonstrate use of technology appropriate to a variety of academic disciplines

English Composition			Credits
ENG	111	Expository Writing	3
ENG	112	Argument-Based Research	3
Total			6

Humanities/Fine Arts

—	—	Humanities/Fine Arts Requirement ¹	3
—	—	Literature Requirement ²	3
Total			6

Social/Behavioral Sciences

PSY	150	General Psychology	3
SOC	210	Introduction to Sociology	3
—	—	History Requirement ³	3
Total			9

Mathematics

—	—	Mathematics Requirement ⁴	3-4
Total			3-4

Natural Science

—	—	Natural Science Requirement ⁵	4
Total			4

Other Required Courses

DRA	120	Voice for Performance	3
DRA	130	Acting I	3
DRA	131	Acting II	3
DRA	140	Stage Craft I	3
DRA	145	Stage Make Up	2
DRA	170	Play Production I	3
Total			17

Drama Electives I

—	—	Drama Elective ⁶	3
—	—	Drama Elective ⁶	3
Total			6

College Transfer Electives

—	—	College Transfer Elective ⁷	3
—	—	College Transfer Elective ⁷	3
—	—	College Transfer Elective ⁷	3
—	—	College Transfer Elective ⁷	3
Total			12

Total credit hours required for degree: 64-65

The 65th credit of an associate's degree is not guaranteed to transfer.

¹Humanities/Fine Arts Requirements:

ART 111	HUM 160
ART 114	HUM 161
ART 115	HUM 211
COM 110	HUM 212
COM 120	MUS 110
COM 231	MUS 112
DRA 111	MUS 210
DRA 112	PHI 210
DRA 126	PHI 215
FRE 111	PHI 240
FRE 112	REL 110
FRE 211	REL 111
FRE 212	REL 112
HUM 110	REL 211
HUM 115	REL 212
HUM 120	REL 221
HUM 121	SPA 111
HUM 122	SPA 112
HUM 130	SPA 211
HUM 150	SPA 212

²Literature Requirements:

ENG 231	ENG 251
ENG 232	ENG 252
ENG 241	ENG 261
ENG 242	ENG 262

³History Requirements:

HIS 111	HIS 122
HIS 112	HIS 131
HIS 121	HIS 132

⁴Mathematics Requirements:

MAT 140
MAT 161/161A

⁵Natural Science Requirements:

AST 111/111A	CHM 151
AST 151/151A	CHM 152
AST 152/152A	GEL 111
BIO 110	GEL 230
BIO 111	PHY 110/110A
BIO 112	PHY 151
BIO 140/140A	PHY 152
CHM 131/131A	PHY 251
CHM 132	PHY 252

⁶Drama Electives I:

DRA 112
DRA142
DRA 240

⁷College Transfer Electives**:**

ACA 122; **ACC** 120, 121; **ANT** 210, 220; **ART** 111, 121, 122, 131, 132, 240; **AST** 111/111A, 152/152A, 251; **BIO** 140/140A, 163, 165, 166, 250, 265, 275, 280; **BUS** 110, 115, 137; **CHM** 132, 151, 152, 251, 252; **CIS** 110, 115; **CJC** 111, 121, 141; **COM** 110, 111, 120, 130, 140, 150; **CSC** 134, 139, 151, 239; **DRA** 120, 130, 131, 132, 140, 143, 145, 170, 171, 270, 271; **EDU** 144, 145, 146, 216; **ENG** 114, 131, 125, 126, 273; **FRE** 112, 211, 212; **GEL** 230; **GEO** 111, 112; **HEA** 110, 120; **HIS** 131, 132, 151, 227, 236; **HUM** 110, 120, 121, 122, 130, 150, 160, 161, 211, 212; **MAT** 140A, 175/175A, 263, 271, 272, 273, 285; **MUS** 112, 210; **PED** 110, 111, 112, 113, 114, 117, 118, 119, 120, 121, 122, 123, 128, 129, 139, 140, 143, 144, 145, 146, 152, 153, 154, 155, 216, 240; **PHI** 210; **PHY** 151, 152, 251, 252; **POL** 210, 220, 250; **PSY** 239, 241, 281; **REL** 111, 221; **SOC** 213, 220, 225, 240; **SPA** 112, 211, 212

**** Requirements not used to meet core requirements may be used as electives

Students are responsible for contacting their intended transfer institution to ensure they select appropriate courses.

Associate in Science

A 10 40 0

College Transfer - General Studies

Contact: (336) 334-4822, ext. 50578

The Associate in Science (AS) degree is designed for students who want to pursue a four-year degree in areas of study or professional programs that require strong mathematics and science backgrounds. Upon transfer, students who earn the Associate in Science degree generally major in fields such as biology, chemistry, engineering, mathematics, and physics.

Upon successful completion of this degree, graduates will be able to:

- Apply strategies to acquire new information (concepts and perspectives) in a variety of academic disciplines
- Analyze academic, workplace, and societal issues presented in a variety of academic disciplines using discipline-specific concepts and underlying perspectives
- Use critical thinking (reason and creativity in problem-solving and decision-making) in a variety of academic disciplines
- Demonstrate use of technology appropriate to a variety of academic disciplines

Fall Semester I			Credits
ENG	111	Expository Writing	3
—	—	Humanities/Fine Arts Requirement ¹	3
—	—	Social/Behavioral Science Requirement ²	3
—	—	Natural Science Requirement ⁴	4
—	—	Mathematics Requirement ⁵	4
Total			17

Spring Semester I			Credits
ENG	112	Argument-Based Research	3
—	—	Humanities/Fine Arts Requirement ¹	3
—	—	History Requirement ³	3
—	—	Natural Science Requirement ⁶	4
—	—	Mathematics Requirement ⁷	4
Total			17

Fall Semester II			Credits
—	—	Literature Requirement ⁸	3
—	—	Social/Behavioral Science Requirement ²	3
—	—	Math/Natural Science Elective ⁹	4
—	—	Math/Natural Science Elective ⁹	4
Total			14

Apply for general education core diploma ^ ^ Minimum 44 credits

Spring Semester II

—	—	Math/Natural Science Elective ⁹	4
—	—	Math/Natural Science Elective ⁹	3-4
—	—	Math/Natural Science Elective ⁹	3-4
—	—	College Transfer Elective ¹⁰	3-4
—	—	College Transfer Elective ¹⁰	3-4
Total			16-20

Total credit hours required for degree: 64-65

The 65th credit of an associate's degree is not guaranteed to transfer.

¹Humanities/Fine Arts Requirements:

ART 114	PHI 215
ART 115	PHI 240
COM 231*	REL 110
DRA 111	REL 211
FRE 111 ^	REL 212
HUM 115	SPA 111 ^
MUS 110	

* COM 231 is required

^ Higher level course may be substituted based on pre-requisites

Two Humanities/Fine Arts courses from two discipline areas are required.

²Social/Behavioral Science Requirements:

ECO 251	PSY 150
ECO 252	SOC 210
POL 120	

Two Social/Behavioral Science courses from two discipline areas are required.

³History Requirements:

HIS 111	HIS 121
HIS 112	HIS 122

⁴Natural Science Requirements, Fall Semester I:

BIO 111	PHY 151
CHM 151	PHY 251

⁵Mathematics Requirements, Fall Semester I:

MAT 171/171A**

** Higher level MAT course may be substituted based on pre-requisites, excluding MAT 223

⁶Natural Science Requirements, Spring Semester I***

BIO 112	PHY 152
CHM 152	PHY 252

*** Must be second course in sequence chosen first semester

⁷Mathematics Requirements, Spring Semester I:

MAT 151/151A **

MAT 172/172A **

*** Higher level MAT course may be substituted based on pre-requisites, excluding MAT 223*

⁸Literature Requirements:

ENG 231 ENG 251

ENG 232 ENG 252

ENG 241 ENG 261

ENG 242 ENG 262

⁹Math/Natural Science Electives****

AST 111/111A GEL 111

AST 151/151A GEL 230

AST 152/152A MAT 175/175A

BIO 110 MAT 263

BIO 111 MAT 271

BIO 112 MAT 272

BIO 140/140A MAT 273

CHM 131/131A PHY 110/110A

CHM 132 PHY 151

CHM 151 PHY 152

CHM 152 PHY 251

CIS 110 PHY 252

CIS 115

***** Requirements not used to meet core requirements may be used as electives*

¹⁰College Transfer Electives**:**

ACA 122; ACC 120, 121; ANT 210, 220; ART 111, 121, 122, 131, 132, 240; AST 111/111A, 152/152A, 251; BIO 163, 165, 166, 250, 265, 275, 280; BUS 110, 115, 137; CHM 251, 252; CJC 111, 121, 141; COM 110, 111, 120, 130, 140, 150; CSC 134, 139, 151, 239; DRA 112, 120, 126, 130, 131, 132, 140, 142, 143, 145, 170, 171, 240, 270, 271; ENG 114, 131, 125, 126, 273; FRE 112, 211, 212; GEO 111, 112; HEA 110, 120; HIS 131, 132, 151, 227, 236; HUM 110, 120, 121, 122, 130, 150, 160, 211, 212; MAT 285; MUS 112, 210; PED 110, 111, 112, 113, 114, 117, 118, 119, 120, 121, 122, 123, 128, 129, 139, 140, 143, 144, 145, 146, 152, 153, 154, 155, 216, 240; PHI 210; POL 210, 220, 250; PSY 239, 241, 281; REL 111, 221; SOC 213, 220, 225, 240; SPA 112, 211, 212

***** Requirements not used to meet core requirements may be used as electives*

^^ Students who have completed the 44-credit general education core of the Associate in Science degree should apply for the general education core diploma. Completion of the general education core is the first level of completion that allows students to take advantage of the terms of the Comprehensive Articulation Agreement.

Students are responsible for contacting their intended transfer institution to ensure they select appropriate courses.

Associate in Science (Engineering)

A 10 40 0

NC A&T State University Transfer Program

Contact: (336) 334-4822, ext. 50125

The curriculum is recommended for students interested in studying Mechanical or Civil Engineering at GTCC, earning an Associate of Science degree and transferring to North Carolina A&T State University to attain a bachelor's degree. Successful students transferring from GTCC to North Carolina A&T will be given full credit for the courses listed below upon acceptance to the university and have junior standing.

Upon successful completion of this degree, graduates will be able to:

- Apply strategies to acquire new information (concepts and perspectives) in a variety of academic disciplines
- Analyze academic, workplace, and societal issues presented in a variety of academic disciplines using discipline-specific concepts and underlying perspectives
- Use critical thinking (reason and creativity in problem-solving and decision-making) in a variety of academic disciplines
- Demonstrate use of technology appropriate to a variety of academic disciplines

Fall Semester I			Credits
ENG	111	Expository Writing	3
CHM	151	General Chemistry I	4
MAT	271	Calculus I	4
DFT	170	Engineering Graphics	3
EGR	150	Introduction to Engineering	2
Total			16

Spring Semester I			Credits
ENG	112	Argument-Based Research	3
ECO	251	Principles of Microeconomics	3
MAT	272	Calculus II	4
PHY	251	General Physics I	4
—	—	Literature Requirement ¹	3
Total			17

Fall Semester II			Credits
MAT	273	Calculus III	4
PHY	252	General Physics II	4
EGR	220	Engineering Statics	3
—	—	Social/Behavioral Science Requirement ²	3
—	—	Humanities/Fine Arts Requirement ³	3
Total			17

Apply for Associate in Science Diploma

Minimum 44 credits

Spring Semester II

MAT	285	Differential Equations	3
EGR	225	Engineering Dynamics	3
EGR	230	Engineering Materials	3
—	—	History Requirement ⁴	3
—	—	Humanities/Fine Arts Requirement ³	3
Total			15

Total credit hours required for degree: 65

¹Literature Requirement:

ENG 231	ENG 252
ENG 232	ENG 261
ENG 241	ENG 262
ENG 242	
ENG 251	

²Social/Behavioral Science Requirement:

ECO 252	PSY 150
POL 120	SOC 210

³Humanities/Fine Arts Requirement:

ART 114	PHI 215
ART 115	PHI 240
COM 231*	REL 110
DRA 111	REL 211
FRE 111^	REL 212
HUM 115	SPA 111^
MUS 110	

* COM 231 is required

^ Higher level course may be substituted based on pre-requisites

⁴History Requirement:

HIS 111	HIS 121
HIS 112	HIS 122

Technical Programs

PROGRAMS	CONTACT #	Degree	Diploma	Certificate	Limited Enrollment	Page
Accounting	(336) 334-4822 X50085	*	*	*		30
Advertising and Graphic Design	(336) 334-4822 X50451	*		*		32
Air Conditioning, Heating, and Refrigeration Tech.	(336) 334-4822 X53076	*		*		34
Architectural Technology	(336) 334-4822 X53076	*		*		36
Associate in General Education ¹	(336)-334-4822 X 50495	*				38
Automotive Systems Technology	(336) 334-4822 X50184	*		*	*	39
Aviation Electronics (Avionics) Technology	(336) 334-4822 X59014	*			*	42
Aviation Management and Career Pilot Technology	(336) 334-4822 X59010	*		*		43
Aviation Systems Technology	(336) 334-4822 X59014	*		*		46
Basic Law Enforcement Training	(336) 334-4822 X50058			*	*	49
Biotechnology	(336) 334-4822 X50357	*				50
Business Administration ¹	(336) 334-4822 X50085	*				51
Business Administration--Human Resources Concentration ¹	(336) 334-4822 X50085	*		*		52
Carpentry	(336) 334-4822 X53086		*			53
Civil Engineering Technology	(336) 334-4822 X50304	*				54
Collision Repair & Refinishing	(336) 334-4822 X50061	*	*	*		55
Computer Information Technology ¹	(336) 334-4822 X50325	*		*		57
Computer Integrated Machining	(336) 334-4822 X53088	*	*	*		59
Computer Programming ¹	(336) 334-4822 X50325	*		*		62
Computer Technology Integration	(336) 334-4822 X50325	*		*		66
Construction Management Technology	(336) 334-4822 X53086	*	*			68
Cosmetology	(336) 334-4822 X50055	*	*	*	*	70
Criminal Justice Technology ¹	(336) 334-4822 X50261	*		*		72
Culinary Arts	(336) 334-4822 X50468	*	*	*		76
Cyber Crime Technology	(336) 334-4822 X50325	*				78
Dental Assisting	(336) 334-4822 X50501		*		*	79
Dental Hygiene	(336) 334-4822 X50347	*			*	80
Early Childhood Education	(336) 334-4822 X50495	*	*	*		81
Electrical Systems Technology	(336) 334-4822 X53105	*		*		84
Electronics Engineering Technology	(336) 334-4822 X53055	*	*			86
Emergency Medical Science	(336) 334-4822 X50530	*			*	89
Emergency Management	(336) 334-4822 X50530	*		*		91
Entertainment Technologies	(336) 334-4822 X55051	*				93
Fire Protection Technology	(336) 334-4822 X50530	*		*		98
General Occupational Technology	(336) 334-4822 X50495	*				99
Geomatics Technology	(336) 334-4822 X53034	*		*		100
Global Logistics Technology	(336) 334-4822 X50085	*		*		102
Healthcare Management Technology ¹	(336) 334-4822 X50200	*				104
Heavy Equipment and Transport Technology	(336) 334-4822 X57004		*	*		105
Hospitality Management	(336) 334-4822 X50468	*				106
Human Services Technology	(336) 334-4822 X55053	*		*		107
Industrial Systems Technology	(336) 334-4822 X53105	*				112
Information Systems Security	(336) 334-4822 X50325	*				113
Manufacturing Technology	(336) 334-4822 X53088	*	*			114

Mechanical Engineering Technology	(336) 334-4822 X53034	*				116
Mechatronics Engineering Technology	(336) 334-4822 X53105	*				117
Medical Assisting	(336) 334-4822 X50073	*			*	118
Medical Office Administration ¹	(336) 334-4822 X50200	*		*		119
Networking Technology	(336) 334-4822 X50325	*		*		121
Associate Degree Nursing	(336) 334-4822 X50426	*			*	123
Office Administration ¹ (online only)	(336) 334-4822 X50200	*		*		126
Paralegal Technology	(336) 334-4822 X53082	*				128
Pharmacy Technology	(336) 454-1126 X55079	*	*		*	129
Physical Therapist Assistant	(336) 334-4822 X50280	*			*	131
Radiography	(336) 832-7487	*			*	132
Simulation and Game Development	(336) 334-4822 X50325	*				133
Surgical Technology	(336) 334-4822 X50340	*	*		*	134
Telecommunications and Networking Tech	(336) 334-4822 X53055	*	*			136
Turfgrass Management Technology	(336) 334-4822 X53076	*	*	*		138
Web Technologies	(336) 334-4822 X50325	*		*		142
Welding Technology	(336) 334-4822 X50411		*	*		144

¹This degree can be completed in a traditional or completely online format. Students must successfully complete ACA 112, Intro to Distance Learning, as an entrance requirement for the completely online option. For more information about eDegree programs, please visit the eDegree website. <http://www.gtcc.edu/edegrees>

Accounting

A 25 10 0

Associate in Applied Science

Contact: (336) 334-4822, ext. 50085

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

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

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

Program Outcomes:

Upon successful completion of the Accounting Program, the graduate should be able to:

- Record financial transactions of a company properly.
- Prepare financial statements that fairly present the financial position of a company.
- Prepare supporting schedule to those financial statements accurately.
- Prepare basic and small business tax returns calculations accurately.
- Apply time value of money concepts to financial transactions accurately.
- Use electronic spreadsheets effectively as it applies to the business environment.
- Use accounting software effectively for practical applications in a business environment.
- Analyze financial information of a company to make business decisions.

Fall Semester I			Credits
ACA	111	College Student Success	1
ACC	120	Principles of Financial Accounting	4
BUS	125	Personal Finance	3
ECO	251	Principles of Microeconomics	3
ENG	111	Expository Writing	3
—	—	Math Elective ²	3
Total			17

Spring Semester I

ACC	121	Principles of Managerial Accounting	4
ACC	149	Intro to Accounting Spreadsheets	2
BUS	115	Business Law	3
CIS	110	Introduction to Computers	3
ECO	252	Principles of Macroeconomics	3
Total			15

Summer Semester I

ACC	140	Payroll Accounting	2
ACC	150	Accounting Software Apps	2
ACC	151	Accounting Spreadsheet Apps	2
—	—	Accounting Technical Elective ¹	3
Total			9

Fall Semester II

ACC	129	Individual Income Taxes	3
ACC	220	Intermediate Accounting I	4
BUS	225	Business Finance	3
DBA	110	Database Concepts	3
—	—	Second English Elective ³	3
Total			16

Spring Semester II

ACC	130	Business Income Taxes	3
ACC	227	Practices in Accounting	3
ACC	221	Intermediate Accounting II	4
—	—	Communication Elective ⁴	3
—	—	Humanities/Fine Arts Elective ⁵	3
Total			16

Total credit hours required for degree: 73

¹Accounting Technical Electives

Choose 3 credits from:

ACC 225	BUS 228
ACC 240	BUS 240
ACC 269	

²Math Electives

MAT 140
MAT 161

³Second English Electives

ENG 112
ENG 114

⁴Communications Electives

COM 110
COM 120
COM 231

⁵Humanities/Fine Arts Electives

ART 114	ART 115
ENG 231	ENG 232
ENG 241	ENG 242
ENG 261	ENG 262
MUS 110	MUS 210
REL 211	REL 212
PHI 240	

Accounting

A 25 10 0 D1

Diploma

This program is designed to help individuals who already have a 4-year degree obtain the additional educational hours required to sit for the CPA examination in North Carolina. Course content is also designed to help prepare students for the CPA examination. Please keep in mind that the NC State Board of CPA Examiners makes the final determination of which courses meet the state educational requirements. Therefore, GTCC CANNOT guarantee that any course will meet the requirements of the NC CPA Board.

Program Outcomes:

Upon successful completion of the Accounting diploma, the graduate should be able to:

- Record moderately complex financial transactions of a business properly
- Prepare financial statements that fairly present the financial position of the company
- Prepare moderately complicated tax returns for an individual and a wide variety of businesses
- Evaluate the usefulness and risk associated with the internal control of a company
- Record basic transactions for a government or not-for-profit entity accurately
- Utilize basic tools in cost accounting to make operational decision of a company properly

Fall Semester I			Credits
ACC	120	Principles of Financial Accounting	4
BUS	115	Business Law	3
COM	120	Intro to Interpersonal Comm	3
BUS	240	Business Ethics	3
Total			13

Spring Semester I			
ACC	121	Principles of Managerial Accounting	4
ACC	149	Intro to Accounting Spreadsheets	2
ACC	220	Intermediate Accounting	4
ENG	111	Expository Writing	3
Total			13

Summer Semester I			
ACC	129	Individual Income Taxes	3
ACC	221	Intermediate Accounting I	4
ACC	225	Cost Accounting	3
Total			10

Fall Semester I			
ACC	130	Business Taxes	3
ACC	269	Audit and Assurance Services	3
ACC	240	Gov. & Not For Profit Accounting	3
BUS	225	Business Finance	3
Total			12

Total credit hours required for diploma: 48

Accounting

A 25 10 0 C1

Certificate

This certificate is designed for individuals who need a basic understanding of accounting. Individuals will become certified in Excel and QuickBooks. This certificate is useful for a small business owner that needs a basic understanding of the accounting function and good Excel skills.

Program Outcomes:

Upon successful completion of the Accounting certificate, the graduate should be able to:

- Record basic financial transactions of a business properly
- Make basic business calculations accurately
- Calculate payroll transactions accurately
- Use accounting software properly

Fall Semester I			Credits
ACC	120	Principles of Financial Accounting	4
Total			4

Spring Semester I			
ACC	121	Principles of Managerial Accounting	4
ACC	149	Intro to Accounting Spreadsheets	2
ACC	151	Accounting Spreadsheet Apps	2
Total			8

Summer Semester I			
ACC	140	Payroll Accounting	2
ACC	150	Accounting Software Apps	2
Total			4

Total credit hours required for certificate: 16

Advertising and Graphic Design

A 30 10 0

Associate in Applied Science

Contact: (336) 334-4822, ext. 50451

The Advertising and Graphic Design curriculum is designed to provide students with the knowledge and skills necessary for employment in the graphic design profession. The program emphasizes design, advertising, illustration and digital and multimedia preparation of printed and electronic promotional materials.

Students will be trained in the development and design of promotional materials such as newspaper and magazine advertisements, posters, folders, letterheads, corporate symbols, brochures, booklets, and the preparation of art for printing, lettering, as well as typography, photography, and electronic media.

Graduates should qualify for employment opportunities with graphic design studios, advertising agencies, printing companies, department stores, and a wide variety of manufacturing industries, newspapers, and businesses with in-house graphics operations.

Program Outcomes:

Upon successful completion of the Advertising and Graphic Design degree, the graduate should be able to:

- Prepare visual communications using the appropriate software
- Prepare traditional and electronic designs, layouts, comprehensive proofs, storyboards, illustrations
- Create projects
- Direct illustration and photography

Fall Semester I			Credits
ART	131	Drawing I	3
ENG	111	Expository Writing	3
GRA	151	Computer Graphics I	2
GRA	161	Computer Graphics Applications I	1
GRD	110	Typography I	3
GRD	141	Graphic Design I	4
Total			16

Spring Semester I			
ART	111	Art Appreciation	3
ENG	114	Professional Research and Reporting	3
GRA	152	Computer Graphics II*	2
GRA	162	Computer Graphics Applications II	1
GRD	131	Illustration I	2
GRD	142	Graphic Design II*	4
GRD	146	Design Applications II	1
Total			16

Summer Semester I			
GRD	160	Photo Fundamentals I*	3
GRD	233	Product Illustration*	2
Total			5

Fall Semester II			
GRA	153	Computer Graphics III*	2
GRD	161	Photo Fundamentals II*	3
GRD	241	Graphic Design III*	4
GRD	246	Design Applications III	1
MAT	115	Mathematical Models	3
Total			13

Spring Semester II			
COM	120	Intro to Interpersonal Communication	3
GRD	242	Graphic Design IV*	4
GRD	247	Design Applications IV	1
GRD	271	Multimedia I	2
GRD	285	Client/Media Relations	2
—	—	Graphic Design Technical Elective ¹	2-3
—	—	Social/Behavioral Science Elective	3
Total			17-18

Summer Semester II			
GRD	243	Graphic Design V*	4
GRD	280	Portfolio Design*	4
Total			8

Total credit hours required for degree: 75-76

¹Graphic Design Technical Electives

Choose 1 course from:

GRA 154 GRD 111
GRD 162 GRD 272

**A student must complete the pre-requisite courses with a minimum grade of "C" or better before advancing to the next course.*

Photography

A 30 10 0 C2

Certificate

The Photography certificate is designed to provide student with the knowledge and skills necessary for professional photography. Students will be trained in the use of professional photography equipment.

Program Outcomes:

Upon successful completion of the Photography certificate, the graduate should be able to:

- Operate professional studio equipment
- Utilize lighting techniques for portrait and product photography

Fall Semester I

GRA	151	Computer Graphics I	2
GRA	161	Computer Graphics Applications I	1
GRD	160	Photo Fundamentals I	3
Total			6

Spring Semester I

GRA	152	Computer Graphics II*	2
GRA	162	Computer Graphics Applications II	1
GRD	161	Photo Fundamentals II	3
Total			6

Fall Semester II

GRD	162	Photo Portfolio	3
Total			3

Total credit hours required for certificate: 15

**A student must complete the pre-requisite courses with a minimum grade of "C" or better before advancing to the next course.*

Air Conditioning, Heating and Refrigeration Technology

A 35 10 0

Associate in Applied Science

Contact: (336) 334-4822 ext. 53092

The Air Conditioning, Heating, and Refrigeration Technology curriculum provides the basic knowledge to develop skills necessary to work with residential and light commercial systems.

Topics include mechanical refrigeration, heating and cooling theory, electricity, controls, and safety. The diploma program covers air conditioning, furnaces, heat pumps, tools and instruments. In addition, the AAS degree covers residential building codes, residential system sizing, and advanced comfort systems.

Diploma graduates should be able to assist in the start-up, preventive maintenance, service, repair, and/or installation of residential and light commercial systems. AAS degree graduates should be able to demonstrate an understanding of system selection and balance and advanced systems.

Program Outcomes:

Upon successful completion of the Air Conditioning, Heating, and Refrigeration degree, the graduate should be able to:

- Install heating and air conditioning systems
- Perform preventive maintenance on heating, air conditioning and refrigeration systems
- Repair electrical components and controls in heating and air conditioning systems
- Demonstrate the ability to interpret and implement the NC HVAC Building Codes
- Demonstrate personal and professional ethics and interpersonal skills that are expected in the workplace
- Apply refrigeration principles and practices to heating, air conditioning and refrigeration systems

Fall Semester I			Credits
AHR	110	Introduction to Refrigeration	5
AHR	111	HVACR Electricity	3
AHR	112	Heating Technology	4
AHR	213	HVACR Building Codes	2
MAT	110	Mathematical Measurement	3
Total			17

Spring Semester I			
AHR	113	Comfort Cooling	4
AHR	114	Heat Pump Technology	4
AHR	160	Refrigerant Certification	1
ELC	117	Motors and Controls	4
ENG	111	Expository Writing	3
CIS	111	Basic PC Literacy	2
Total			18

Summer Semester I

AHR	212	Advanced Comfort Systems	4
AHR	130	HVAC Controls	3
Total			7

Fall Semester II

AHR	255	Indoor Air Quality	2
AHR	240	Hydronic Heating	2
—	—	Air Cond/Heat/Refrig Technical Elective ¹	1-2
—	—	Social/Behavioral Science Elective ²	3
—	—	Communications Elective ³	3
Total			11-12

Spring Semester II

AHR	211	Residential System Design	3
AHR	225	Commercial Building Design	3
AHR	235	Refrigeration Design	3
—	—	Humanities/Fine Arts Elective ⁴	3
Total			12

Total credit hours required for degree: 65-66

¹Air Conditioning, Heating & Refrigeration Technical Electives

Choose 1 course from:

AHR 120

AHR 180

AHR 220

AHR 250

²Social/Behavioral Science Electives

PSY 150

SOC 210

³Communications Electives

COM 110

COM 120

⁴Humanities/Fine Arts Electives

HUM 110

HUM 115

Air Conditioning, Heating and Refrigeration Technology

A 35 10 0 D1

Diploma

Upon the completion of this diploma program, students should possess the essential knowledge to develop the skills necessary to work with residential and light commercial comfort systems. Topics include heating and air conditioning theory, heat pumps, electricity, HVAC controls, refrigeration, and safety.

Program Outcomes:

Upon successful completion of the Air Conditioning, Heating, and Refrigeration diploma, the graduate should be able to:

- Install residential heating and air conditioning systems
- Perform a preventive maintenance on heating and air conditioning systems
- Repair electrical components and controls in heating and air conditioning systems
- Demonstrate the ability to interpret and implement the NC HVAC Building Codes
- Demonstrate the personal and professional ethics and interpersonal skills that are expected in the workplace

Fall Semester I			Credits
AHR	110	Introduction to Refrigeration	5
AHR	111	HVACR Electricity	3
AHR	112	Heating Technology	4
AHR	213	HVACR Building Codes	2
MAT	110	Mathematical Measurement	3
Total			17

Spring Semester I			
AHR	113	Comfort Cooling	4
AHR	114	Heat Pump Technology	4
AHR	160	Refrigerant Certification	1
ELC	117	Motors and Controls	4
AHR	211	Residential System Design	3
CIS	111	Basic PC Literacy	2
Total			18

Summer Semester I			
ENG	111	Expository Writing	3
AHR	212	Advanced Comfort Systems	4
AHR	130	HVAC Controls	3
Total			10

Total credit hours required for diploma: 45

Architectural Technology

A 40 10 0

Associate in Applied Science

Contact: (336) 334-4822, ext. 53076

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 assist architects, engineers, and construction professionals in developing plans and related documentation for residential and commercial projects in both the private and public sectors. Includes instruction in architectural drafting, computer-assisted drafting, construction materials and methods, environmental systems, codes and standards, structural principles, cost estimation, planning, graphics, and presentation.

Program Outcomes:

Upon successful completion of the Architectural Technology program, the graduate should be able to:

- Demonstrate professional behavior
- Communicate orally and in writing using the rules of standard English grammar
- Communicate graphically using hand sketches, AutoCAD, Revit, and Sketchup
- Select appropriate construction materials and methods of construction
- Plan, organize, and create to industry standards simplified working drawings for residential and light commercial buildings

Fall Semester I			Credits
ARC	111	Intro to Architectural Technology	3
ARC	114	Architectural CAD	2
ARC	114A	Architectural CAD Lab	1
ARC	250	Survey of Architecture	3
ENG	111	Expository Writing	3
MAT	120	Geometry and Trigonometry	3
Total			15

Spring Semester I

ARC	112	Construction Materials, Methods	4
ARC	113	Residential Architectural Technology	3
BPR	130	Print Reading/Construction	3
CMT	120	Codes and Inspections	3
MAT	121	Algebra / Trigonometry I	3
Total			16

Summer Semester I

ARC	160	Residential Design	3
ARC	221	Arch. 3-D CAD	3
Total			6

Fall Semester II

SST	140	Green Building & Design Concepts	3
ARC	211	Light Construction Technology	3
ARC	225	Architectural BIM I	2
ARC	230	Environmental Systems	4
—	—	Communications Elective ²	3
Total			15

Spring Semester II

ARC	213	Design Project	4
ARC	240	Site Planning	3
—	—	Architectural Technical Elective ¹	2-4
—	—	Humanities/Fine Arts Elective ³	3
—	—	Social/Behavioral Science Elective ⁴	3
Total			15-17

Total credit hours required for degree: 67-69

¹Architectural Technology Technical Electives

Choose 1 course from:

ARC 235	CIV 240
ARC 226	EGR 115
CIV 110	HOR 160
CIV 125	HOR 260
CIV 210	SRV 110
CIV 230	

²Communications Electives

COM 110
COM 120
COM 231
ENG 114

³Humanities/Fine Arts Electives

HUM 110	HUM 115
PHI 240	

⁴Social/Behavioral Science Electives

ECO 251
PSY 150
SOC 210

CAD/BIM

A 40 10 0 C2

Certificate

The Architectural Technology CAD/BIM Certificate A40100C2 is intended for design professionals seeking to establish or upgrade skill sets in Computer Aided Drafting, 3-D CAD Design, and Building Information Modeling. Students will obtain credits in courses offering basic AutoCAD, Sketchup Pro 8 and Revit software applications. This certificate can be completed in 2-3 semester and all this certificate's courses can be applied toward the AAS degree. To earn the Architectural Technology CAD/BIM Certificate, a student must complete at least 14 credit hours in a prescribed course of study.

Program Outcomes:

Upon successful completion of the CAD/BIM certificate, the graduate should be able to:

- Create basic 2-D drawings in AutoCAD 2013
- Create BIM databases and models in AutoDESK Revit 2013
- Create a materials list for the Building Information Model database
- Create 3-D electronic presentation models in Sketchup Pro

Fall Semester I			Credits
ARC	114	Architectural CAD	2
ARC	114A	Architectural CAD Lab	1
Total			3

Spring Semester I			
ARC	112	Construction Materials, Methods	4
ARC	225	Architectural BIM I	2
BPR	130	Print Reading	3
Total			6

Summer Semester I			
ARC	221	Arch. 3-D CAD	3
ARC	226	Architectural BIM II	2
Total			5

Total credit hours required for degree: 17

Associate of General Education

A 10 30 0

Associate in Applied Science

Contact: (336) 334-4822, 50578

The General Education curriculum is designed for the student who is interested in pursuing a program of study in general education or who is not ready to choose a more specific educational program. This curriculum provides an introduction to the liberal arts (general education) and enables the student to tailor the program beyond that point to personal needs and interests. Students may apply any technical, general education or college transfer course to the degree. (Students should note, however, that they must satisfy any course prerequisites listed.) This program is not intended for students who want to transfer to a four-year university.

Program Outcomes:

Each student in the general education program will prepare an individualized program of study in consultation with his/her advisor. The program of study must be designed to ensure that the student will acquire competence in the following areas which have been identified as institution-wide student competencies. A graduate of the general education program will be able to:

- Demonstrate adult literacy in writing tasks in personal and work environments
- Apply research skills, including locating sources, selecting sources appropriate to task, and attributing source material correctly
- Demonstrate oral presentation skills to meet workplace standards
- Solve problems, using evidence and reasoning skills
- Use interpersonal skills in face-to-face and team situations
- Demonstrate adult computational skills to support personal and work environments

English Composition			Credits
ENG	111	Expository Writing	3

Choose one of the following:

ENG	112	Argument-Based Research	3
ENG	114	Professional Research & Reporting	
Total			6

Humanities/Fine Arts

—	—	Humanities/FINE ARTS course	3
—	—	Humanities/Fine Arts course	3

Choose one of the following:

COM	231	Public Speaking	3
COM	110	Introduction to Communication	3
COM	120	Intro to Interpersonal Communication	3
Total			9

Social/Behavioral Sciences

—	—	Social Sciences elective	3
—	—	Social Sciences elective	3
Total			6

Mathematics/Natural Sciences

—	—	MAT elective (not developmental)	3
—	—	MAT or Natural Science elective	3
Total			6

Computer Sciences

CIS	110	Introduction to Computers	3
Total			3

Other Courses

—	—	General Elective	3
—	—	General Elective	3
—	—	General Elective	3
—	—	General Elective	3
—	—	General Elective	3
—	—	General Elective	3
—	—	General Elective	3
—	—	General Elective	3
—	—	General Elective	3
—	—	General Elective	3
—	—	General Elective	3

Total credit hours required for degree: 64-65

Automotive Systems Technology

A 60 16 0

Associate in Applied Science

Contact: (336) 334-4822, ext. 50054

Curriculums in the Mobile Equipment Maintenance and Repair pathway prepare individuals for employment as entry-level transportation service technicians. The program provides an introduction to transportation industry careers and increases student awareness of the diverse technologies associated with this dynamic and challenging field.

Course work may include transportation systems theory, braking systems, climate control, design parameters, drive trains, electrical/electronic systems, engine repair, engine performance, environmental regulations, materials, product finish, safety, steering/suspension, transmission/transaxles, and sustainable transportation, depending on the program major area chosen.

Graduates of this pathway should be prepared to take professional licensure exams, which correspond to certain programs of study, and to enter careers as entry-level technicians in the transportation industry.

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.

General Option

This program of study prepares individuals for employment in the automotive service industry as automotive technicians. Upon completion, students should be prepared for Automotive Service Excellence certification and ready for employment in the automotive industry.

The program combines classroom and lab experiences through integration of academic course work with real hands-on training in a shop environment.

Program Outcomes:

Upon successful completion of the Automotive Systems Technology--General Option degree, the graduate should be able to:

- Repair automotive mechanical systems
- Repair suspension and steering systems
- Repair brake systems
- Repair automotive electrical and electronic systems
- Repair climate control systems
- Repair engine performance systems
- Demonstrate compliance with personal safety practices as applicable to the automotive industry.
- Demonstrate compliance with environmental safety practices as applicable to the automotive industry.

Fall Semester I

			Credits
AUT	110	Introduction to Auto Technology	3
AUT	161	Basic Automotive Electricity	5
AUT	186	PC Skills for Auto Techs	3
ENG	111	Expository Writing	3
MAT	115	Mathematical Models	3
Total			17

Spring Semester I

AUT	123	PowerTrain Diagnosis/Service	2
AUT	151	Brake Systems	3
AUT	151A	Brake Systems Lab	1
AUT	171	Automotive Climate Control	4
ENG	114	Prof Research and Reporting	3
—	—	Humanities/Fine Arts Elective	3
Total			16

Summer Semester I

AUT	141	Suspension and Steering Systems	3
AUT	141A	Suspension and Steering Lab	1
AUT	113	Automotive Servicing 1	2
Total			6

Fall Semester II

AUT	163	Advanced Automotive Electricity	3
AUT	163A	Advanced Auto Electricity Lab	1
AUT	181	Engine Performance I	3
AUT	181A	Engine Performance I Lab	1
AUT	116	Engine Repair	3
AUT	116A	Engine Repair Lab	1
Total			12

Spring Semester II

AUT	231	Man Trans/Axles/Drtrains	3
AUT	231A	Man Trans/Ax/Drtrains Lab	1
AUT	183	Engine Performance II	4
AUT	285	Intro to Alternative Fuels	3
COM	120	Intro to Interpersonal Comm	3
—	—	Social/Behavioral Science Elective	3
Total			17

Summer Semester II

AUT	221	Auto Trans/Transaxles	3
AUT	221A	Auto Trans/Transaxles Lab	1
AUT	213	Automotive Servicing 2	2
Total			6

Total credit hours required for degree: 74

Cooperative education credit hours may be substituted for some AUT courses with the approval of the department chair.

Ford Option

A 60 16 0-A1

GM Option

A 60 16 0-A2

Limited Enrollment Program:

Contact the Transportation Division Office for program admission requirements at extension 50054.

Students in the Ford Automotive Student Service Training (ASSET) or General Motors (GM) Automotive Service Educational Program (ASEP) program options are required to be sponsored by a qualified dealership or repair facility prior to registration. Contact the program advisor or the Automotive Systems Technology Department Chair for additional information. Academic requirements for the certificate programs are the same as those required for the degree programs.

Both Ford and GM options require enrolled students to participate in cooperative experiences each semester. The cooperative experiences vary in length and take place at the sponsoring dealerships and/or automotive repair facilities.

Fall Semester I			Credits
ACA	111	College Student Success	1
AUT	110	Introduction to Auto Technology	3
AUT	161	Basic Automotive Electricity	5
AUT	163*	Advanced Automotive Electricity	3
CIS	110	Introduction to Computers	3
COE	111	Co-op Work Experience I	1
Total			16

Spring Semester I			Credits
AUT	141	Suspension and Steering Systems	3
AUT	151	Brake Systems	3
ENG	111	Expository Writing	3
COE	122	Co-op Work Experience II	2
—	—	Social/Behavioral Science	3
Total			14

Summer Semester I			Credits
AUT	116	Engine Repair	3
AUT	171	Auto Climate Control	4
COE	131	Co-op Work Experience III	1
Total			8

Fall Semester II			Credits
AUT	181	Engine Performance 1	3
AUT	183	Engine Performance 2	4
COM	120	Intro to Interpersonal Communication	3
MAT	115	Mathematical Models	3
COE	222	Co-op Work Experience III	2
Total			15

Spring Semester II

AUT	221	Auto Transmissions/Transaxles	3
AUT	231	Manual Trans/Axles/Drtrains	3
ENG	114	Prof Research and Reporting	3
—	—	Humanities/Fine Arts Elective	3
COE	212	Co-op Work Experience IV	2
Total			14

Total credit hours required for degree: 67

**In the Ford and GM option programs, successful completion of AUT 163 (grade C or better) is required to enroll in the following semesters.*

General Option

A 60 16 0-C1

Certificate

The Automotive Systems Technology--General Option certificate is intended to train individuals seeking careers as general automotive service technicians as well as for those already possessing college degrees.

Program Outcomes:

Upon successful completion of the Automotive Systems --General Option certificate, the graduate should be able to:

- Repair brake systems.
- Repair automotive electrical systems.
- Demonstrate compliance with personal safety practices as applicable to the automotive industry.
- Demonstrate compliance with environmental safety practices as applicable to the automotive industry.

Fall Semester I			Credits
AUT	110	Introduction to Auto Technology	3
AUT	161	Basic Automotive Electricity	5
Total			8

Spring Semester I			Credits
AUT	151	Brake Systems	3
AUT	151A	Brake Systems Lab	1
Total			4

Total credit hours required for certificate: 12

Cooperative education credit hours may be substituted for some course work by the approval of the Department Chair.

Ford Electrical

A 60 16 0-C2

Certificate

The Ford Electrical and Ford Chassis certificates are intended to prepare individuals for certification as a Ford Certified Automotive Technician.

Program Outcomes:

Upon successful completion of the Ford Electrical certificate, the graduate should be able to:

- Repair Ford electrical and electronic systems
- Demonstrate compliance with personal safety practices as applicable to the automotive industry.
- Demonstrate compliance with environmental safety practices as applicable to the automotive industry.

Fall Semester I			Credits
ACA	111	College Student Success	1
AUT	110	Introduction to Auto Technology	3
AUT	161	Basic Automotive Electricity	5
AUT	163	Advanced Automotive Electricity	3
CIS	110	Introduction to Computers	3
COE	111	Co-op Work Experience I	1
Total			16

Total credit hours required for certificate: 16

Ford Chassis

A 60 16 0-C3

Certificate

Program Outcomes:

Upon successful completion of the Ford Chassis certificate, the graduate should be able to do the following as it relates to Ford automobiles:

- Repair Ford automotive mechanical systems
- Repair Ford suspension and steering systems
- Repair Ford brake systems
- Repair Ford climate control systems
- Demonstrate compliance with personal practices as applicable to the automotive industry.
- Demonstrate compliance with environmental safety practices as applicable to the automotive industry.

Spring Semester I			
AUT	141	Suspension and Steering Systems	3
AUT	151	Brake Systems	3
COE	122	Co-op Work Experience II	2
Total			8

Summer Semester I			
AUT	116	Engine Repair	3
AUT	171	Auto Climate Control	4
COE	131	Co-op Work Experience III	1
Total			8

Total credit hours required for certificate: 16

General Motors Electrical

A 60 16 0-C4

Certificate

The General Motors Electrical and General Motors Chassis certificates are intended to prepare individuals for certification as a GM Certified Automotive Technician.

Program Outcomes:

Upon successful completion of the GM Electrical certificate, the graduate should be able to:

- Repair GM electrical and electronic systems
- Demonstrate compliance with personal safety practices as applicable to the automotive industry.
- Demonstrate compliance with environmental safety practices as applicable to the automotive industry.

Fall Semester I			Credits
ACA	111	College Student Success	1
AUT	110	Introduction to Auto Technology	3
AUT	161	Basic Automotive Electricity	5
AUT	163	Advanced Automotive Electricity	3
COE	111	Co-op Work Experience I	1
Total			13

Total credit hours required for certificate: 13

General Motors Chassis

A 60 16 0-C5

Certificate

Program Outcomes:

Upon successful completion of the GM Chassis certificate, the graduate should be able to do the following as it relates to GM automobiles:

- Repair GM automotive mechanical systems
- Repair GM suspension and steering
- Repair GM brake systems
- Repair GM climate control systems
- Demonstrate compliance with personal safety practices as applicable to the automotive industry.
- Demonstrate compliance with environmental safety practices as applicable to the automotive industry.

Spring Semester I			
AUT	141	Suspension and Steering Systems	3
AUT	151	Brake Systems	3
COE	122	Co-op Work Experience II	2
Total			8

Summer Semester I			
AUT	116	Engine Repair	3
AUT	171	Auto Climate Control	4
COE	131	Co-op Work Experience III	1
Total			8

Total credit hours required for certificate: 16

Aviation Electronics (Avionics) Technology

A 60 15 0

Associate in Applied Science

Contact: (336) 334-4822, ext. 59016

This is a limited enrollment program: Contact the Enrollment Services Office for Program admission requirements and program application deadlines.

This curriculum provides individuals with the basic knowledge and skills needed to enter the avionics career field as a technician and prepares students for the current avionics licensing agency examination.

Course work includes general aviation maintenance, sheet metal, airframe systems, electrical and electronic systems, practical wiring, navigation equipment, flight management and flight control systems, flight line testing and troubleshooting, and Federal Aviation Administration (FAA) regulations.

Graduates should be prepared for the current avionics licensing agency examination and for entry-level employment as an avionics technician in an avionics repair station, an airfield fixed base operator's avionics facility, or an independent repair facility.

This program prepares students with the basic knowledge and skills essential for success in the Avionics industry as an avionics technician. It also prepares students for industry certifications such as the Federal Communications Commission (FCC) General-Radiotelephone Operator's License (GROL).

Students possessing a FAA mechanic certificate with either the airframe or powerplant rating, or who have obtained FAA approval for one of these, may enroll in a program to obtain the other rating upon presentation of the certificate or signed FAA Form 8610-2. These students are not required to take AVI 110, Aviation Maintenance-General. Advanced standing may be granted with department chair approval only if the student holds a valid FAA Mechanic Certificate with either Airframe or Powerplant rating(s) or possesses approval for same based on experience and holds a current and valid signed Federal Aviation Administration 8610-2 Form or appropriate work experience.

Program Outcomes:

Upon successful completion of the Aviation Electronics degree, the graduate should be able to:

- Repair aircraft electronic systems with emphasis placed on communication, navigation, and flight management systems.

- Install avionics systems
- Test avionics systems
- Replace avionics systems components and line replaceable units (LRU)
- Interpret applicable FAA and FCC regulations, aircraft service records, original equipment manufacturers' (OEM) technical manuals, schematics, and directives
- Demonstrate knowledge of the privileges, responsibilities, and limitations applying to avionics technicians certified to perform aircraft maintenance

Fall Semester I			Credits
AVI	110	Aviation Maintenance-General	15
—	—	Math Elective ¹	3
Total			18

Spring Semester I			
AET	120	Sheet Metal Aircraft Structures	2
AET	122	Airframe Electrical	4
AET	124	Airframe Systems	4
AET	126	Electronics/Instruments	2
ENG	111	Expository Writing	3
Total			15

Summer Semester I			
AET	130	Avia Engine Electrical	4
AET	132	FAA Regulations	2
ENG	112	Argument-Based Research	3
—	—	Humanities/Fine Arts Elective	3
Total			12

Fall Semester II			
AET	210	Practical Wiring/Factors	2
AET	212	Aviation Comm Systems	2
AET	214	ATC Navigation Systems	2
AET	216	Tactical Nav Systems	2
AET	218	Flight Management and Control	2
COM	231	Public Speaking	3
Total			13

Spring Semester II			
AET	220	Flight Management	2
AET	222	Avia System Interconnect	2
AET	224	Adv Wire/Troubleshooting	4
AET	226	Flight Line Testing	2
AET	228	Avionics FCC Preparation	2
PSY	150	General Psychology	3
Total			15

Total credit hours required for degree: 73

¹Math Electives

MAT 140

MAT 171

Program is taught in block training format: 4 hours per day, 5 days a week. (First semester: 5 hours per day, 5 hours per week)

Aviation Management and Career Pilot Technology

A 60 18 0

Associate in Applied Science

Contact: (336) 334-4822, ext. 59010

The Aviation Management and Career Pilot Technology curriculum prepares individuals for a variety of aviation and aviation-related careers with commercial airlines, general aviation operations, the aerospace industry, the military, and state and federal aviation organizations.

Course work includes fundamentals of flight, aerodynamics, aircraft performance, meteorology, navigation, federal regulations, aviation management, and instrument and commercial ground training. Optional course work includes flight and simulator training or business management training.

Graduates will hold a commercial pilot certificate with an instrument rating or specialize in aviation management. Graduates may find employment as commercial, corporate, and military pilots, fixed base operators and airport managers, flight instructors, and flight dispatchers.

Aviation Management Option

A 60 18 0 A1

Program Outcomes:

Upon successful completion of the Aviation Management Option, the graduate should be able to:

- Orchestrate efficient flight and ground operations
- Apply sales and marketing skills relating to the aviation customer
- Communicate effectively
- Employ electronic resources to research and analyze data
- Operate within the ethical, legal, and regulatory standards of the aviation industry
- Use critical thinking skills to solve aviation problems
- Evaluate financial information to make business decisions
- Demonstrate how to relate well with various aviation customers in the execution of business enterprise

Fall Semester I			Credits
ACA	111	College Student Success	1
AER	110	Air Navigation	3
AER	111	Aviation Meteorology	3
AER	113	History of Aviation	2
AER	150	Private Pilot Flight Theory	3
ENG	111	Expository Writing	3
—	—	Humanities/Fine Arts Elective	3
Total			18

Spring Semester I

AER	112	Aviation Laws and FARs	2
AER	114	Aviation Management	3
AER	160	Instrument Pilot Theory	3
—	—	Aviation Elective or Co-op ¹	2
ENG	112	Argument-Based Research	3
MAT	171	Precalculus Algebra	3
Total			16

Fall Semester II

AER	170	Commercial Flight Theory	3
AER	216	Engines and Systems	3
—	—	Aviation Elective or Co-op ¹	2
BUS	137	Principles of Management	3
COM	231	Public Speaking	3
PHY	110	Conceptual Physics	3
PHY	110A	Conceptual Physics Lab	1
Total			18

Spring Semester II

AER	215	Flight Safety	3
AER	217	Air Transportation	3
—	—	Aviation Elective or Co-op ¹	2
ACC	120	Principles of Financial Accounting	4
LOG	110	Introduction to Logistics	3
PSY	150	General Psychology	3
Total			18

Total credit hours required for degree: 70

¹Aviation Management Option Technical Electives

Choose 3 courses from:

AER 119	COE 131
AER 211	COE 211
AER 213	AER 280
AER 218	AER 285
AER 220	COE 121
AER 281	
COE 111	

Career Pilot Option

A 60 18 0 A2

Attainment of the FAA Commercial Pilot Certificate is required for Career Pilot degree completion, which means that the student is responsible for obtaining all flight training at an offsite facility and will incur associated costs.

Upon successful completion of the Career Pilot Option, the graduate should be able to:

- Pilot an aircraft (for some positions, certain specific certifications are required e.g., C.F.I, M.E.I, and C.F.I.I.);
- Communicate effectively
- Employ electronic resources to research and analyze data
- Operate within the ethical, legal, and regulatory standards of the industry
- Use critical thinking skills to solve aviation problems
- Relate effectively to aviation customers
- Employ scientific and aerodynamic principles to safely and efficiently operate an aircraft

Fall Semester I			Credits
ACA	111	College Student Success	1
AER	110	Air Navigation	3
AER	111	Aviation Meteorology	3
AER	113	History of Aviation	2
AER	150	Private Pilot Flight Theory	3
ENG	111	Expository Writing	3
—	—	Humanities/Fine Arts Elective	3
Total			18

Spring Semester I			
AER	112	Aviation Laws and FARS	2
AER	114	Aviation Management	3
AER	151	Flight-Private Pilot	1
AER	160	Instrument Flight Theory	3
AER	210	Flight Dynamics	3
ENG	112	Argument-Based Research	3
MAT	171	Precalculus Algebra	3
Total			18

Fall Semester II			
AER	161	Flight-Instrument Pilot	2
AER	170	Commercial Flight Theory	3
AER	216	Engines and Systems	3
—	—	Aviation Elective or Co-op ¹	2
COM	231	Public Speaking	3
PHY	110	Conceptual Physics	3
PHY	110A	Conceptual Physics Lab	1
Total			17

Spring Semester II

AER	171	Flight-Commercial Pilot	3
AER	215	Flight Safety	3
AER	217	Air Transportation	3
AER	280	Instructor Pilot Flight Theory	3
—	—	Aviation Elective or Co-op ¹	2
PSY	150	General Psychology	3
Total			17

Total credit hours required for degree: 70

¹Career Pilot Option Technical Electives

Choose 2 courses from:

AER 119	AER 211
AER 212	AER 213
AER 218	AER 220
AER 280	AER 281
AER 285	COE 111
COE 121	COE 131
COE 211	

Aviation Management Option

A 60 18 0 C2

Certificate

This certificate is designed individuals interested in enrolling in the ground-school courses associated with the FAA Private Pilot, Instrument, and Commercial Pilot certificates. It is also geared for those students who already have a degree in another field and are interested in obtaining aviation knowledge for potential employment in the aviation industry.

Program Outcomes:

Upon successful completion of the Aviation Management Option, the graduate should be able to:

- Operate within the regulatory standards of the aviation industry.
- Use critical thinking skills to solve aviation problems
- Relate well with various aviation customers in the execution of business enterprise

Fall Semester I			Credits
AER	110	Air Navigation	3
AER	150	Private Pilot Flight Theory	3
Total			6

Spring Semester I			Credits
AER	111	Aviation Meteorology	3
AER	160	Instrument Pilot Flight Theory	3
Total			6

Fall Semester II			Credits
AER	170	Commercial Flight Theory	3
Total			3

Total credit hours required for certificate: 15

Career Pilot Option

A 60 18 0 C1

Certificate

This certificate is designed for those individuals interested in attaining an FAA Private Pilot certificate and completing the ground school courses for Instrument and Commercial Pilot certificates. Students enrolled in this certificate program are required to attain FAA Private Pilot certificate as a requirement of the Career Pilot certificate. Flight training is done offsite at a flight training facility. Students will be responsible for all flight training and costs.

Program Outcomes:

Upon successful completion of the Career Pilot Option certificate, the graduate should be able to:

- Pilot an aircraft
- Communicate effectively
- Operate within the regulatory standards of the aviation industry
- Use critical thinking skills to solve aviation problems
- Relate effectively to aviation customers
- Employ scientific and aerodynamic principles to safely and efficiently operate and aircraft

Fall Semester I			Credits
AER	110	Air Navigation	3
AER	150	Private Pilot Flight Theory	3
AER	151	Flight-Private Pilot	1
Total			7

Spring Semester I			Credits
AER	111	Aviation Meteorology	3
Total			3

Fall Semester II			Credits
AER	170	Commercial Flight Theory	3
AER	160	Instrument Pilot Flight Theory	3
Total			6

Total credit hours required for certificate: 16

Aviation Systems Technology

A 60 20 0

Associate in Applied Science

Contact: (336)-334-4822, ext 59014 - Aviation Center

Limited Enrollment Program: Contact the Enrollment Services Office for Program admission requirements and Program application deadlines.

The Aviation Systems Technology provides individuals with the knowledge and skills to qualify for an aircraft mechanic's certificate with airframe and/or powerplant ratings. The curriculum is approved by the Federal Aviation Administration (FAA) under 14 CFR Part 147, which governs aviation maintenance schools.

Course work includes aviation mathematics, FAA regulations, basic electricity, aircraft drawings; aircraft structures, systems, and components; aircraft engines, theory, systems, and components; and engine inspections and maintenance.

Employment opportunities exist as entry-level mechanics with air carriers, manufacturers, repair stations, fixed base operators, flight schools, and government aviation operations.

Students who already possess either the Airframe or Powerplant rating, or who have been approved by the FAA for either rating and have a signed FAA Form 8610-2 are not required to enroll in AVI-110, Aviation Maintenance-General. However, presentation of the FAA Mechanic certificate, with one or the other rating, or the signed FAA Form 8610-2 is required prior to registration in the program.

As a limited enrollment program and due to the AST program schedule, new classes are formed each Fall semester.

This program prepares individuals with the basic knowledge and skills for a career as an Aviation Maintenance Technician (AMT), generally known as an Airframe & Powerplant (A&P) mechanic. The Aviation Systems Technology (AST) program is designed to prepare students for certification through the Federal Aviation Administration (FAA) for the Airframe, Powerplant, or both ratings.

Program Outcomes:

Upon successful completion of the Aviation Systems Technology degree, the student should be able to:

- Inspect airframe systems and structures as allowed by the FAA
- Repair airframe systems and structures as allowed by the FAA
- Service airframe systems and structures as allowed by the FAA
- Inspect powerplant systems as allowed by the FAA
- Repair powerplant systems as allowed by the FAA
- Service powerplant systems as allowed by the FAA

- Replace airframe systems components within the limits prescribed by the FAA
- Repair airframe systems components within the limits prescribed by the FAA
- Repair powerplant components within the prescribed limits of the FAA
- Replace powerplant components within the prescribed limits of the FAA
- Demonstrate proper documentation of maintenance, servicing, and repair records as required by the FAA
- Demonstrate knowledge of the privileges and responsibilities of certificated FAA Aircraft Maintenance Technicians

Fall Semester I			Credits
AVI	110	Aviation Maintenance-General	15
ENG	111	Expository Writing	3
Total			18

Spring Semester I			
AVI	120	Airframe Maintenance I	12
—	—	Second English Elective ²	3
Total			15

Summer Semester I			
AVI	130	Airframe Maintenance II	9
—	—	Math Elective	3
Total			12

Fall Semester II			
AVI	230	Airframe Maintenance III	7
AVI	240	Powerplant Maintenance I	6
COM	231	Public Speaking	3
Total			16

Spring Semester II			
AVI	250	Powerplant Maintenance II	15
PSY	150	General Psychology	3
Total			18

Summer Semester II			
AVI	260	Powerplant Maintenance III	9
—	—	Humanities/Fine Arts Elective	3
Total			12

Total credit hours required for degree: 91

²Math Electives

MAT 140
MAT 171

³Second English Electives

ENG 112
ENG 114

Airframe and Powerplant

A 60 20 0 C1

Certificate

This program prepares individuals with the basic knowledge and skills for a career as an Aviation Maintenance Technician (AMT), generally known as an Airframe & Powerplant (A&P) mechanic. The Aviation Systems Technology (AST) program is designed to prepare students for certification through the Federal Aviation Administration (FAA) for the Airframe, Powerplant, or both ratings.

Students who already possess either the Airframe or Powerplant rating, or who have been approved by the FAA for either rating and have a signed FAA Form 8610-2 are not required to enroll in AVI-110, Aviation Maintenance-General. However, presentation of the FAA Mechanic certificate, with one or the other rating, or the signed FAA Form 8610-2 is required prior to registration in the program.

As a limited enrollment program and due to the AST program schedule, new classes are formed each Fall semester.

Program Outcomes:

Upon successful completion of the Airframe and Powerplant certificate, the student should be able to:

- Service airframe systems and structures as allowed by the FAA
- Repair systems components within the limits prescribed by the FAA
- Replace aircraft systems components within the limits prescribed by the FAA
- Demonstrate proper documentation of maintenance, servicing, and repair records as required by the FAA
- Demonstrate the privileges and responsibilities of certified FAA Aircraft Maintenance Technicians

Fall Semester I			Credits
AVI	110	Aviation Maintenance-General ¹	15
Total			15

Spring Semester I			
AVI	120	Airframe Maintenance I	12
Total			12

Summer Semester I			
AVI	130	Airframe Maintenance II	9
Total			9

Fall Semester II			
AVI	230	Airframe Maintenance III	7
AVI	240	Powerplant Maintenance I	6
Total			13

Spring Semester II			
AVI	250	Powerplant Maintenance II	15
Total			15

Summer Semester II			
AVI	260	Powerplant Maintenance III	9
Total			9

Total credit hours required for certificate: 73

Airframe Rating Option

A 60 20 0 C2

Certificate

This program prepares individuals with the basic knowledge and skills for a career as an Aviation Maintenance Technician (AMT) with a concentration in Airframe systems. This certificate program is designed to prepare students for certification through the Federal Aviation Administration (FAA) for the Airframe rating.

As a limited enrollment program and due to the AST program schedule, new classes are formed each Fall semester.

Program Outcomes:

Upon successful completion of the Airframe Rating certificate, the student should be able to:

- Inspect airframe systems and structures as allowed by the FAA
- Repair airframe systems and structures as allowed by the FAA
- Service airframe systems and structures as allowed by the FAA
- Repair airframe systems components within the limits prescribed by the FAA
- Replace airframe systems components within the limits prescribed by the FAA
- Demonstrate proper documentation of maintenance, servicing, and repair records as required by the FAA
- Demonstrate knowledge of the privileges and responsibilities of certificated FAA Aircraft Maintenance Technicians

Fall Semester I			Credits
AVI	110	Aviation Maintenance-General ¹	15
Total			15

Spring Semester I			
AVI	120	Airframe Maintenance I	12
Total			12

Summer Semester I			
AVI	130	Airframe Maintenance II	9
Total			9

Fall Semester II			
AVI	230	Airframe Maintenance III	7
Total			7

Total credit hours required for certificate: 43

¹Students who possess an FAA mechanic certificate with powerplant rating, or who possess FAA approval for the powerplant rating based on experience (signed FAA Form 8610-2) are not required to complete AVI 110.

Powerplant Rating Option

A 60 20 0 C3

Certificate

This program prepares individuals with the basic knowledge and skills for a career as an Aviation Maintenance Technician (AMT) with a concentration in Airframe systems. This certificate program is designed to prepare students for certification through the Federal Aviation Administration (FAA) for the Powerplant rating.

As a limited enrollment program and due to the AST program schedule, new classes are formed each Fall semester.

Program Outcomes:

Upon successful completion of the Powerplant Rating certificate, the student should be able to:

- Inspect powerplant systems and structures as allowed by the FAA
- Repair powerplant systems and structures as allowed by the FAA
- Service powerplant systems and structures as allowed by the FAA
- Repair powerplant systems components within the limits prescribed by the FAA
- Replace powerplant systems components within the limits prescribed by the FAA
- Demonstrate proper documentation of maintenance, servicing, and repair records as required by the FAA
- Demonstrate privileges and responsibilities of certificated FAA Aircraft Maintenance Technicians

Fall Semester I			Credits
AVI	110	Aviation Maintenance-General ¹	15
Total			15

Spring Semester I			
AVI	250	Powerplant Maintenance II ²	15
Total			15

Summer Semester I			
AVI	260	Powerplant Maintenance III ²	9
Total			9

Fall Semester II			
AVI	240	Powerplant Maintenance I ²	6
Total			6

Total credit hours required for certificate: 45

¹Students who possess an FAA mechanic certificate with airframe rating, or who possess FAA approval for the airframe rating based on experience (signed FAA Form 8610-2) are not required to complete AVI 110

²Courses are not taken sequentially due to normal course flow mandated by AST programs for students taking combined airframe and powerplant options.

Basic Law Enforcement Training

C 55 12 0

Certificate

Fall Semester I

Credits

CJC	100	Basic Law Enforcement Training	19
Total			19

Contact: (336) 334-4822, ext. 50058

Total credit hours required for certificate: 19

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

Closed Enrollment Program

This is a closed enrollment program. Applicants must be sponsored by a law enforcement agency or employed by a law enforcement agency. The application process for this program goes through the Criminal Justice Department. Please contact the BLET Coordinator at extension 50058 for more information.

Special Entrance Requirements

All students entering the Basic Law Enforcement Training program must meet the special requirements as indicated by the N.C. Criminal Justice Standards and the N.C. Sheriff's Standards Divisions of the N.C. Department of Justice. Students may not be convicted of any felony or serious misdemeanor offenses as defined by the Commission. They cannot be convicted of any offense of moral turpitude. Examples of moral turpitude are, but not limited to: rape, any sexual offense, indecent liberties, use, sale, or manufacture of controlled substances, or any offense which addresses public morality.

To be employed in this field, it is necessary to be a U.S. citizen.

Program Outcomes:

Upon successful completion of this program, the Basic Law Enforcement Training, graduate should be able to:

- Demonstrate driving skills for law enforcement
- Demonstrate subject control and arrest techniques
- Use firearms appropriately
- Demonstrate proper handling of domestic violence incidents
- Apply first responder principles in a given assignment

Biotechnology

A 20 10 0

Associate in Applied Science

Contact: (336) 334-4822, ext. 50357

The Biotechnology curriculum is designed to meet the increasing demands for skilled laboratory technicians in various fields of biological and chemical technology.

Course work emphasizes biology, chemistry, mathematics and technical communications. The curriculum objectives are designed to prepare graduates to serve in three distinct capacities: research assistant to a biologist or chemist; laboratory technician/instrumentation technician; and quality control/quality assurance technician.

Graduates may find employment in various areas of industry and government including research and development, manufacturing, sales, and customer service.

The Biotechnology Program at GTCC is a collaborative educational program offered by Alamance Community College (ACC) and GTCC. Students are able to complete the first two semesters, as well as some selected general education courses from the second year, at GTCC. Students who successfully complete at least the first two semesters at GTCC will be admitted to the Alamance Community College program and will be able to complete the program requirements at ACC. Alamance Community College will award the Associate of Applied Science degree to all students who meet degree requirements.

Program Outcomes:

- Demonstrate effective oral and written communication skills.
- Evaluate the principles and concepts related to biotechnology.
- Demonstrate effective lab skills necessary for the biotechnology workforce.
- Incorporate critical thinking in a variety of independent and collaborative laboratory projects.
- Demonstrate academic skills necessary for transition into articulating educational institutions.
- Incorporate laboratory procedures in a safe and organized manner into laboratory exercises.

Courses that may be completed at GTCC

Fall Semester I			Credits
ENG	111	Expository Writing	3
BIO	111	General Biology I	4
—	—	Chemistry Elective ¹	4
—	—	Math Elective ²	3-4
—	—	Humanities/Fine Arts Elective ³	3
Total			17-18

Spring Semester I

ENG	114	Professional Research and Reporting	3
BIO	112	General Biology II	4
CIS	110	Introduction to Computers	3
—	—	Chemistry Elective ¹	4
—	—	Social/Behavioral Science Elective ⁴	3
Total			17

Courses that may be completed at ACC

BIO	250	Genetics	4
BIO	275	Microbiology	4
BTC	181	Basic Lab Techniques	4
BTC	285	Cell Culture	3
BTC	281	Bioprocess Techniques	4
BTC	286	Immunological Techniques	4
BTC	288	Biotech Lab Experience	3
CHM	263	Analytical Chemistry	5
COE	112	Coop Work Experience	2
PHY	120	Health Sciences Physics	4

Total credit hours required for degree: 71

¹Chemistry Electives

Fall I

CHM 131 and CHM 131 A

CHM 151 (*Recommended if pursuing 4-year degree*)

Spring I

CHM 132

CHM 152 (*Recommended if pursuing 4-year degree*)

²Math Electives

MAT 110

MAT 161 and MAT 161A (*Recommended if pursuing 4-year degree*)

³Humanities/Fine Arts Electives

ART 114 ART 115

COM 231 MUS 110

PHI 215

⁴Social/Behavioral Science Electives

ECO 251 ECO 252

POL 120 PSY 150

SOC 210

Note: Additional Biology courses including BIO 250—Genetics and BIO 275—Microbiology can be taken at GTCC for credit at ACC.

Business Administration

A 25 12 0

Associate in Applied Science

Contact: (336) 334-4822, ext. 50085

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 in 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.

Classroom activities that develop team-building skills will prepare graduates to function as contributing members of management teams. Graduates may find employment in large and small businesses, not-for-profit service organizations, government agencies, and financial institutions.

Students will be required to use technology (computer, internet, etc.) in all courses in this program.

Most courses required under this program are offered in a variety of formats:

- Traditional (face to face, in a classroom setting)
- On-line (no traditional class time - lecture/labs on-line)
- Hybrid (part face-to-face classroom, part on-line)

Program Outcomes:

Upon successful completion of the Business Administration program, the graduate should be able to:

- Implement strategies based on consumer needs, market changes and best practices in business
- Cultivate a collaborative work environment
- Combine word processing, spreadsheet, database, and business software skills in the completion of business projects
- Use critical thinking skills to solve business problems
- Operate within the ethical, legal, and regulatory parameters of the industry
- Demonstrate customer focus in the execution of business processes
- Evaluate financial information to make business decisions
- Implement business strategies based on customer needs, the competitive environment, resources available, and operational constraints

Fall Semester I			Credits
—	—	ACA Elective ¹	1
BUS	110	Introduction to Business	3
BUS	125	Personal Finance	3
ENG	111	Expository Writing	3
LOG	110	Introduction to Logistics	3
MKT	120	Principles of Marketing	3
Total			16

Spring Semester I			Credits
ACC	120	Principles of Financial Accounting	4
CIS	110	Introduction to Computers	3
ENG	112	Argument Based Research	3
—	—	Communication Elective ²	3
—	—	Math Elective ³	3
Total			16

Summer Semester I			Credits
BUS	137	Principles of Management	3
DBA	110	Database Concepts	3
Total			6

Fall Semester II			Credits
ACC	121	Principles of Managerial Accounting	4
ACC	149	Intro to Accounting Spreadsheets	2
BUS	115	Business Law	3
BUS	225	Business Finance	3
ECO	251	Principles of Microeconomics	3
Total			15

Spring Semester II			Credits
ACC	151	Accounting Spreadsheet Apps	2
BUS	228	Business Statistics	3
BUS	280	Real Small Business	4
ECO	252	Principles of Macroeconomics	3
—	—	Humanities/Fine Arts Elective ⁴	3
Total			15

Total credit hours required for degree: 68

¹ACA Electives

ACA 111

ACA 112

²Communications Electives

COM 110

COM 120

COM 231

³Math Electives

MAT 140

MAT 161

⁴Humanities/Fine Arts Electives

ART 114 ENG 262

ART 115 MUS 110

ENG 231 MUS 210

ENG 232 PHI 240

ENG 241 REL 211

ENG 242 REL 212

ENG 261

Business Administration

Human Resources Management Concentration

A 25 12 C

Associate in Applied Science

Contact: (336) 334-4822, ext. 50085

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-education base for life-long learning. Students will be prepared for employment opportunities in personnel, training, and other human resources development areas.

Students will be required to use technology (computer, internet, etc.) in all courses in this program.

Program Outcomes

Upon successful completion of the Business Administration, Human Resources Management Concentration, the graduate should be able to:

- Evaluate organizational employment policies for compliance with the law
- Design, training programs that meet the needs of a company
- Recruit employees who match position requirements and fulfill organizational objectives
- Design a compensation system that meets the needs of employers by retaining good employees.

Fall Semester I			Credits
ACA	111	College Student Success	1
ACC	120	Principles of Financial Accounting	4
BUS	110	Introduction to Business	3
ENG	111	Expository Writing	3
CIS	110	Introduction to Computers	3
—	—	Math Elective ¹	1
Total			17

Spring Semester I			Credits
ACC	121	Principles of Managerial Accounting	4
ACC	149	Intro to Accounting Spreadsheets	2
BUS	115	Business Law	3
BUS	234	Training and Development	3
—	—	Second English Elective ²	3
Total			15

Summer Semester I			Credits
BUS	240	Business Ethics	3
ECO	252	Principles of Macroeconomics	3
MKT	120	Principles of Marketing	3
Total			9

Fall Semester II

BUS	258	Compensation and Benefits	3
BUS	217	Employment Law and Regulations	3
BUS	256	Recruit Select and Per Plan	3
—	—	Communication Elective ³	3
ECO	251	Principles of Microeconomics	3
Total			15

Spring Semester II

BUS	137	Principles of Management	3
BUS	151	People Skills	3
BUS	259	HRM Applications	3
—	—	Humanities/Fine Arts Elective ⁴	3
Total			12

Total credit hours required for degree: 68

¹Math Electives

MAT 140 MAT 161

²Second English Electives

ENG 112 ENG 114

³Communications Electives

COM 110 COM 120 COM 231

⁴Humanities/Fine Arts Electives

ART 114	ENG 232	ENG 261	MUS 210	REL 212
ART 115	ENG 241	ENG 262	PHI 240	
ENG 231	ENG 242	MUS 110	REL 211	

Business Administration

Human Resources Management Concentration

A 25 12 C-C1

Certificate

This certificate is designed to equip the business professional with basic skills in human resources. Topics covered include recruitment, employment law and training and development.

Program Outcomes:

Upon completion of Human Resource Management Concentration certificate, the graduate should be able to:

- Apply employment law in an organization effectively
- Implement a training program within an organization that meets the needs of that organization
- Recruit employees that meet the need of their employer
- Retain good employees through the use of good compensation practices

Fall Semester I			Credits
BUS	153	Intro to Human Resource Mgt	3
BUS	217	Employment Law and Regulations	3
BUS	256	Recruit Select and Per Plan	3
Total			9

Spring Semester I			Credits
BUS	151	People Skills	3
BUS	234	Training and Development	3
BUS	258	Compensation and Benefits	3
Total			9

Total credit hours required for certificate: 18

Carpentry

D 35 18 0

Diploma

Contact: (336) 334-4822, ext. 53086

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 apply technical knowledge and skills to layout, cut, fabricate, erect, install, and repair wooden structures and fixtures, using hand and power tools. Includes instruction in technical mathematics, framing, construction materials and selection, job estimating, print reading, foundations and roughing-in, finish carpentry techniques, and applicable codes and standards.

Students enrolled in this program may be required to travel “to and from” job sites, associated with required “hands on” laboratory work. Students may be required to arrive on campus up to 30 minutes prior to class start times, to accommodate travel.

Program Outcomes

Upon successful completion of the Carpentry Diploma, the graduate should be able to:

- Demonstrate proficiency in building construction methods
- Perform quantity take-offs and cost estimates for a small building project
- Apply NC Building Codes to building project
- Apply the required safety standards in construction
- Demonstrate strong employability skills (teamwork, communication, and critical thinking)

Fall Semester I			Credits
CAR	110	Introduction to Carpentry	2
CAR	111	Carpentry I	8
ISC	115	Construction Safety	2
BPR	130	Print Reading/Construction	3
MAT	101	Applied Mathematics	3
Total			18

Spring Semester I

CAR	112	Carpentry II	8
CAR	115	Residential Planning/Estimating	3
ENG	102	Applied Communications II	3
Total			14

Summer Semester I

CAR	113	Carpentry III	6
CMT	120	Codes and Inspections	3
Total			9

Total credit hours required for diploma: 41

Civil Engineering Technology

A 40 14 0

Associate in Applied Science

Contact: (336) 334-4822, ext. 53034

These curriculums are designed to prepare students through the study and application of principles from mathematics, natural sciences, and technology and applied processes based on these subjects.

Course work includes mathematics, natural sciences, engineering sciences and technology.

A course of study that prepares students to use basic engineering principles and technical skills to carry out planning, documenting and supervising tasks in sustainable land development and public works and facilities projects. Includes instruction in the communication and computational skills required for materials testing, structural testing, field and laboratory testing, site analysis, estimating, project management, plan preparation, hydraulics, environmental technology, and surveying. Graduates should qualify for technician-level jobs with both public and private engineering, construction, and surveying agencies.

Graduates should qualify to obtain occupations such as technical service providers, materials and technologies testing services, engineering technicians, construction technicians and managers, industrial and technology managers, or research technicians.

Program Outcomes:

Upon successful completion of the Civil Engineering Technology degree, graduate should be able to:

- Produce engineering documents using appropriate techniques and skills.
- Determine forces and stress of elementary structural systems using appropriate mathematics, science, and engineering principles.
- Conduct standard civil field and laboratory tests and measurements and analyze the yielded data and provide technical reports.
- Apply surveying methods for land measurements and/or construction layout.
- Use of software to solve civil problems and develop material quantities.
- Think critically about technical problems, communicates effectively, and performs as a responsible professional

Fall Semester I			Credits
CEG	151	CAD for Engineering Technology	3
CEG	210	Construction Materials and Methods	3
EGR	115	Introduction to Technology	3
ENG	111	Expository Writing	3
—	—	Humanities/Fine Arts Elective ²	3
—	—	Math Elective 1 ³	3
Total			18

Spring Semester I			
EGR	250	Statics/Strength of Materials	5
PHY	131	Physics - Mechanics	4
SRV	110	Surveying I	4
—	—	Math Elective 2 ³	3
Total			16

Summer Semester I			
CIV	111	Soils and Foundations	4
SRV	111	Surveying II	4
Total			8

Fall Semester II			
CIV	125	Civil/Surveying CAD	3
CEG	211	Hydrology & Erosion Control	3
CIV	230	Construction Estimating	3
CIV	215	Highway Technology	3
—	—	Communication Elective ⁴	3
—	—	Social/Behavioral Science Elective ⁵	3
Total			18

Spring Semester II			
CEG	111	Intro to GIS and GNSS	4
CEG	212	Intro to Environmental Technology	3
CIV	240	Project Management	3
—	—	Civil Engineering Technical Elective ¹	2-3
Total			12-13

Total credit hours required for degree: 72-73

¹Civil Engineering Technology Technical Electives

Choose 2-3 hours from:

CIV 220
CIV 222
CIV 221
CIV 250
COE 111
COE 112

²Humanities/Fine Arts Electives

HUM 110
HUM 115

³Math Electives

Choose 1 Set:

MAT 121 and MAT 122
MAT 171 and MAT 172
MAT 175 and MAT 271

⁴Communications Electives

COM 110
COM 120
COM 231
ENG 114

⁵Social/Behavioral Science Electives

PSY 150
SOC 210

Collision Repair & Refinishing Technology

A 60 13 0

Associate in Applied Science

Contact: (336) 334-4822, ext. 50061

The Collision Repair & Refinishing Technology curriculum provides training in the use of equipment and materials of the autobody repair trade. The student studies the construction of the automobile body and techniques for autobody repairing, and refinishing.

Course work will include autobody fundamentals, industry overview, and safety. Students will perform structural and non-structural repairs using MIG welding, plastics and adhesives, and a variety of paints and finishes.

Graduates should qualify for a degree, diploma, or certificate in Collision Repair & Refinishing Technology and will be able to seek entry-level employment in the automotive body and refinishing industry. Persons completing this curriculum may find employment with franchised independent garages, dealerships, race teams, truck companies, glass shops, boat shops, or may seek self-employment.

Program Outcomes:

Upon successful completion of the Collision Repair & Refinishing degree, the graduate should be able to:

- Perform structural analysis and damage repairs
- Perform non-structural analysis and damage repairs
- Refinish vehicles or vehicle components
- Read repair estimates
- Write repair estimates
- Repair plastics and adhesives
- Replace vehicle components

Fall Semester I			Credits
AUB	111	Painting and Refinishing I ¹	4
AUB	121	Non-Structural Damage I	3
AUB	131	Structural Damage I	4
AUB	134	Autobody MIG Welding	3
ENG	111	Expository Writing	3
Total			17

Spring Semester I			Credits
AUB	112	Painting and Refinishing II	4
AUB	122	Non-Structural Damage II	4
MAT	115	Mathematical Models	3
AUB	136	Plastics and Adhesives	3
AUB	162	Autobody Estimating ²	2
Total			16

Summer Semester I

AUB	114	Special Finishes	2
AUB	132	Structural Damage II	4
Total			6

Fall Semester II

AUT	110	Introduction to Auto Technology	3
AUT	161	Basic Auto Electricity	5
ENG	114	Prof Research and Reporting	3
—	—	Humanities/Fine Arts Elective	3
Total			14

Spring Semester II

AUT	151	Brake Systems	3
AUT	151A	Brake Systems Lab	1
AUT	171	Automotive Climate Control	4
COM	120	Interpersonal Communication	3
-	-	Social/Behavioral Science Elective	3
Total			14

Summer Semester I

AUT	141	Suspension and Steering Systems	3
AUT	141A	Suspension and Steering Lab	1
Total			4

Total credit hours required for degree: 71

¹AUB 121 Non-Structural Damage I is a Co-requisite for AUB 111 Painting and Refinishing, AUB 122 Non-Structural Damage II, and AUB 136 Plastics and Adhesives.

²COE 112 or (COE 111 and COE 121) may be substituted for AUB 162 with instructor approval.

Collision Repair & Refinishing Technology

A 60 13 D1

Diploma

This diploma program prepares students for employment in the Collision Repair & Refinishing industry as collision repair specialists. Students are introduced to automobile body construction, techniques in auto-body repair and refinishing, and proper use of equipment and materials commonly used in the automotive collision repair industry.

Program Outcomes:

Upon successful completion of the Collision Repair & Refinishing diploma, the graduate should be able to:

- Perform structural analysis and damage repair
- Perform non-structural analysis and damage repairs
- Refinish vehicles or vehicle components
- Perform MIG welding as it applies to automotive structures

Fall Semester I			Credits
AUB	111	Painting and Refinishing I	4
AUB	121	Non-Structural Damage I	3
AUB	131	Structural Damage I	4
AUB	134	Autobody MIG Welding	3
ENG	102	Applied Communications ¹	3
Total			17

Spring Semester I

AUB	112	Painting and Refinishing II	4
AUB	122	Non-Structural Damage II	4
MAT	101	Applied Mathematics I ¹	3
AUB	136	Plastics and Adhesives	3
AUB	162	Autobody Estimating ²	2
Total			16

Summer Semester I

AUB	114	Special Finishes	2
AUB	132	Structural Damage II	4
Total			6

Total credit hours required for diploma: 39

¹Students seeking the Associates Degree in Collision Repair and Refinish Technology should take ENG 111 and MAT 115.

²COE 112 or (COE 111 and COE 121) may be substituted for AUB 162 with instructor approval.

Collision Repair & Refinishing Technology

A 60 13 0 C1

Certificate

This certificate program provides introductory training for students interested in careers in the Collision Repair & Refinishing industry. Students completing the certificate program are qualified for employment as entry level collision repair apprentices.

Program Outcomes:

Upon successful completion of the Collision Repair & Refinishing certificate, the graduate should be able to:

- Perform structural and damage repair
- Perform non-structural analysis and damage repairs
- Refinish vehicles or vehicle components
- Perform MIG welding as it applies to automotive structures

Fall Semester I			Credits
AUB	111	Painting and Refinishing I1	4
AUB	121	Non-Structural Damage I	3
AUB	131	Structural Damage I	4
AUB	134	Autobody MIG Welding	3
Total			14

Total credit hours required for certificate: 14

¹AUB 121 Non-Structural Damage I is a co-requisite for AUB 111 Painting and Refinishing, AUB 122 Non-Structural Damage II, and AUB 136 Plastics and Adhesives.

Computer Information Technology

A 25 26 0

Associate in Applied Science

Contact: (336) 334-4822, ext. 50325

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 systems needs.

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

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

Program Outcomes:

Upon completion of the Computer Information Technology degree, students should be able to:

- Analyze the technical needs of end-users
- Use appropriate application software to fulfill business requirements
- Design a program to meet end-user specifications
- Code a program to meet end-user specifications
- Develop a relational database
- Assess various network topologies
- Identify basic security threats
- Design a website using industry standard tools
- Explain the difference between various common operating systems
- Examine various hardware components and their purpose.

Fall Semester I			Credits
CIS	110	Introduction to Computers	3
ENG	111	Expository Writing	3
CTS	115	Info Sys Bus Concepts	3
NET	110	Networking Concepts	3
COM	120	Intro to Interpersonal Comm	3
Total			15

Spring Semester I

CTS	120	Hardware/Software Support	3
NOS	110	Operating System Concepts	3
WEB	110	Internet/Web Fundamentals	3
MAT	140	Survey of Mathematics	3
—	—	Humanities/Fine Arts Elective ²	3
Total			15

Summer Semester I

DBA	110	Database Concepts	3
CIS	115	Intro to Programming & Logic	3
Total			6

Fall Semester II

NOS	120	Linux/UNIX Single User	3
CTS	285	Systems Analysis & Design	3
NOS	130	Windows Single User	3
SEC	110	Security Concepts	3
—	—	CIT Technical Elective ¹	3
Total			15

Spring Semester II

CTS	289	System Support Project	3
NOS	230	Windows Admin I	3
—	—	CIT Technical Elective ¹	3
—	—	CIT Technical Elective ¹	3
—	—	Social/Behavioral Science Elective ³	3
Total			15

Total credit hours required for degree: 66

¹Computer Information Technology Technical Electives

Choose 9 credits from:

CTI 140	CTS 230
CTI 141	CTS 287
CTI 150	DBA 120
CTI 240	NOS 150
CTI 241	NOS 220
CTS 130	SEC 150
CTS 210	SEC 160

²Humanities/Fine Arts Electives

ART 114	MUS 110
ART 115	PHI 240
DRA 111	REL 110
HUM 115	

³Social/Behavioral Science Electives

ECO 251	HIS 122
ECO 252	POL 120
HIS 111	PSY 150
HIS 112	SOC 210
HIS 121	

Gateway Courses: CTS 120 and NET 110: A minimum grade of C required in both.

Computer Information Technology - Basic

A 25 26 0 C4

Certificate

The Computer Information Technology--Basic certificate provides a student will prepared for the following external certification: CompTIA A+ Certification; Microsoft Office Specialist (MOS); Strata IT Fundamentals; and/or Certiport IC3.

CompTIA A+ Certification; CompTIA Linux; and Ubuntu Certified Professional. Job opportunities may include desktop support, help desk technician, and entry level IT or network support.

Program Outcomes:

Upon completion of the Computer Information Technology--Basic certificate, students should be able to:

- Analyze the technical needs of end-users
- Use appropriate application software to fulfill business requirements
- Assess various network topologies
- Identify basic security threats
- Explain the difference between various common operating systems
- Examine various hardware components and their purpose

Courses			Credits
CIS	110	Introduction to Computers	3
CTS	120	Hardware/Software Support	3
NET	110	Networking Concepts	3
NOS	110	Operating System Concepts	3
Total			12

Total credit hours required for certificate: 12

Operating Systems

A 25 26 0 C3

Certificate

The Operating Systems certificate prepares the student for the following external certification: CompTIA A+ Certification; CompTIA Linux; and Ubuntu Certified Professional. Job opportunities may include desktop support, help desk technician, and entry level IT support.

Program Outcomes:

Upon completion of the Operating Systems certificate, students should be able to:

- Analyze the technical needs of end-users
- Use appropriate application software to fulfill business requirements
- Explain the difference between various common operating systems
- Examine various hardware components and their purpose

Courses			Credits
CIS	110	Introduction to Computers	3
NOS	110	Operating System Concepts	3
NOS	120	Linux/Unix Single User	3
NOS	130	Windows Single User	3
Total			12

Total credit hours required for certificate: 12

Virtualization Administration

A 25 26 0 C5

Certificate

The Virtualization Certification prepares individuals for employment as System Administrators and related positions through the study and application of virtualization technologies. Students will learn how to virtualize servers and clients, utilize cloud technologies, create storage solutions, and deploy thin applications for large, medium, and small organizational networks.

The primary emphasis of this certification program will provide you with the knowledge and skills to deploy and manage a server virtualization environment using various technologies (such as Hyper-V and Windows Server).

Program Outcomes:

Upon completion of Virtualization Administration certificate, the graduate should be able to:

- Analyze the technical needs of end-users
- Use appropriate server-side software to fulfill business requirements
- Assess various virtualization solutions
- Identify basic virtualization architectures

Courses			Credits
CTI	140	Virtualization Concepts	3
CTI	141	Cloud & Storage Concepts	3
CTI	240	Virtualization Admin I	3
CTI	241	Virtualization Admin II	3
Total			12

Total credit hours required for certificate: 12

Computer Integrated Machining

A 50 21 0

Associate in Applied Science

Contact: (336) 334-4822, ext. 53088

The Computer Integrated Machining (CIM) 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.

Program Outcomes:

Upon successful completion of the Computer Integrated Machining program, the graduate should be able to:

- Write CNC code for machined parts
- Complete CNC machine setups
- Complete projects using milling machines, bench grinders, power saws, lathes, drill press, and surface grinders
- Complete drawings to develop CAD/CAM and CNC programs
- Produce rapid prototyping models
- Use industry standards to determine the quality of manufactured parts

Fall Semester I			Credits
BPR	111	Print Reading	2
COM	120	Intro to Interpersonal Comm	3
DFT	119	Basic CAD	2
MAC	111	Machining Technology I	6
MAC	114	Introduction to Metrology	2
MAC	151	Machining Calculation	2
Total			17

Spring Semester I

MAC	112	Machining Technology II	6
MAC	121	Introduction to CNC	2
MAC	122	CNC Turning	2
MAC	124	CNC Milling	2
BPR	121	Blueprint Reading: Mechanical	2
MEC	110	Introduction to CAD/CAM	2
ENG	111	Expository Writing	3
Total			19

Summer Semester I

MAC	113	Machining Technology III	6
Total			6

Fall Semester II

—	—	Social/Behavioral Science Elective	3
—	—	Math Elective ²	3
MEC	231	CAM I	3
MAC	222	Advanced CNC Turning	2
—	—	Humanities/Fine Arts Elective	3
Total			14

Spring Semester II

MAC	248	Production Procedures	2
—	—	CIM Technical Elective ¹	2
ENG	114	Professional Research and Reporting	3
MEC	232	CAM II	3
MAC	224	Advanced CNC Milling	2
Total			12

Total credit hours required for degree: 68

¹Computer Integrated Machining (CIM) Technical Electives

Choose 1 course from:

ISC 112
MAC 115
MAC 152
MAC 214
MAC 229
MEC 142
WLD 112

²Math Electives

MAT 120
MAT 121

Computer Integrated Machining

A 50 21 0 D1

Diploma

The Computer Integrated Machining Diploma program 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), blueprint interpretation, introductory computerized numeric control (CNC) equipment, and precision measurements. Graduates should qualify for employment as machining technicians in manufacturing, specialty machine shops, fabrication industries, and high-tech or emerging industries such as aerospace, aviation, medical, and renewable energy, and able to acquire machining certification examinations.

Program Outcomes:

Upon successful completion of the Computer Integrated Machining diploma, the graduate should be able to:

- Write CNC code for machined parts
- Apply CNC code to operate CNC lathes & CNC mills
- Complete projects using milling machines, bench grinders, power saws, lathes, drill presses, and surface grinders
- Produce rapid prototyping models
- Students completing this diploma will acquire a minimum of 2 (possibly 10) National Institute for Metalworking Skills (NIMS).

Fall Semester I			Credits
BPR	111	Print Reading	2
COM	120	Intro to Interpersonal Communication	3
MAC	111	Machining Technology I	6
MAC	114	Introduction to Metrology	2
DFT	119	Basic CAD	2
MAC	151	Machining Calculations	2
Total			17

Spring Semester I			
MAC	112	Machining Technology II	6
MAC	121	Introduction to CNC	2
MAC	122	CNC Turning	2
MAC	124	CNC Milling	2
BPR	121	Blueprint Reading: Mechanical	2
MAT	120	Geometry & Trigonometry	3
Total			17

Summer Semester I			
MAC	113	Machining Technology III	6
MAC	115	Grinding Operations	3
Total			9

Total credit hours required for diploma: 43

Basic Conventional Machining

A 50 21 0 C1

Certificate

The Basic Conventional Machining Certificate introduces students to manual machining, both lathes and mills. The students will learn blueprint reading, machining calculations, and the measuring tools (metrology) used in the industry.

Program Outcomes:

Upon successful completion of the Basic Conventional Machining certificate, the graduate should be able to:

- Complete projects using milling machines, bench grinders, power saws, lathes, and drill presses
- Produce rapid prototyping models
- Complete computer-aided drafting projects
- Students completing this certificate will acquire a minimum of 2 National Institute for Metalworking Skills (NIMS).

Fall Semester I			Credits
MAC	111	Machining Technology I	6
BPR	111	Print Reading	2
MAC	114	Introduction to Metrology	2
Total			10

Spring Semester I			
MAC	151	Machining Calculations	2
MAC	121	Introduction to CNC or	2
DFT	119	Basic CAD	(2)
Total			4

Total credit hours required for certificate: 14

Intermediate Conventional Machining

A 50 21 0 C2

Certificate

The Intermediate Conventional Machining Certificate continues where the Basic Conventional Certificate ended. The students further their manual machining skills by learning fixtures, indexing, rotary work, group projects and surface grinding.

Program Outcomes:

Upon successful completion of the Intermediate Conventional Machining certificate, the graduate should be able to:

- Complete advanced projects using milling machines, bench grinders, power saws, lathes, and drill presses
- Students completing this certificate will acquire a minimum of up to 2 National Institute for Metalworking Skills (NIMS).

Spring Semester I			Credits
MAC	112	Machining Technology II	6
Total			6

Summer Semester I			
MAC	113	Machining Technology III	6
Total			6

Total credit hours required for certificate: 12

CNC Setup

A 50 21 0 C3

Certificate

The CNC Setup Certificate introduces the students to CNC machine setups and programming for both lathes and mills.

Program Outcomes:

Upon successful completion of the CNC Setup certificate, the graduate should be able to:

- Write CNC code for machined parts
- Apply CNC code to operate/setup CNC lathes & CNC mills
- Produce rapid prototyping models
- Apply basic CAD/CAM techniques to produce CNC parts
- Students completing this certificate will acquire a minimum of up to 2 National Institute for Metalworking Skills (NIMS).

Fall Semester I			Credits
MAC	229	CNC Programming	2
MAC	248	Production Procedures	2
BPR	111	Print Reading	2
MEC	110	Introduction to CAD/CAM	2
MAC	121	Introduction to CNC	2
Total			10

Spring Semester I			
DFT	119	Basic CAD	2
MAC	122	CNC Turning	2
MAC	124	CNC Milling	2
MAC	151	Machining Calculation	2
Total			8

Total credit hours required for certificate: 18

CNC Operator

A 50 21 0 C4

Certificate

The CNC Operator Certificate prepares the student for introductory work into the CNC field as a CNC operator. The student will learn basic code and operations of CNC mills and lathes.

Program Outcomes:

Upon successful completion of the CNC Operator certificate, the graduate should be able to:

- Write CNC code for machined parts
- Apply CNC code to operate/setup CNC lathes & CNC mills
- Complete projects using milling machines, bench grinders, power saws, lathes, and drill presses
- Produce rapid prototyping models
- Complete computer-aided drafting projects
- Students completing this certificate will acquire a minimum of up to 2 National Institute for Metalworking Skills (NIMS).

Fall Semester I			
BPR	111	Print Reading	2
MAC ¹	111	Machining Technology I	6
MAC	114	Introduction to Metrology	2
MAC	121	Introduction to CNC	2
DFT	119	Basic CAD	2
Total			14

Spring Semester I			
MAC	122	CNC Turning	2
MAC	124	CNC Milling	2
Total			4

Total credit hours required for certificate: 18

¹ Students may substitute MEC 111 for MAC 111.

Computer Programming

A 25 13 0

Associate in Applied Science

Contact: (336) 334-4822, ext. 50325

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

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

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

Program Outcomes:

Upon completion, students should be able to:

- Analyze the technical needs of end-users
- Analyze a problem using the Software Development Life Cycle
- Design a program to meet end-user specifications
- Code a program to meet end-user specifications
- Develop a program that integrates with a relational database
- Develop a program that incorporates Object-Oriented programming methodologies
- Develop a programming solution within a 3-tier architecture
- Identify inefficiencies in programming practices
- Select an appropriate programming language to most effectively meet project requirements
- Examine emerging technologies within the industry

Fall Semester I			Credits
CIS	110	Introduction to Computers	3
CIS	115	Intro to Prog & Logic	3
MAT	140	Survey of Mathematics	3
NOS	110	Operating System Concepts	3
ENG	111	Expository Writing	3
Total			15

Spring Semester I			Credits
CSC	139	Visual BASIC Prog	3
CTS	115	Info Sys Bus Concepts	3
NET	110	Networking Concepts	3
COM	120	Intro to Interpersonal Communication	3
—	—	Social/Behavior Science Elective ³	3
Total			15

Summer Semester I

DBA	110	Database Concepts	3
SEC	110	Security Concepts	3
Total			6

Fall Semester II

CSC	239	Adv Visual BASIC Prog	3
CSC	151	JAVA Programming	3
CTS	285	Systems Analysis & Design	3
NOS	120	Linux/UNIX Single User	3
—	—	Computer Programming Technical Elective ¹	3
Total			15

Spring Semester II

CSC	289	Programming Capstone Project	3
DBA	120	Database Programming I	3
CSC	251	Adv JAVA Programming	3
—	—	Computer Programming Technical Elective ¹	3
—	—	Computer Programming Technical Elective ¹	3
—	—	Humanities/Fine Arts Elective ²	3
Total			18

Total credit hours required for degree: 69

¹Computer Programming Technical Electives

Choose 9 credits from:

CSC 134	WEB 110
CSC 153	WEB 125
CSC 234	WEB 151
CSC 253	WEB 141
CSC 258	WEB 180
DBA 115	NOS 130

²Humanities/Fine Arts Electives

ART 114	MUS 110
ART 115	PHI 215
DRA 111	REL 110
HUM 115	PHI 240

³Social/Behavioral Science Electives

ECO 251	HIS 122
ECO 252	POL 120
HIS 111	PSY 150
HIS 112	SOC 210
HIS 121	

Gateway Courses: CIS 115 and CSC 139. A minimum grade of C required in both.

Visual Basic Programming

A 25 13 0 C1

Certificate

The Visual Basic Programming Certificate focuses on the principles and practices necessary to design, develop, and deploy web applications using the Visual Basic interactive development environment (IDE). Graduates will be able to build real-world Visual Basic applications based on the knowledge and skills gained in the program. This program prepares the learner to seek entry-level career positions such as: Programmer, Web Database Developer, Visual Basic Developer, and .NET Developer. Graduates will be able to apply and use Object Oriented Programming (OOP) and Visual Basic to develop stand-alone and web-based applications with database connectivity.

Program Outcomes:

Upon completion of Visual Basic Programming certificate, the graduate should be able to:

- Analyze the technical needs of end-users
- Design a program in Visual Basic.NET to meet end-user requirements
- Develop a program that integrates with a relational database
- Develop a program that incorporates Object-Orientated programming methodologies

Courses			Credits
CIS	110	Introduction to Computers	3
CIS	115	Intro to Prog & Logic	3
CSC	139	Visual BASIC Prog	3
CSC	239	Adv Visual BASIC Prog	3
Total			12

Total credit hours required for certificate: 12

JAVA Programming

A 25 13 0 C2

Certificate

The Java Programming Certificate focuses on the principles and practices necessary to design, develop, and deploy applications using a Java interactive development environment (IDE). Graduates will be able to build real-world Java applications based on the knowledge and skills gained in the program. This program prepares the learner to seek entry-level career positions such as: Programmer, Web Database Developer and Java Developer. Graduates will be able to apply and use Object Oriented Programming (OOP) and Java to develop stand-alone and web-based applications with database connectivity.

Program Outcomes:

Upon completion of JAVA Programming certificate, the graduate should be able to:

- Analyze the technical needs of end-users
- Design a program in JAVA to meet end-user requirements
- Develop a program that integrates with a relational database
- Develop a program that incorporates Object-Orientated programming methodologies

Courses			Credits
CIS	110	Introduction to Computers	3
CIS	115	Intro to Prog & Logic	3
CSC	151	JAVA Programming	3
CSC	251	Adv JAVA Programming	3
Total			12

Total credit hours required for certificate: 12

C++ Programming

A 25 13 0 C3

Certificate

The C++ Programming Certificate focuses on the principles and practices necessary to design, develop, and deploy applications using a C++ interactive development environment (IDE). Graduates will be able to build real-world C++ applications based on the knowledge and skills gained in the program. This program prepares the learner to seek entry-level career positions such as: Programmer, Web Database Developer and C++ Developer. Graduates will be able to apply and use Object Oriented Programming (OOP) and C++ to develop stand-alone and web-based applications with database connectivity.

Program Outcomes:

Upon completion of C++ Programming certificate, the graduate should be able to:

- Analyze the technical needs of end-users
- Design a program in C++ to meet end-user requirements
- Develop a program that integrates with a relational database
- Develop a program that incorporates Object-Orientated programming methodologies

Courses			Credits
CIS	110	Introduction to Computers	3
CIS	115	Intro to Prog & Logic	3
CSC	134	C++ Programming	3
CSC	234	Adv C++ Programming	3
Total			12

Total credit hours required for certificate: 12

C# Programming

A 25 13 0 C4

Certificate

The C# Programming Certificate focuses on the principles and practices necessary to design, develop, and deploy applications using a C#.NET interactive development environment (IDE). Graduates will be able to build real-world C# applications based on the knowledge and skills gained in the program. This program prepares the learner to seek entry-level career positions such as: Programmer, Web Database Developer and C# Developer. Graduates will be able to apply and use Object Oriented Programming (OOP) and C# to develop stand-alone and web-based applications with database connectivity.

Program Outcomes:

Upon completion of C# Programming certificate, the graduate should be able to:

- Analyze the technical needs of end-users
- Design a program in C# to meet end-user requirements
- Develop a program that integrates with a relational database
- Develop a program that incorporates Object-Orientated programming methodologies

Courses			Credits
CIS	110	Introduction to Computers	3
CIS	115	Intro to Prog & Logic	3
CSC	153	C# Programming	3
CSC	253	Adv C# Programming	3
Total			12

Total credit hours required for certificate: 12

.NET Programming

A 25 13 0 C6

Certificate

The .NET Programming Certificate focuses on the principles and practices necessary to design, develop, and deploy applications using the .NET interactive development environment (IDE). Graduates will be able to build real-world applications based on the knowledge and skills gained in the program through a variety of .NET programming languages. This program prepares the learner to seek entry-level career positions such as: Programmer, Web Database Developer and .NET Developer. Graduates will be able to apply and use Object Oriented Programming (OOP) and various .NET programming languages to develop stand-alone and web-based applications with database connectivity.

Program Outcomes:

Upon completion of .Net Programming certificate, the graduate should be able to:

- Analyze the technical needs of end-users
- Design a program in multiple .NET languages to meet end-user requirements
- Develop a .NET solution that integrates with a relational database
- Develop a .NET program that incorporates Object-Orientated programming methodologies

Courses			Credits
CIS	115	Intro to Prog & Logic	3
CSC	139	Visual BASIC Prog	3
CSC	153	C# Programming	3
WEB	180	Active Server Pages	3
CSC	239	Adv Visual BASIC Prog <u>or</u>	3
CSC	253	Adv C# Programming	3
Total			18

Total credit hours required for certificate: 18

Computer Technology Integration Database Management Emphasis

A 25 50 0 A1

Associate in Applied Science

Contact: (336) 334-4822, ext. 50325

The Computer Technology Integration (CTI) curriculum prepares graduates for employment as designers, testers, support technicians, administrators, developers, or programmers with organizations that use computers to design, process, manage, and communicate information, depending on the technical path selected within this curriculum.

Course work includes development of a student's ability to communicate and solve technical issues related to information support and services, interactive media, network systems, programming and software development, and other emerging technologies based on the selected area of study.

Graduates should qualify for employment in entry-level positions with businesses, educational systems, and governmental agencies which rely on computer systems to design and manage information. The program will incorporate the competencies of industry-recognized certification exams.

Database Management Emphasis

The Database Administration emphasis area prepares graduates for employment with organizations that use database management system software to process, manage, and communicate information. Additionally, this emphasis area provides the student with a foundation to begin professional certification with Microsoft SQL Server or ORACLE database systems. Course work includes terminology and design, database administration, backup and recovery, SQL performance and tuning, database programming and tools, and various related topics. Studies will provide an opportunity for students to implement, support, and manage industry standard database systems. Graduates should qualify for a wide variety of database and computer related entry-level positions that provide opportunities for advancement with increasing experience and ongoing training.

Program Outcomes

Upon successful completion of the Computer Integration Technology/ Database Management Emphasis degree, the graduate should be able to:

- Analyze the technical needs of end-users
- Use appropriate database software solutions to fulfill business requirements
- Design a database to meet end-user specifications
- Develop a relational database
- Integrate administrative responsibilities within an RDBMS
- Examine the differences between different database systems
- Manage a database using SQL and/or PL/SQL

Fall Semester I			Credits
CIS	110	Introduction to Computers	3
DBA	110	Database Concepts	3
CTI	110	Web, Pgm, and Db Foundation	3
CTI	120	Network & Sec Foundation	3
WEB	110	Internet/Web Fundamentals	3
Total			15

Spring Semester I			
CIS	115	Intro to Programming & Logic	3
CIS	155	Database Theory/Analysis	3
CTS	115	Info Sys Bus Concepts	3
NOS	110	Operating System Concepts	3
WEB	140	Web Development Tools	3
Total			15

Summer Semester I			
ENG	111	Expository Writing	3
—	—	Humanities/Fine Arts Elective	3
—	—	Social/Behavioral Science Elective	3
Total			9

Fall Semester II			
DBA	120	Database Programming I	3
DBA	210	Database Administration	3
ENG	114	Professional Research and Reporting	3
MAT	140	Survey of Mathematics	3
WEB	250	Database Driven Websites	3
Total			15

Spring Semester II			
COM	120	Intro to Interpersonal Comm	3
CTS	120	Hardware/Software Support	3
DBA	230	Databases in Corp Environs	3
DBA	240	Database Analysis/Design	3
—	—	CIT: Database Mgt Technical Elective ¹	3
Total			15

Total credit hours required for degree: 69

¹CIT: Database Management Technical Electives

Choose 3 credits from:

CSC 139	NET 110
CSC 151	NOS 120
CSC 153	NOS 130

Computer Technology Integration

Mobile Device Development Emphasis

A 25 50 0 A3

Associate in Applied Science

Contact: (336) 334-4822, ext. 50325

The Mobile Device Development emphasis prepares students for entry-level jobs and entrepreneurship opportunities in today's 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 applications. The program develops skills through practical application of current and emerging standards and technologies across multiple mobile devices. Graduates should qualify for employment as web/mobile designers and/or developers, computer programmers, and app developers.

Program Outcomes

Upon successful completion of the CIT: Mobile Device Development Emphasis, the graduate should be able to:

- Develop mobile applications using third party application tools for various mobile devices
- Modify and test existing applications for mobile use
- Design, customize and enhance mobile applications
- Modify existing mobile apps for better performance

Fall Semester I			Credits
CIS	110	Introduction to Computers	3
CIS	115	Intro to Programming & Logic	3
CTI	110	Web, Pgm, and Db Foundation	3
CTI	120	Network & Sec Foundation	3
WEB	110	Internet/Web Fundamentals	3
Total			15

Spring Semester I			Credits
WEB	125	Mobile Web Design	3
WEB	141	Mobile Interface Design	3
—	—	CIT: Mobile Device Dev. Technical Elective ¹	3
NOS	110	Operating System Concepts	3
CTS	115	Info Sys Bus Concepts	3
Total			15

Summer Semester I			Credits
ENG	111	Expository Writing	3
—	—	Humanities/Fine Arts Elective	3
—	—	Social/Behavioral Science Elective	3
Total			9

Fall Semester II			Credits
CSC	151	Java Programming	3
ENG	114	Professional Research and Reporting	3
ETR	270	Entrepreneurship Issues	3
GIS	111	Introduction to GIS	3
WEB	151	Mobile Application Dev I	3
Total			15

Spring Semester II

COM	120	Intro to Interpersonal Comm	3
CTS	120	Hardware/Software Support	3
CSC	251	Advanced Java Programming	3
MAT	140	Survey of Mathematics	3
WEB	251	Mobile Application Dev II	3
Total			15

Total credit hours required for degree: 69

¹CIT: Mobile Device Development Technical Electives

Choose 3 credits from:

CSC 134	WEB 180
CSC 139	WEB 214
CSC 153	DBA 110

Mobile Programming

A 25 50 0 C1

Certificate

The Mobile Programming Certificate focuses on the principles and practices necessary to design, develop, and deploy mobile applications for iPhone and Android based devices. In the Mobile Programming Certificate, you will learn the skills needed to program applications that run natively on mobile devices. You will receive technical training, which will teach various programming languages needed for mobile platforms. In addition, this certificate will give the student the theoretical knowledge that will help make good decisions in the development, design, testing, and marketing process with mobile applications.

Program Outcomes:

Upon completion of Mobile Programming certificate, the graduate should be able to:

- Analyze the technical needs of end-users
- Design an interface for a mobile program using Android and iOS to meet end-user requirements
- Develop a mobile program that integrates with a relational database
- Develop a mobile program that incorporates Object-Orientated programming methodologies

Courses			Credits
CIS	115	Intro to Prog & Logic	3
WEB	141	Mobile Interface Design	3
WEB	151	Mobile Application Dev. I	3
WEB	251	Mobile Application Dev. II	3
Total			12

Total credit hours required for certificate: 12

Construction Management Technology

A 35 19 0

Associate in Applied Science

Contact: (336) 334-4822, ext. 53086

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.

Program Outcomes

Upon successful completion of the Construction Management Technology degree, the graduate should be able to:

- Demonstrate the basic skills to be a supervisor in the construction industry
- Supervise safety at a construction jobsite and qualify for OSHA 30-HR Training Certificate
- Create schedules, budgets, and plans for a construction project
- Interpret construction blueprints
- Estimate material for a small building project
- Apply NC Building Codes to a building project

Students enrolled in this program may be required to travel "to and from" job sites, associated with required "hands on" laboratory work. Students may be required to arrive on campus up to 30 minutes prior to class start times, to accommodate travel.

Fall Semester I			Credits
CMT	210	Construction Management Fund	3
BPR	130	Print Reading/Construction	3
SST	140	Green Building and Design Concepts	3
—	—	Math Elective ²	3
ENG	111	Expository Writing	3
—	—	Specialization Elective ¹	2-3
Total			17-18

Spring Semester I			
—	—	Communication Elective ³	3
CMT	212	Total Safety Performance	3
ACC	120	Principles of Financial Accounting	4
—	—	Specialization Elective ¹	2-3
CIS	111	Basic PC Literacy	2
Total			14-15

Summer Semester I			
COE	111	Co-op Work Experience	1
CAR	115	Residential Planning/Estimating or	3
PLU	160	Plumbing Estimating	(2)
—	—	Specialization Elective ¹	2-4
Total			6-8

Fall Semester II			
ARC	112	Construction Materials and Methods	4
CMT	120	Codes and Inspections	3
CMT	214	Planning and Scheduling	3
CMT	218	Human Relations Issues	3
CIV	230	Construction Estimating	3
—	—	Specialization Elective ¹	2-3
Total			18-19

Spring Semester II			
CMT	216	Costs and Productivity	3
SPA	120	Spanish for the Workplace	3
—	—	Specialization Elective ¹	3-4
—	—	Humanities/Fine Arts Elective ⁴	3
—	—	Social Science Elective ⁵	3
Total			15-16

Total credit hours required for degree: 70

¹Construction Management Technology Specialization Elective

Choose 11-17 credit hours from one of three areas of specialization.

- ARC 111, ARC 113, ARC 114, ARC 160, ARC 211, ARC 221
- CAR 110, CAR 111, CAR 112, CAR 113
- EGR 115, CEG 211, CIV 240, SRV 110, CIV 125, CIV 210

Students must select options from only one specialty area unless otherwise approved by the department chair.

²Mathematics Electives

MAT 110, MAT 115, MAT 120, MAT 121, MAT 140

³Communications Electives

COM 110, COM 120, COM 231, ENG 114

⁴Humanities/Fine Arts Electives

HUM 110, HUM 115, HUM 230, PHI 230, PHI 240

⁵Social/Behavioral Science Electives

ECO 251, PSY 150, SOC 210

Construction Management Technology

A 35 19 0 D1

Diploma

This curriculum is designed to prepare individuals for careers in the construction management field. Graduates should qualify for entry level positions in the field of construction management.

Program Outcomes:

Upon completion of Construction Management Technology diploma, the graduate should be able to:

- Supervise safety at a construction jobsite and qualify for OSHA 30-HR Training Certificate
- Create schedules, budgets, and plans for a construction project
- Interpret construction blueprints
- Estimate material for a small building project
- Apply NC Building Codes to a building project

Students enrolled in this program may be required to travel “to and from” job sites, associated with required “hands on” laboratory work. Students may be required to arrive on campus up to 30 minutes prior to class start times, to accommodate travel.

Fall Semester I			Credits
CMT	210	Construction Management Fund	3
BPR	130	Print Reading/Construction	3
MAT		Math Elective ²	3
COM		Communication Elective ³	3
—	—	Specialization Elective ¹	2-4
Total			13-16

Spring Semester I			
ACC	120	Principles of Financial Accounting	4
CMT	212	Total Safety Performance	3
CMT	216	Costs and Productivity	3
—	—	Specialization Elective ¹	2-4
Total			12-14

Summer Semester I			
COE	111	Co-op Work Experience	1
CAR	115	Residential Planning/Estimating <u>or</u>	3
PLU	160	Plumbing Estimating	(2)
Total			3-4

Fall Semester II			
CMT	214	Planning and Scheduling	3
CMT	218	Human Relations Issues	3
CIV	230	Construction Estimating	3
Total			9

Spring Semester II			
SPA	120	Spanish for the Workplace	3
CIS	111	Basic PC Literacy	2
Total			5

Total credit hours required for diploma: 43

¹Construction Management Technology Specialization Electives

Choose a minimum of 3-8 hours from one of the following 3 areas of specialization.

- ARC 111, ARC 113, ARC 114, ARC 160, ARC 211, ARC 221
- CAR 110, CAR 111, CAR 112, CAR 113
- EGR 115, CEG 211, CIV 240, SRV 110

Students must select options from only one specialty area unless otherwise approved by the department chair.

²Mathematics Electives

MAT 110	MAT 121
MAT 115	MAT 140
MAT 120	

³Communications Electives

COM 110
COM 120
COM 231
ENG 114

Cosmetology

A 55 14 0

Associate in Applied Science

Contact: (336) 334-4822, ext. 50055

Limited Enrollment Program:

Contact the Admissions Office for Program admission requirements and Program application deadlines.

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

Cosmetology Licensing Preparation Options

To qualify to sit for the licensing exam, students may choose to complete 1,200 hours of cosmetology instruction at GTCC and then serve a six-month apprenticeship in a licensed beauty salon, or complete 1,500 clock hours of instruction at GTCC.

Veterans and eligible recipients can be certified to receive VA educational assistance benefits for only those actual cosmetology hours required to sit for the state exam. Veterans and eligible recipients must take courses that equal 1,200 or 1,500 clock hours.

Program Outcomes:

Upon successful completion of the Cosmetology program, the graduate should be able to:

- Style hair according to accepted professional standards
- Perform manicures and pedicures according to accepted professional standards
- Provide skin care services according to accepted professional standards
- Restructure hair using chemical services according to accepted professional standards
- Market services and products
- Manage finances
- Provide a safe and sanitized environment.

Fall Semester I

Credits

COS	111	Cosmetology Concepts I	4
COS	112	Salon I	8
COS	250	Computerized Salon Operations	1
COM	120	Intro to Interpersonal Comm	3
Total			16

Spring Semester I

COS	113	Cosmetology Concepts II	4
COS	114	Salon II	8
COS	—	Elective	2
—	—	Social/Behavioral Science Elective	3
Total			17

Summer Semester I

COS	115	Cosmetology Concepts III	4
COS	116	Salon III	4
Total			8

Fall Semester II

COS	117	Cosmetology Concepts IV	2
COS	118	Salon IV	7
—	—	Cosmetology Technical Elective ¹	2
ENG	111	Expository Writing	3
—	—	Humanities/Fine Arts Elective	3
Total			17

Spring Semester II

ENG	114	Professional Research and Reporting	3
MAT	110	Mathematical Measurements	3
—	—	Cosmetology Technical Elective ¹	2
CIS	111	Basic PC Literacy	2
Total			10

Total credit hours required for degree: 68

¹Cosmetology Technical Electives

Choose 3 courses from:

- COS 223
- COS 224
- COS 240

OR a maximum of 9 hours with a BUS prefix

Cosmetology

A 55 14 0 D1

Diploma

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

Program Outcomes:

Upon completion of Cosmetology diploma, the graduate should be able to:

- Style hair according to accepted professional standards;
- Perform manicures and pedicures according to accepted professional standards
- Provide skin care services according to accepted professional standards
- Restructure hair using chemical services according to accepted professional standards
- Market services and finances
- Provide a safe and sanitized environment

Fall Semester I			Credits
COM	120	Intro to Interpersonal Communication	3
COS	111	Cosmetology Concepts I	4
COS	112	Salon I	8
COS	—	Elective	2
COS	250	Computerized Salon Operations	1
Total			18

Spring Semester I			Credits
COS	113	Cosmetology Concepts II	4
COS	114	Salon II	8
—	—	General Education Elective	3
Total			15

Summer Semester I			Credits
COS	115	Cosmetology Concepts III	4
COS	116	Salon III	4
Total			8

Total credit hours required for diploma: 41

Cosmetology

A 55 14 0 C1

Certificate

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, product knowledge, and other selected topics.

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

Program Outcomes:

Upon completion of Cosmetology certificate, the graduate should be able to:

- Style hair according to accepted professional standards;
- Perform manicures and pedicures according to accepted professional standards
- Provide skin care services according to accepted professional standards
- Restructure hair using chemical services according to accepted professional standards
- Provide a safe and sanitized environment

Fall Semester I			Credits
COS	111	Cosmetology Concepts I	4
COS	112	Salon I	8
Total			12

Spring Semester I			Credits
COS	113	Cosmetology Concepts II	4
COS	114	Salon II	8
Total			12

Summer Semester I			Credits
COS	115	Cosmetology Concepts III	4
COS	116	Salon III	4
Total			8

Total credit hours required for certificate: 32

Criminal Justice Technology

A 55 18 0

Associate in Applied Science

Contact: (336) 334-4822, ext. 50261

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

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

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

All students entering the Criminal Justice Technology curriculum, in a part-time or full-time capacity, should meet the special requirements as indicated on the curriculum brochure by the N.C. Criminal Justice Standards and the N.C. Sheriff's Standards Divisions of the N.C. Department of Justice. Students may not be convicted of any felony or specific misdemeanors. They cannot be convicted of any offense of moral turpitude. Examples of moral turpitude are, but are not limited to: rape, any sexual offense, indecent liberties, use, sale, or manufacture of controlled substances, or any offense which addresses public morality.

To be employed in this field, it is necessary to be a U.S. citizen.

Note: All or some of the courses in this program may transfer to a 4-year institution. Please see your advisor and/or transfer institution of interest.

Corrections Track

A 55 18 0 A1

Associate in Applied Science

The Corrections Track is designed for those who desire to work in a corrections related field.

Program Outcomes

- Upon successful completion the Criminal Justice Technology: Corrections Track degree, the graduate should be able to:
- Explain goals, processes and organizational components of the American Justice System.
- Apply statutory and case law to various legal scenarios.
- Evaluate causes of adult and juvenile delinquent behavior and motivations for criminal activity.
- Demonstrate detection, investigation, and enforcement procedures.
- Analyze ethical dilemmas as they apply to victims, suspects, and the public.
- Examine issues related to inmate management in a correctional setting

Fall Semester I

			Credits
ENG	111	Expository Writing	3
CJC	111	Introduction to Criminal Justice	3
CJC	112	Criminology	3
CJC	113	Juvenile Justice	3
CJC	131	Criminal Law	3
Total			15

Spring Semester I

—	—	Second English Elective ²	3
CJC	132	Courts and Evidence	3
CJC	141	Corrections	3
—	—	Criminal Justice Elective ¹	2-3
--	—	Social/Behavioral Science Elective	3
Total			14-15

Summer Semester I

CJC	120	Interviews/Interrogations	2
CJC	213	Substance Abuse	3
CJC	225	Crisis Intervention	3
Total			8

Fall Semester II

—	—	Communication Elective ³	3
CJC	221	Investigative Principles	4
CJC	231	Constitutional Law	3
CJC	233	Correctional Law	3
—	—	Nat. Sciences/Math. Elective	3-5
Total			16-18

Spring Semester II

—	—	Humanities/Fine Arts Elective	3
CJC	212	Ethics and Community Relations	3
CJC	214	Victimology	3
CJC	223	Organized Crime	3
—	—	Criminal Justice Elective ¹	2-3
Total			14-15

Total credit hours required for degree: 67-71

¹Criminal Justice Technical Electives

Choose 2 courses from:

CJC 114	CJC 121
CJC 122	CJC 161
CJC 162	CJC 163
CJC 211	CJC 215
CJC 222	CJC 232

²Second English Electives

ENG 112
ENG 114

³Communications Electives

COM 120
COM 231

Homeland Security Track

A 55 18 0 A2

Associate in Applied Science

The Homeland Security Track is designed for those who desire to work in more generalized areas of national security such as Transportation Security Administration (TSA).

Program Outcomes:

Upon successful completion the Criminal Justice Technology: Homeland Security track, the graduate should be able to:

- Explain goals, processes and organizational components of the American Justice System.
- Apply statutory and case law to various legal scenarios.
- Evaluate causes of adult and juvenile delinquent behavior and motivations for criminal activity.
- Demonstrate detection, investigation, and enforcement procedures.
- Analyze ethical dilemmas as they apply to victims, suspects, and the public.
- Explain the role of Homeland Security as it relates to terrorism response, intelligence gathering, and border security.

Fall Semester I			Credits
ENG	111	Expository Writing	3
CJC	111	Introduction to Criminal Justice	3
CJC	112	Criminology	3
CJC	113	Juvenile Justice	3
CJC	131	Criminal Law	3
Total			15

Spring Semester I			Credits
—	—	Second English Elective ²	3
CJC	132	Courts and Evidence	3
CJC	161	Introduction to Homeland Security	3
—	—	Criminal Justice Elective ¹	2-3
—	—	Social/Behavioral Science Elective	3
Total			14-15

Summer Semester I			Credits
CJC	120	Interviews/interrogations	2
CJC	213	Substance Abuse	3
—	—	Criminal Justice Elective ¹	2-3
Total			7-8

Fall Semester II			Credits
—	—	Communication Elective ³	3
CJC	162	Intelligence Analysis & Sec Mgmt	3
CJC	221	Investigative Principles	4
CJC	231	Constitutional Law	3
—	—	Nat. Sciences/Math. Elective	3-5
Total			16-18

Spring Semester II			Credits
—	—	Humanities/Fine Arts Elective	3
CJC	121	Law Enforcement Operations	3
CJC	163	Transportation and Border Security	3
CJC	212	Ethics and Community Relations	3
CJC	222	Criminalistics	3
Total			15

Total credit hours required for degree: 67-71

¹Criminal Justice Technical Electives

Choose 2 courses from:

CJC 114	CJC 122
CJC 141	CJC 211
CJC 214	CJC 215
CJC 223	CJC 225
CJC 232	CJC 233

²Second English Electives

ENG 112
ENG 114

³Communications Electives

COM 120
COM 231

Law Enforcement Track

A 55 18 0 A3

Associate in Applied Science

The Law Enforcement Track is designed for those who desire to work as law enforcement professionals or within a law enforcement organization.

Program Outcomes:

Upon successful completion the Criminal Justice Technology: Law Enforcement Track degree, the graduate should be able to:

- Explain goals, processes and organizational components of the American Justice System.
- Apply statutory and case law to various legal scenarios.
- Evaluate causes of adult and juvenile delinquent behavior and motivations for criminal activity.
- Demonstrate detection, investigation, and enforcement procedures.
- Analyze ethical dilemmas as they apply to victims, suspects, and the public.
- Facilitate community problem solving strategies.

Fall Semester I			Credits
ENG	111	Expository Writing	3
CJC	111	Introduction to Criminal Justice	3
CJC	112	Criminology	3
CJC	113	Juvenile Justice	3
CJC	131	Criminal Law	3
Total			15

Spring Semester I			Credits
—	—	Second English Elective ²	3
CJC	122	Community Policing	3
CJC	132	Courts and Evidence	3
CJC	141	Corrections	3
—	—	Social/Behavioral Science Elective	3
Total			15

Summer Semester I

CJC	120	Interviews/interrogations	2
CJC	213	Substance Abuse	3
—	—	Criminal Justice Elective ¹	2-3
Total			7-8

Fall Semester II

—	—	Communication Elective ³	3
CJC	221	Investigative Principles	4
CJC	231	Constitutional Law	3
—	—	Criminal Justice Elective ¹	2-3
—	—	Nat. Sciences/Math. Elective	3-5
Total			15-18

Spring Semester II

—	—	Humanities/Fine Arts Elective	3
CJC	121	Law Enforcement Operations	3
CJC	212	Ethics and Community Relations	3
CJC	214	Victimology	3
CJC	222	Criminalistics	3
Total			15

Total credit hours required for degree: 67-71

¹Criminal Justice Technical Electives

Choose 2 courses from:

CJC 114	CJC 161
CJC 162	CJC 163
CJC 211	CJC 215
CJC 223	CJC 225
CJC 232	CJC 233

²Second English Electives

ENG 112
ENG 114

³Communications Electives

COM 120
COM 231

Homeland Security

A 55 18 0 C1

Certificate

This 18-hour certificate is designed to provide an introductory level knowledge to students interested in Homeland Security. Some employment opportunities are connected to certificates and/or degrees related to specified topics. This certificate is designed to provide an introductory level of knowledge. This certificate meets the eligibility requirements for financial aid.

Program outcomes:

Upon successful completion of Homeland Security certificate, the graduate should be able to:

- Explain goals, processes and organizational components of the American Justice System.
- Apply statutory and case law to various legal scenarios.
- Explain the role of Homeland Security as it relates to terrorism response, intelligence gathering, and border security.

Fall Semester I**Credits**

CJC	111	Introduction to Criminal Justice	3
CJC	112	Criminology	3
Total			6

Spring Semester I

CJC	161	Intro to Homeland Security	3
Total			3

Fall Semester II

CJC	162	Intel Analysis & Sec Mgmt	3
CJC	231	Constitutional Law	3
Total			6

Spring Semester II

CJC	163	Trans and Border Security	3
Total			3

Total credit hours required for certificate: 18

Criminal Justice Foundations

A 55 18 0 C2

Certificate

This certificate is designed to provide base-level knowledge for those interested in the criminal justice field. This certificate alone does not meet financial aid requirements.

Program Outcomes:

Upon successful completion of Criminal Justice Foundations certificate, the graduate should be able to:

- Explain goals, processes and organizational components of the American Justice System.
- Apply statutory and case law to various legal scenarios.
- Evaluate causes of adult and juvenile delinquent behavior and motivations for criminal activity.
- Analyze ethical dilemmas as they apply to victims, suspects, and the public.

Fall Semester I			Credits
CJC	111	Introduction to Criminal Justice	3
CJC	112	Criminology	3
Total			6

Spring Semester I			
CJC	212	Ethics and Community Relations	3
Total			3

Fall Semester II			
CJC	113	Juvenile Justice	3
CJC	131	Criminal Law	3
Total			6

Total credit hours required for certificate: 15

Culinary Arts

A 55 15 0

Associate of Applied Science

Contact: (336) 334-4822, ext. 50253

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

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 such as line cook, station chef and assistant pastry chef. American Culinary Federation certification assistance is available to graduates. With experience, graduates may advance to positions such as sous-chef, executive chef or food service manager.

Program Outcomes:

Upon successful completion of the Culinary Arts degree, the graduate should be able to:

- Demonstrate professional conduct and interpersonal communication skills with the public, vendors, and other culinary professionals.
- Demonstrate a comprehension of cooking techniques and knife skills.
- Analyze food cost and implement necessary controls to maintain costs and ensure profitability within a food service operation.
- Demonstrate and apply principles of proper food safety and sanitation procedures as well as personal hygiene by obtaining ServSafe Certification from National Restaurant Association.
- Understand foodservice equipment and technology effectively.
- Design nutritional menus and apply healthy cooking techniques based upon nutritional guidelines.
- Apply business principles related to human resource management and supervision
- Demonstrate a comprehension of classical, modern and global cooking.
- Apply fundamental skills in the preparation of cold items that will include soups, salads, sauces, dressings, marinades, relishes, sandwiches, canapés, and hors d'oeuvres.
- Demonstrate and comprehend a wide-range of baking and pastry techniques to include cakes, candies, sugar, chocolates, classical desserts, frozen desserts, and tortes.

- Understand the chemical and physical changes in foods that occur with cooking, handling and processing.
- Calculate recipe conversion, measuring, food costing and yield management practices
- Apply dining room professionalism for guest relations and service.
- Demonstrate professionalism and leadership standards relating to appearance, time management and conduct.
- Apply for Certified Culinarian (CC) with the American Culinary Federation.

Fall Semester I			Credits
CIS	111	Basic PC Literacy	2
CUL	110	Sanitation and Safety	2
CUL	110A	Sanitation and Safety Lab	1
CUL	135	Food and Beverage Service	2
CUL	135A	Food and Beverage Service Lab	1
CUL	140	Basic Culinary Skills	5
CUL	160	Baking I	3
Total			16

Spring Semester I			
CUL	112	Nutrition for Foodservice	3
CUL	150	Food Science I	2
CUL	150A	Food Science Lab	1
CUL	240	Culinary Skills II	5
HRM	110	Intro to Hosp & Tourism	3
MAT	115	Mathematical Models	3
Total			17

Summer Semester I			
COE	111	Co-op Work Experience I	1
CUL	120	Purchasing	2
CUL	170	Garde Manger I	3
ENG	111	Expository Writing	3
Total			9

Fall Semester II			
CUL	230	Global Cuisines	5
CUL	270	Garde Manger II	3
—	—	Social/Behavioral Science Elective	3
—	—	Humanities/Fine Arts Elective	3
Total			14

Spring Semester II			
COM	120	Intro to Interpersonal Comm	3
CUL	250	Classical Cuisine	5
CUL	260	Baking II	3
COE	121	Cooperative Work Experience I	1
HRM	245	Human Resource Mgmt-Hosp	3
Total			15

Total credit hours required for degree: 71

Culinary Arts

A 55 15 0 D1

Diploma

The Culinary Arts Diploma provides specific training required to prepare students to assume positions as trained entry-level culinary professionals in a variety of food service settings through employment at hotels, restaurants, caterers, and institutions. Students will learn the fundamentals of kitchen equipment, tools, basic cooking, baking, menu prep, teamwork, sanitation and safety, food science and nutrition, to meet the current demand for trained professionals. Graduates should qualify for entry-level positions such as line cooks, prep cooks, swing cooks, breakfast cooks, and pantry cooks, and assistant bakers.

Program Outcomes:

Upon successful completion of the Culinary Arts diploma, the graduate should be able to:

- Demonstrate professional conduct and interpersonal communication skills with the public, vendors, and other culinary professionals.
- Understand principles of cookery with emphasis on recipe conversion, measurements, terminology, classical knife cuts, food/equipment handling, soups, sauces and related topics.
- Apply principles of proper food safety and sanitation procedures as well as personal hygiene by obtaining ServSafe Certification from National Restaurant Association.
- Utilize foodservice equipment and technology effectively.
- Demonstrate baking and pastry techniques.
- Calculate recipe conversion, measuring, food costing and yield management practices.
- Demonstrate professionalism and leadership standards relating to appearance, time management and conduct.
- Design nutritional menus and apply healthy cooking techniques based upon nutritional guidelines.
- Apply business principles related to human resource management and supervision.

Fall Semester I			Credits
CUL	110	Sanitation and Safety	2
CUL	110A	Sanitation and Safety Lab	1
CUL	135	Food and Beverage Service	2
CUL	135A	Food and Beverage Service Lab	1
CUL	140	Basic Culinary Skills	5
CUL	160	Baking I	3
HRM	110	Intro to Hosp & Tourism	3
Total			17

Spring Semester I			Credits
CUL	112	Nutrition for Foodservice	3
CUL	150	Food Science	2
CUL	150A	Food Science Lab	1
CUL	240	Culinary Skills II	5
MAT	115	Mathematical Models	3
HRM	245	Human Resource Mgmt-Hosp	3
Total			17

Summer Semester I

CIS	111	Basic PC Literacy	2
ENG	111	Expository Writing	3
Total			5

Total credit hours required for diploma: 39

Culinary Arts

A 55 15 0 C1

Certificate

The Culinary Arts Certificate provides the student with specific training required to enter the foodservice industry in supporting roles. Students will learn the fundamental usage of kitchen equipment, tools, and basic cooking and baking. Students will be provided with theoretical knowledge and practical application that provide critical competencies to meet current industry demands. Graduates should qualify for entry-level positions such as prep cook, pantry cook, and kitchen assistance.

Program Outcomes:

Upon successful completion of the Culinary Arts certificate, the graduate should be able to:

- Demonstrate professional conduct and interpersonal communication skills with the public, vendors, and other culinary professionals.
- Apply principles and demonstrate proper food safety and sanitation procedures as well as personal hygiene by obtaining ServSafe Certification from National Restaurant Association.
- Understand foodservice equipment and technology effectively.
- Understand principles of cookery with emphasis on recipe conversion, measurements, terminology, classical knife cuts, food/equipment handling, soups, sauces and related topics.
- Apply dining room professionalism for guest relations and service.

Fall Semester I			Credits
CUL	110	Sanitation and Safety	2
CUL	110A	Sanitation and Safety Lab	1
CUL	140	Basic Culinary Skills	5
CUL	160	Baking	3
Total			11

Spring Semester I

CUL	112	Nutrition for Foodservice	3
HRM	245	Human Resource Mgmt-Hosp	3
Total			6

Total credit hours required for certificate: 17

Cyber Crime Technology

A 55 21 0

Associate in Applied Science

Contact: (336) 334-4822, ext. 50325

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 cybercrime 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.

Program Outcomes:

Upon successful completion of the Cyber Crime Technology degree, the graduate should be able to:

- Identify current ethical issues in computer technology
- Use appropriate software to monitor network traffic
- Identify network vulnerabilities
- Create strategic plans to enhance network security
- Assess various network topologies
- Identify emerging network technologies
- Use industry standard tools and procedures to recover data
- Identify methods for gathering technical evidence to be used in criminal prosecution

Fall Semester I			Credits
CCT	110	Introduction to Cyber Crime	3
ENG	111	Expository Writing	3
NET	110	Networking Concepts	3
NOS	110	Operating Systems Concepts	3
CIS	110	Introduction to Computers	3
Total			15

Spring Semester I			
CCT	121	Computer Crimes Investigation	4
CCT	285	Trends in Cyber Crime	3
NOS	120	Linux/UNIX Single User	3
CTS	120	Hardware/Software Support	3
SEC	110	Security Concepts	3
Total			16

Summer Semester I			
CCT	112	Ethics and High Technology	3
CCT	240	Data Recovery Techniques	3
—	—	Social/Behavioral Science	3
Total			9

Fall Semester II

CCT	231	Technology Crimes and Law	3
CCT	250	Network Vulnerabilities	3
CJC	231	Constitutional Law	3
ENG	114	Professional Research & Writing	3
—	—	Natural Sciences/Mathematics	3-5
Total			15

Spring Semester II

CJC	132	Court Procedure & Evidence	3
CCT	251	Network Vulnerabilities II	3
CCT	289	Capstone Project	3
COM	110	Introduction to Communication	3
—	—	Humanities/Fine Arts Elective	3
Total			15

Total credit hours required for degree: 70-72

Dental Assisting

D 45 24 0

Diploma

Contact: (336) 334-4822, ext. 50501

Limited Enrollment Program:

Contact the Enrollment Services Office for Program admission requirements and Program application deadlines.

The Dental Assisting 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 may be eligible to take the Dental Assisting National Board Examination to become Certified Dental Assistants. As a Dental Assistant II, defined by the Dental Laws of North Carolina, graduates work in dental offices and other related areas.

Program Outcomes:

Upon successful completion of the program, the student should be able to:

- Provide basic and expanded chair side functions to facilitate completion of restorative and advanced operative procedures
- Record medical and dental clinical documentation that adheres to legal standards
- Complete radiographic/digital images for diagnostic and technique quality
- Manipulate dental materials to support chair side and laboratory procedures
- Apply legal and regulatory concepts to the provision of oral care
- Provide assistance in the management of emergency situations
- Perform basic office procedures necessary to assist in managing dental practice
- Design and implement individualized patient education strategies
- Apply self-assessment skills to prepare for lifelong learning

Fall Semester I			Credits
DEN	110	Orofacial Anatomy	3
DEN	111	Infection/Hazard Control	2
DEN	101	Preclinical Procedures	7
DEN	112	Dental Radiography	3
BIO	106	Intro to Anatomy/Phys/Micro	3
Total			18

Spring Semester I

DEN	103	Dental Sciences	2
DEN	104	Dental Health Education	3
DEN	102	Dental Materials	5
DEN	105	Practice Management	2
DEN	106	Clinical Practice I	5
PSY	150	General Psychology	3
Total			20

Summer Semester I

DEN	107	Clinical Practice II	5
ENG	111	Expository Writing	3
Total			8

Total credit hours required for diploma: 46

While it is expected that most students will enroll full-time, a limited number of students may enroll as part-time students with approval of the department chair. The part-time option requires two (2) years to complete.

Dental Hygiene

A 45 26 0

Associate of Applied Science

Contact: (336) 334-4822, ext. 50347

Limited Enrollment Program: Contact the Enrollment Services Office for Program admission requirements and program application deadlines.

The Dental Hygiene 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.

Program Outcomes:

In accordance with the North Carolina Dental Practice Act, including rules and regulations, upon successful completion of the Dental Hygiene program, the graduate should be able to:

- Apply the dental hygiene process of care using evidence-based practices for the child, adolescent, geriatric, medically-complex and periodontally-involved patient
- Complete radiographic images according to diagnostic and technical standards
- Prepare for assessment and treatment of medical emergencies
- Apply a professional code of ethics in the provision and/or support of oral health care services
- Prepare oral health strategies for diverse groups
- Apply legal and regulatory concepts to the provision of oral health care services
- Apply self-assessment skills to prepare for life-long learning
- Complete successfully the National Dental Hygiene Examination and a state/regional clinical examination

Fall Semester I

			Credits
DEN	110	Orofacial Anatomy	3
DEN	111	Infection/Hazard Control	2
DEN	120	Dental Hygiene Preclinic Lecture	2
DEN	121	Dental Hygiene Preclinic Lab	2
BIO	165	Anatomy and Physiology I	4
CHM	131	Introduction to Chemistry	3
Total			16

Spring Semester I

DEN	112	Dental Radiography	3
BIO	175	General Microbiology	3
DEN	130	Dental Hygiene Theory I	2
DEN	131	Dental Hygiene Clinic I	3
DEN	125	Dental Office Emergencies	1
BIO	166	Anatomy and Physiology II	4
Total			16

Summer Semester I

DEN	124	Periodontology	2
DEN	140	Dental Hygiene Theory II	1
DEN	141	Dental Hygiene Clinic II	2
DEN	222	General and Oral Pathology	2
ENG	111	Expository Writing	3
Total			10

Fall Semester II

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	223	Dental Pharmacology	2
ENG	112	Argument Based Research	3
COM	231	Public Speaking	3
Total			18

Spring Semester II

DEN	230	Dental Hygiene Theory IV	1
DEN	231	Dental Hygiene Clinic IV	4
DEN	232	Community Dental Health	3
DEN	233	Professional Development	2
SOC	240	Social Psychology	3
—	—	Humanities/Fine Arts Elective	3
Total			16

Total credit hours required for degree: 76

Students must demonstrate math, computer competency at the following course level prior to graduation: MAT 110 or MAT 115 and CIS 110.

Early Childhood Education

A 55 22 0

Associate of Applied Science

Contact: (336) 334-4822, ext. 50495

The Early Childhood Education curriculum prepares individuals to work with children from infancy through middle 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 child 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.

Program Outcomes:

Upon successful the Early Childhood Education degree, graduate should be able to:

- Promote child development and learning
- Build family and community relationships
- Observe, document, and assess to support young children and families
- Use developmentally effective approaches to connect with children and families
- Use content knowledge to build meaningful curriculum
- Become a professional by practicing professionalism and ethical conduct

Fall Semester I			Credits
EDU	119	Intro to Early Childhood Education	4
EDU	144	Child Development I	3
EDU	146	Child Guidance	3
EDU	151	Creative Activities	3
ENG	111	Expository Writing	3
Total			16

Spring Semester I			Credits
EDU	131	Children, Family and Community	3
EDU	145	Child Development II	3
EDU	153	Health, Safety and Nutrition	3
EDU	214	Early Childhood Intermediate Pract	4
COM	110	Introduction to Communication	3
—	—	Social/Behavioral Science Elective	3
Total			19

Summer Semester I

—	—	EDU Elective ¹	3
EDU	221	Children with Exceptionalities	3
EDU	271	Educational Technology	3
Total			9

Fall Semester II

EDU	251	Exploration Activities	3
EDU	251A	Exploration Activities Lab	1
EDU	259	Curriculum Planning	3
EDU	280	Literacy Experiences	3
EDU	280A	Literacy Experiences Lab	1
EDU	284	Early Child Capstone Prac	4
Total			15

Spring Semester II

ENG	114	Professional Research and Reporting	3
COE	131	Co-op Work Experience III	1
COE	135	Work Experience Seminar III	1
COE	211	Co-op Work Experience IV	1
COE	215	Work Experience Seminar IV	1
MAT	140	Survey of Mathematics	3
—	—	Humanities/Fine Arts Elective	3
Total			13

Total credit hours required for degree: 72

¹Early Childhood Summer Electives

Choose 1 course from:

EDU 154	EDU 157
EDU 234	EDU 235
EDU 261	EDU 262

Early Childhood Education

A 55 22 0 D1

Diploma

The Early Childhood Education diploma gives the student the opportunity to experience the basic courses in theory in a classroom setting along with one practicum experience. Additionally, all courses with EDU prefixes are used evaluate the educational level of each child care provider by the NC Division of Child Development and Early Education. Earning the ECE diploma will enable the student to be rated at five out of seven education points by the NC Star Rated License program and makes the student more employable.

Program Outcomes:

Upon successful the Early Childhood Education diploma, graduate should be able to:

- Promote child development and learning
- Build family and community relationships
- Use developmentally effective approaches to connect with children and families
- Become a professional by practicing professionalism and ethical conduct

Fall Semester I			Credits
EDU	119	Intro to Early Childhood Education	4
EDU	144	Child Development I	3
EDU	151	Creative Activities	3
EDU	146	Child Guidance	3
ENG	111	Expository Writing	3
Total			16

Spring Semester I

EDU	131	Children, Family and Community	3
EDU	145	Child Development II	3
EDU	153	Health, Safety and Nutrition	3
EDU	214	Early Childhood Intermediate Pract	4
COM	110	Introduction to Communication	3
—	—	Social/Behavioral Science Elective	3
Total			19

Summer Semester I

EDU	—	EDU Elective ¹	3
EDU	221	Children with Exceptionalities	3
EDU	271	Educational Technology	3
Total			9

Total credit hours required for diploma: 44

¹Early Childhood Summer Electives

Choose 1 course from:

EDU 154	EDU 157
EDU 234	EDU 235
EDU 261	EDU 262

Early Childhood Education

A 55 22 0 C1

Certificate

The Early Childhood Education certificate introduces the student to the field of ECE through five classes of basic content and theory. Upon successful completion of EDU 119 the student earns the NC Child Care Credential and qualifies to be the lead teacher in a child care center. Additionally, all courses with EDU prefixes are used evaluate the educational level of each child care provider by the NC Division of Child Development and Early Education. Earning this ECE certificate will enable the student to be rated at five out of seven education points by the NC Star Rated License program and makes the student more employable.

Program Outcomes:

Upon successful the Early Childhood Education certificate, graduate should be able to:

- Promote child development and learning
- Use developmentally effective approaches to connect with children and families
- Become a professional by practicing professionalism and ethical conduct

Fall Semester I			Credits
EDU	119	Intro to Early Childhood Education	4
EDU	151	Creative Activities	3
Total			7

Spring Semester I

EDU	146	Child Guidance	3
EDU	153	Health, Safety and Nutrition	3
Total			6

Fall Semester II

EDU	144	Child Development I or	3
EDU	145	Child Development II	(3)
Total			3

Total credit hours required for certificate: 16

Early Childhood Administration

A 55 22 0 C2

Certificate

The Early Childhood Administration certificate enables the student to receive two state credentials. Upon successful completion of EDU 119 the student earns the NC Child Care Credential and qualifies to be the lead teacher in a child care center. By successfully completing the two administration classes, the student receives the NC Child Care Administrative Credential and the rank of a Level I administrator. This is necessary to be employed as a director in a child care center in NC.

Program Outcomes:

Upon successful the Early Childhood Education Administration certificate, graduate should be able to:

- Promote child development and learning
- Build family and community relationships
- Become a professional by practicing professionalism and ethical conduct

Fall Semester I			Credits
EDU	119	Introduction to Early Childhood Education	4
EDU	261	Early Childhood Administration I	3
Total			7

Spring Semester I

EDU	131	Children, Family and Community	3
EDU	262	Early Childhood Administration II	3
Total			6

Fall Semester II

EDU	144	Child Development I or	3
EDU	145	Child Development II	(3)
Total			3

Total credit hours required for certificate: 16

Early Childhood School Age

A 55 22 0 C3

Certificate

The Early Childhood School Age certificate enables the student to receive two state credentials. Upon successful completion of EDU 119 the student earns the NC Child Care Credential and qualifies to be the lead teacher in a child care center. By successfully completing EDU 235 and EDU 145, the student receives the NC Child Care School Age Credential. Additionally, all courses with EDU prefixes are used to evaluate the educational level of each child care provider by the NC Division of Child Development and Early Education. Earning this ECE certificate will enable the student to be rated at five out of seven education points by the NC Star Rated License program and makes the student more employable.

Program Outcomes:

Upon successful completion of the Early Childhood Education School Age certificate, graduate should be able to:

- Promote child development and learning
- Use developmentally effective approaches to connect with children and families
- Use content knowledge to build meaningful curriculum
- Become a professional by practicing professionalism and ethical conduct

Fall Semester I			Credits
EDU	251	Exploration Activities	3
EDU	251A	Exploration Activities Lab	1
Total			4

Spring Semester I			Credits
EDU	145	Child Development II	3
Total			3

Summer Semester I			Credits
EDU	271	Educational Technology	3
EDU	235	Schoolage Dev and Program	3
Total			6

Fall Semester II			Credits
EDU	280	Literacy Experiences	3
EDU	280A	Literacy Experiences Lab	1
Total			4

Total credit hours required for certificate: 17

Early Childhood Infant-Toddler Care

A 55 22 0 C4

Certificate

The Early Childhood Infant-Toddler Care certificate introduces the student to the field of ECE with a concentration on working with children from birth through the age of two years. Upon successful completion of EDU 119 the student earns the NC Child Care Credential and qualifies to be the lead teacher in a child care center. Additionally, all courses with EDU prefixes are used to evaluate the educational level of each child care provider by the NC Division of Child Development and Early Education. Earning this ECE certificate will enable the student to be rated at five out of seven education points by the NC Star Rated License program and makes the student more employable. Finally, when 75% of a center's teachers in the B-2 classrooms have this certificate, the center can earn an extra quality point in the calculation for the star rating for the center.

Program Outcomes:

Upon successful completion of the Early Childhood Education School Age certificate, graduate should be able to:

- Promote child development and learning
- Build family and community relationships
- Become a professional by practicing professionalism and ethical conduct

Fall Semester I			Credits
EDU	119	Intro to Early Childhood Education	4
EDU	144	Child Development I	3
Total			7

Spring Semester I			Credits
EDU	131	Child, Family & Community	3
EDU	153	Health, Safety & Nutrition	3
Total			6

Summer Semester I			Credits
EDU	234	Infants, Toddlers & Twos	3
Total			3

Total credit hours required for certificate: 16

Electrical Systems Technology

A 35 13 0

Associate of Applied Science

Contact: (336) 334-4822, ext. 53105

This curriculum is designed to provide training for persons interested in the installation and maintenance of electrical systems found in residential, commercial, and industrial facilities.

Coursework, most of which is hands-on, will include such topics as AC/DC theory, basic wiring practices, programmable logic controllers (PLC), industrial motor controls, applications of the National Electric Code and other subjects as local needs require.

Graduates should qualify for a variety of jobs in the electrical field as an on-the-job trainee or apprentice assisting in the layout, installation, and maintenance of electrical systems.

Program Outcomes:

Upon successful completion of this program, the Electrical Systems Technology degree, a graduate should be able to:

- Interpret electrical prints, schematics and diagrams
- Wire a residential and commercial structure
- Wire an industrial structure
- Repair electric motors and controls
- Maintain industrial PLCs
- Ensure electrical work complies with the National Electric Code
- Demonstrate the professional employability skills that are expected in the workplace while maintaining safety

Fall Semester I			Credits
ELC	125	Diagrams and Schematics <u>or</u>	2
BPR	135	Schematics and Diagrams	(2)
ELC	112	DC/AC Electricity	5
ELC	113	Residential Wiring	4
ELC	126	Electrical Computations	3
ENG	111	Expository Writing	3
Total			17

Spring Semester I			
ELC	114	Commercial Wiring	4
ELC	117	Motors and Controls	4
ELC	118	National Electrical Code	2
ELC	127	Software for Technicians <u>or</u>	2
ELC	220	Photovoltaic Systems Tech	(3)
—	—	Communications Elective ¹	3
—	—	Math Elective ²	3
Total			18-19

Summer Semester I			
ELC	115	Industrial Wiring	4
Total			4

Fall Semester II			
ELC	130	Adv/Motors Controls	3
ELN	133	Digital Electronics	4
ELN	229	Industrial Electronics	4
—	—	Social/Behavioral Science Elective ³	3
ISC	112	Industrial Safety	2
Total			16

Spring Semester II

ELC	119	NEC Calculations	2
ELC	128	Introduction to PLC	3
HYD	110	Hydraulics/Pneumatics <u>or</u>	3
ELC	221	Adv Photovoltaic Systems Design	(3)
PCI	162	Instrumentation Controls <u>or</u>	3
SST	120	Energy Use Analysis	(3)
—	—	Humanities/Fine Arts Elective ⁴	3
Total			14

Total credit hours required for degree: 69

¹Communications Electives

COM 110
COM 231
ENG 114

²Math Electives

MAT 110 MAT 121
MAT 115 PHY 110
MAT 120 PHY 121

³Social/Behavioral Science Electives

ECO 251
PSY 150
SOC 210

⁴Humanities/Fine Arts Electives

HUM 110
HUM 115
PHI 240

Photovoltaic Solar Installation

A 35 13 0 C1

Certificate

The Photovoltaic (PV) Solar Installation Certificate Program is an introductory group of courses that provide students the knowledge and skills required to be successful in the fast pace solar industry. Upon completion of this certificate students are qualified to take the industry recognized NABCEP (North American Board of Certified Energy Practitioners) Entry Level Photovoltaic Certificate of Knowledge Exam. This certificate provides a solid understanding of PV technology, site analysis, system design, and installation methods performed in residential and commercial applications. Students will qualify for careers as an entry-level technician for PV dealers, PV installers and electrical contractors with a renewable energy focus.

After successful completion of the Photovoltaic Solar Installation Certificate, students will qualify to sit for the NABCEP Entry Level Exam.

Program Outcomes:

Upon completion of the Photovoltaic Solar Installation certificate, the graduate should be able to:

- Analyze the performance and operating characteristics of PV systems and components.
- Design a PV system that meets the performance, architectural and structural requirements for given applications.

Fall Semester I			Credits
SST	120	Energy Use Analysis	3
ELC	113	Residential Wiring	4
Total			7

Spring Semester I			
ELC	118	National Electrical Code	2
ELC	220	Photovoltaic Sys Technology	3
ELC	221	Adv Photovoltaic Sys Design	3
Total			8

Total credit hours required for certificate: 15

Electronics Engineering Technology

A 40 20 0

Associate of Applied Science

Contact: (336) 334-4822, ext. 53055

These curriculums are designed to prepare students through the study and application of principles from mathematics, natural sciences, and technology and applied processes based on these subjects.

Course work includes mathematics, natural sciences, engineering sciences and technology.

Graduates should qualify to obtain occupations such as technical service providers, materials and technologies testing services, process improvement technicians, engineering technicians, construction technicians and managers, industrial and technology managers, or research technicians.

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.

Program Outcomes:

Upon successful completion of the Electronics Engineering Technology degree, graduate should be able to:

- Perform digital and analog circuit analysis
- Construct electronic circuits
- Repair electronic circuits
- Use electronic test equipment to make appropriate measurements
- Demonstrate fundamental computer programming and computer-aided problem solving

Fall Semester I			Credits
EGR	125	Appl Software for Tech	2
EGR	131	Intro to Electronics Technology	2
ELC	131	Circuit Analysis I	4
ENG	111	Expository Writing	3
—	—	MAT Elective ²	3
—	—	Social/Behavior Science ³	3
Total			17

Spring Semester I

ELN	131	Analog Electronics I	4
ELN	133	Digital Electronics	4
—	—	Communications Elective ⁴	3
—	—	MAT Elective ²	3
PHY	131	Physics-Mechanics ⁴	4
Total			18

Summer Semester I

ELN	132	Analog Electronics II	4
CET	222	Computer Architecture	2
Total			6

Fall Semester II

ELN	232	Intro to Microprocessors	4
ELN	234	Communication Systems	4
—	—	Humanities/Fine Arts Elective ⁵	3
—	—	EET Technical Elective ¹	1-3
Total			12-14

Spring Semester II

CSC	139	Visual Basic Programming	3
EGR	285	Design Project	2
—	—	EET Technical Elective ¹	3
ELN	249	Digital Communication	3
ELN	236	Fiber Optics and Lasers	4
Total			15

Total credit hours required for degree: 68-70

¹Electronics Engineering Technology Technical Electives

Choose a minimum of 4 credit hours from:

ATR 280	CET 111	ELN 231
DFT 151	COE 111	
ELC 128	PCI 162	

²Math Electives

Choose 6 credit hours from:

MAT 120	MAT 121
MAT 161	MAT 171
MAT 175	MAT 271

³Social/Behavioral Science Electives

ECO 251
GEO 111
PSY 150
SOC 210

⁴Communications Electives

COM 110
COM 120
COM 231
ENG 114

⁵Humanities/Fine Arts Electives

HUM 110	HUM 115
PHI 240	

⁶Students who meet the prerequisite requirements may substitute PHY 151 or PHY 251 for PHY 131.

Electronics Engineering Technology

Wireless Option

A 40 20 0 A2

Associate of Applied Science

Contact: (336) 334-4822, ext. 53055

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.

Program Outcomes:

Upon successful completion of the Electronics Engineering Technology degree, graduate should be able to:

- Perform digital and analog circuit analysis
- Construct electronic circuits
- Repair electronic circuits
- Use electronic test equipment to make appropriate measurements
- Demonstrate fundamental computer programming and computer-aided problem solving
- Examine core processes and applications used in RF circuits

Fall Semester I			Credits
EGR	125	Appl Software for Tech	2
EGR	131	Intro to Electronics Technology	2
ELC	131	Circuit Analysis I	4
ENG	111	Expository Writing	3
—	—	MAT Elective ²	3
—	—	Social/Behavior Science ³	3
Total			17

Spring Semester I			
ELN	131	Analog Electronics I	4
ELN	133	Digital Electronics	4
—	—	Communications Elective ⁴	3
—	—	MAT Elective ²	3
PHY	131	Physics-Mechanics ⁶	4
Total			18

Summer Semester I			
ELN	132	Analog Electronics II	4
CET	222	Computer Architecture	2
Total			6

Fall Semester II

ELN	232	Introduction to Microprocessors	4
ELN	234	Communication Systems	4
—	—	Humanities/Fine Arts ⁵	3
—	—	EET Wireless Option Technical Elective ¹	2
Total			13

Spring Semester II

CSC	139	Visual Basic Programming	3
EGR	285	Design Project	2
ELN	249	Digital Communication	3
ELN	236	Fiber Optics and Lasers	4
—	—	EET Wireless Option Technical Elective ¹	2
Total			14

Total credit hours required for degree: 68

¹Electronics Engineering Technology Technical Electives

Choose a minimum of 4 credit hours from:

- ELN 271 (Restricted to Wireless EET Option)
- ELN 272 (Restricted to Wireless EET Option)
- DFT 151

²Math Electives

Choose 6 credit hours:

- MAT 120 MAT 121
- MAT 161 MAT 171
- MAT 175 MAT 271

³Social/Behavioral Science Electives

- ECO 251
- GEO 111
- PSY 150
- SOC 210

⁴Communications Electives

- COM 110
- COM 120
- COM 231
- ENG 114

⁵Humanities/Fine Arts Electives

- HUM 110 HUM 115
- PHI 240

⁶Students who meet the prerequisite requirements may substitute PHY 151 or PHY 251 for PHY 131.

Electronics Engineering Technology

A 40 20 0 D1

Diploma

The Electronics Engineering Technology Diploma program is for individuals wishing to quickly gain a basic foundation in electronics. The diploma's primary emphasis is on analyzing, designing, and troubleshooting electronic circuitry. The electronics diploma is frequently used by individuals as a way of preparing for electronics certification exams.

Program Outcomes:

Upon completion of the Electronics Engineering Technology diploma, the graduate should be able to:

- Perform digital and analog circuit analysis;
- Repair electronic equipment;
- Use electronic test equipment to make appropriate measurements

Fall Semester I			Credits
EGR	125	Appl Software for Tech	2
EGR	131	Intro to Electronics Technology	2
ELC	131	Circuit Analysis I	4
ENG	111	Expository Writing	3
—	—	MAT Elective ²	3
Total			14

Spring Semester I			
ELN	131	Analog Electronics I	4
ELN	133	Digital Electronics	4
ELC	128	Introduction to PLC	3
—	—	MAT Elective ²	3
—	—	EET Technical Elective ¹	3
Total			17

Summer Semester I			
ELN	132	Analog Electronics II	4
CET	222	Computer Architecture	2
Total			6

Total credit hours required for diploma: 37

¹Electronics Engineering Technology Technical Electives

Choose a minimum of 3 credit hours.

ATR 280 CET 111
DFT 151 PCI 162

²Math Electives

Choose 6 credit hours:

MAT 120 MAT 121
MAT 161 MAT 171

Emergency Medical Science

A 45 34 0

Associate of Applied Science

Contact: (336) 334-4822 ext. 50588

Limited Enrollment Program:

Contact the Enrollment Services Office for Program admission requirements and Program application deadlines.

The Emergency Medical Science curriculum is designed to prepare graduates to enter the workforce as paramedics. Additionally, the program can provide an Associate Degree for individuals desiring an opportunity for career enhancement. Employment opportunities include ambulance services, fire and rescue agencies, air medical services, specialty areas of hospitals, industry, educational institutions, and government agencies.

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.

This limited enrollment program is designed to be completed in as little as five full-time semesters (fall, spring, summer, fall spring) with a total of 1216 core and major course contact hours, 528 clinical and field internship hours, and 240 general education contact hours. The average commitment is three days a week on campus, one day a week at a hospital clinical site, and one day a week in field internship. There is no clinical component the first semester; the on-campus commitment is five days a week. Students enrolled in the EMS associate degree program must earn a final grade of "C" or higher in all courses with an "EMS" or "BIO" prefix in order to continue (refer to the Academic Information section of the GTCC catalog). Students are eligible to sit for the North Carolina EMT-Basic certification exam after successful completion of EMS 110. North Carolina EMT-B certification is required for field internship attendance. Students are eligible to sit for the North Carolina EMT-Intermediate exam after satisfactory completion of EMS 120, EMS 121, EMS 130, and EMS 131. Students are eligible to sit for the North Carolina EMT-Paramedic exam at the completion of the course of study.

Program Outcomes:

Upon completion of the Emergency Medical Science degree, the graduate should be able to:

- Demonstrate complex knowledge of infection control procedures.
- Demonstrate complex knowledge of prehospital pharmacology.
- Demonstrate complex knowledge of patient assessment.
- Demonstrate complex knowledge of prehospital care for medical patients.

- Apply principles of appropriate prehospital care for patients of all ages with medical emergencies.
- Demonstrate complex knowledge of prehospital care for cardiovascular patients.
- Apply principles of appropriate prehospital care for patients of all ages with cardiovascular emergencies.
- Demonstrate complex knowledge of prehospital care for trauma patients.
- Apply principles of appropriate prehospital care for patients of all ages with traumatic emergencies.
- Demonstrate complex knowledge of prehospital care for behavioral patients.
- Apply principles of appropriate prehospital care for patients of all ages with behavioral emergencies.
- Demonstrate complex knowledge of the Incident Command System.
- Apply principles and practices of emergency vehicle operation.
- Apply principles of emergency medical system communication.
- Demonstrate complex knowledge of medical documentation.
- Demonstrate entry-level mastery of the advanced prehospital skills defined in the DOT national curriculum as necessary for successful entry into the EMS workforce as a paramedic.

Entrance Requirements: Applicants wishing to enter the EMS program must take the placement exams offered by GTCC for reading, writing, and pre-algebra or document acceptable substitution credit. To be considered, applicants must meet or exceed the minimum scores listed below for the placement exam or waiver. Note: SAT scores are valid for 3 years.

	COMPASS	ASSET	ACCUPLACER	SAT	Previous Credit
Reading	81	41	80	510	RED 090
Writing	70	41	86	510	ENG 111
Pre-Algebra	47	41	57	520	MAT 060

Fall Semester I			Credits
EMS	110	EMT Basic	7
EMS	150	Vehicle Ops, EMS Communication	2
ENG	111	Expository Writing	3
BIO	163	Applied Anatomy and Physiology	5
	or		
BIO	165	Anatomy and Physiology I ¹	(4)
Total			16-17

¹Choosing BIO 165 requires that students take BIO166 in the spring.

Spring Semester I			
BIO	166	Anatomy and Physiology II*	4
EMS	120	Intermediate Intervention	3
EMS	121	Clinical Practicum I	2
EMS	130	Pharmacology I for EMS	2
EMS	131	Advanced Airway Management	2
—	—	Second English Elective ¹	3
Total			18

Summer Semester			
EMS	210	Advanced Patient Assessment	2
EMS	220	Cardiology	4
EMS	221	Clinical Practicum II	3
Total			9

Fall Semester II			
EMS	140	Rescue Scene Management	2
EMS	230	Pharmacology II for EMS	2
EMS	231	Clinical Practicum III	3
EMS	250	Advanced Medical Emergencies	3
EMS	260	Advanced Trauma Emergencies	2
PSY	150	General Psychology	3
PHI	240	Introduction to Ethics <u>or</u>	3
—	—	Humanities/Fine Arts Elective	(3)
Total			16

Spring Semester II			
EMS	240	Special Needs Patients	2
EMS	241	Clinical Practicum IV	3
EMS	270	Life Span Emergencies	3
EMS	285	EMS Capstone	2
—	—	Communications Elective ²	3
Total			13

Total credit hours required for degree: 69-72

¹Second English Elective

ENG 112
ENG 114

²Communications Elective

COM 110
COM 120

Emergency Medical Science Bridging Program

A 45 34 0 A2

Associate of Applied Science

Contact: (336) 334-4822, ext. 50588

The Emergency Medical Science Bridging program is designed to allow a currently certified, non-degreed EMT-Paramedic to earn a two-year Associate of Applied Science degree in Emergency Medical Science by completing the EMS Capstone course, Rescue Scene Management course, and the Pharmacology II for EMS course in addition to all other general education requirements for this degree.

The prerequisites for admission to the EMS Bridging program include the following certifications:

- EMT Paramedic Certification;
- Advanced Cardiac Life Support Certification*;
- Basic Trauma Life Support Certification*;
- Pediatric Advanced Life Support*;
- 4000 patient contact hours at the Paramedic level*.

**Within one year of application*

These certifications provide 46 semester hours of advanced placement for students who are accepted into the program and meet the GTCC residency requirements.

Fall Semester I			Credits
EMS	230	Pharmacology II	2
ENG	111	Expository Writing	3
PSY	150	General Psychology	3
BIO	163	Applied Anatomy and Physiology <u>or</u>	5
BIO	165	Anatomy and Physiology I ¹	(4)
Total			12(13)

¹Choosing BIO 165 requires that students take BIO166 in the spring

Spring Semester I			
BIO	166	Anatomy and Physiology II*	(4)
EMS	140	Rescue Scene Management	2
EMS	285	Capstone	2
—	—	Second English Elective ¹	3
—	—	Communications Elective ²	3
PHI	240	Introduction to Ethics	3
Total			13(17)

Total credit hours required for degree: 26-29

¹Second English Elective

ENG 112
ENG 114

²Communications Elective

COM 110
COM 120

Emergency Management

A 55 46 0

Associate of Applied Science

Contact: (336) 334-4822 ext. 50237

The Emergency Management curriculum is designed to provide students with a foundation of technical and professional knowledge needed for emergency services delivery in local and state government agencies. Study involves both management and technical aspects of law enforcement, fire protection, emergency medical services, and emergency planning.

Course work includes classroom and laboratory exercises to introduce the student to various aspects of emergency preparedness, protection, and enforcement. Students will learn technical and administrative skills such as investigative principles, hazardous materials, codes, standards, emergency agency operations, and finance.

Employment opportunities include ambulance services, fire/rescue agencies, law enforcement agencies, fire marshal offices, industrial firms, educational institutions, emergency management offices, and other government agencies. Employed persons should have opportunities for skilled and supervisory-level positions.

Program Outcomes:

Upon successful completion of the Emergency Management degree, the graduate should be able to:

- Perform emergency management critical skills (mitigation, preparedness, response, and recovery)
- Explain basic functions of emergency services (fire, medical, and law enforcement)
- Explain potential impacts of natural and manmade disasters including acts of terrorism on local, state, national, and international levels
- Demonstrate effective communication skills
- Apply critical-thinking and decision-making skills to managing disasters

Fall Semester I			Credits
ENG	111	Expository Writing	3
—	—	Communication Elective ²	3
FIP	120	Introduction to Fire Prot.	3
FIP	156	Computers for the Fire Services ⁴	2
FIP	236	Emergency Management	3
Total			14

Spring Semester I

—	—	Second English Elective ³	3
MAT	161	College Algebra	3
MAT	161A	College Algebra Lab	1
EPT	120	Sociology of Disaster	3
EPT	130	Mitigation and Preparedness	3
POL	120	American Government	3
Total			16

Summer Semester I

FIP	228	Local Govt. Finance	3
FIP	164	OSHA Standards	3
FIP	152	Fire Protection Law or	3
EPT	124	Terrorism and Emerg. Mgt.	(3)
EPT	150	Incident Management	3
Total			12

Fall Semester II

CJC	131	Criminal Law	3
EPT	210	Response & Recovery	3
EPT	220	Terrorism and Emerg. Mgt.	3
FIP	256	Municipal Public Relations	3
—	—	Humanities/Fine Arts Elective	3
Total			15

Spring Semester II

EPT	275	Emergency OPS Cent. Mgt.	3
CJC	121	Law Enforcement Operations	3
FIP	176	Haz Mat Operations	4
FIP	276	Managing Fire Services	3
—	—	Emergency Management (EPT) Elective ¹	3
Total			16

Total credit hours required for degree: 73

¹Emergency Management (EPT) Electives

Choose 1 course from:

EPT 225 EPT 230
EPT 260 EPT 280

²Communications Electives

COM 120
COM 231

³Second English Electives

ENG 112
ENG 114

⁴Students who already have credit for CIS 110 may substitute it for FIP 156. Students intending on pursuing a higher degree than the AAS should take CIS 110.

Emergency Management

A 55 46 0 C1

Certificate

The Emergency Management certificate is designed to provide technical and professional knowledge necessary to create a foundation of the emergency management field of study. The courses offered provide a full range of concepts for students to create a well-rounded knowledge base. Students will focus on an overview of emergency management, terrorism, phases of disaster management, and the national incident management system. No lab work is required to complete the certificate.

Program Outcome:

Upon successful completion of the Emergency Management Certificate, the graduate will be able to:

- Demonstrate a knowledge base in the field of emergency management and provide a foundation for future career decisions.

Fall Semester I			Credits
FIP	236	Emergency Management	3
EPT	220	Terrorism & Emergency Management	3
EPT	210	Response & Recovery	3
Total			9

Spring Semester I			
EPT	120	Sociology of Disaster	3
EPT	275	Emergency OPS Center Mgt.	3
Total			6

Summer Semester I			
EPT	150	EMS Incident Mgt.	3
Total			3

Total credit hours required for certificate: 18

Entertainment Technologies

A 25 19 0

Associate of Applied Science

Contact: (336) 334-4822, ext. 55051

This curriculum prepares individuals for entry-level employment in entertainment, particularly in the fields of sound and lighting. Instruction provides training not only in these technical aspects, but also prepares students to manage careers in this contract-to-contract type of work.

Course work includes exposure to the entire live concert and sound recording processes. Course work will also include music business fundamentals, including entertainment law and marketing/promotion. Students will also receive course work in music theory and electronic music.

Graduates may find employment as entry-level crew and/or production assistants in concert or event setups, with recording companies, or sound/lighting companies. Graduates will also be prepared to manage their careers (or others' careers) in the sound/lighting area or professional music entertainment.

Recording Engineering Option

A 25 19 0 A1

Associate of Applied Science

This curriculum prepares individuals for entry-level employment in entertainment, particularly in the fields of live sound and recording. Course work includes exposure to the entire live concert and sound recording processes. Course work will also include music business, including entertainment law and marketing/promotion. Students will also receive course work in music fundamentals and electronic music. Graduates may find employment as entry-level crew with events companies, sound and lighting production, recording studios, or other recording and live sound applications.

Program Outcomes

Upon successful completion of the Entertainment Technologies--Recording Engineering Option, students will be able to:

- Determine the career tracks and entertainment unions within the entertainment industry
- Determine the application of copyright law within the entertainment industry
- Characterize audio theory and audio measurements.
- Interface the components of a basic sound system
- Interpret the basic theories in theatrical and concert lighting
- Demonstrate proper practices in the areas of recording, and concert sound and lighting
- Demonstrate responsibility in the performance of professional assignments

Fall Semester I

			Credits
ENT	111	Introduction to Entertainment	3
ENT	134	Acoustics	3
ENT	135	Recording Engineering I	3
MAT	115	Mathematical Models	3
MUS	210	History of Rock & Roll	3
Total			15

Spring Semester I

CIS	110	Introduction to Computers	3
ENT	114	Entertainment Law	3
ENT	131	Live Sound Production I	3
ENT	235	Sound Recording Engineering II	3
MUS	111	Fundamentals of Music	3
Total			15

Summer Semester I

—	—	Communication Elective ¹	3
ENG	111	Expository Writing	3
MUS	214	Electronic Music	2
Total			8

Fall Semester II

—	—	Second English Elective ²	3
ENT	151	Concert Lighting I	3
ENT	211	Entertainment Promotion	3
ENT	237	Sound Recording III	3
PSY	150	General Psychology	3
Total			15

Spring Semester II

BUS	110	Introduction to Business	3
ENT	231	Live Sound Production II	3
BUS	240	Business Ethics	3
ENT	241	Equipment Maintenance	3
ENT	285	Capstone Project	3
Total			15

Total credit hours required for degree: 68

¹Communications Electives

COM 110

COM 120

²Second English Electives

ENG 112

ENG 114

Concert Sound and Lighting Option

A 25 19 0 A2

Associate of Applied Science

This curriculum prepares individuals for entry-level employment in entertainment, particularly in the fields of sound and lighting. Course work includes exposure to the entire live concert sound and lighting processes. Course work will also include music business, including entertainment law and marketing/promotion. Students will also receive course work in music fundamentals and electronic music. Graduates may find employment as entry-level crew with events companies, sound/lighting companies, theatres, church production and other concert sound and lighting applications.

Program Outcomes

Upon successful completion of the Entertainment Technologies--Concert Sound and Lighting Option, students will be able to:

- Determine the career tracks and entertainment unions within the entertainment industry
- Determine the application of copyright law within the entertainment industry
- Characterize audio theory and audio measurements
- Interface the components of a basic sound system
- Interpret the basic theories in theatrical and concert lighting
- Demonstrate proper practices in the areas of recording, and concert sound and lighting
- Demonstrate responsibility in the performance of professional assignments

Fall Semester I			Credits
ELC	111	Introduction to Electricity	3
ENT	111	Introduction to Entertainment	3
ENT	135	Sound Recording Engineering I	3
MAT	115	Mathematical Models	3
MUS	210	History of Rock & Roll	3
Total			15

Spring Semester I			Credits
CIS	110	Introduction to Computers	3
ENT	114	Entertainment Law	3
ENT	131	Live Sound Production I	3
ENT	151	Concert Lighting I	3
MUS	111	Fundamentals of Music	3
Total			15

Summer Semester I			Credits
—	—	Communication Elective ¹	3
ENG	111	Expository Writing	3
MUS	214	Electronic Music	2
PSY	150	General Psychology	3
Total			11

Fall Semester II			Credits
ENT	211	Entertainment Promotion	3
ENT	231	Live Sound Production II	3
ENT	251	Concert Lighting II	3
COE	111	Co-op Work Experience I	1
COE	115	Work Experience Seminar	1
Total			11

Spring Semester II			Credits
BUS	110	Introduction to Business	3
—	—	Second English Elective ²	3
ENT	241	Equipment Maintenance	3
ENT	252	Concert Lighting III	3
ENT	285	Capstone Project	3
Total			15

Total credit hours required for degree: 67

¹Communications Electives

COM 110

COM 120

²Second English Electives

ENG 112

ENG 114

Music Performance Option

A 25 19 0 A3

Associate of Applied Science

Course work includes exposure to the entire live concert and sound recording processes. Course work will also include music business, including entertainment law and marketing/promotion. Students will also receive course work in music fundamentals, music theory and electronic music.

Graduates may find employment as a musician or vocalist based on their ability. Graduates will also be prepared to manage their careers (or others' careers) in the sound/lighting area or professional music entertainment.

Program Outcomes

Upon successful completion of the Entertainment Technologies--Music Performance Option, students will be able to:

- Determine the career tracks and entertainment unions within the entertainment industry
- Determine the application of copyright law within the entertainment industry
- Interpret the laws governing performer's rights and organizations within the entertainment industry
- Demonstrate responsibility in the performance of professional assignments
- Demonstrate the ability to apply music theory to compositions
- Demonstrate proper practices in the areas of recording, and concert sound and lighting

Fall Semester I			Credits
ENT	111	Introduction to Entertainment	3
ENT	135	Recording Engineering I	3
MAT	115	Mathematical Models	3
MUS	121	Music Theory I	4
MUS	210	History of Rock & Roll	3
Total			16

Spring Semester I			Credits
CIS	110	Introduction to Computers	3
ENT	114	Entertainment Law	3
ENT	131	Live Sound Production I	3
MUS	111	Fundamentals of Music	3
MUS	151	Class Music I	1
MUS	161	Applied Music I	2
Total			15

Summer Semester I			Credits
—	—	Communication Elective ¹	3
ENG	111	Expository Writing	3
ENT	151	Concert Lighting I	3
MUS	214	Electronic Music	2
Total			11

Fall Semester II

PSY	150	General Psychology	3
ENT	211	Entertainment Promotion	3
MUS	122	Music Theory II	4
MUS	162	Applied Music II	2
—	—	Second English Elective ²	3
Total			15

Spring Semester II

BUS	110	Introduction to Business	3
ENT	260	Songwriting/Publishing	3
ENT	272	Live Performance	3
ENT	285	Capstone Project	3
MUS	261	Applied Music III	2
Total			15

Total credit hours required for degree: 71

¹Communications Electives

COM 110

COM 120

²Second English Electives

ENG 112

ENG 114

Artist Management Option

A 25 19 0 A4

Associate of Applied Science

This curriculum prepares individuals for entry-level employment in entertainment, particularly in the fields of music and production management.

Course work includes exposure to the entire live concert and sound recording processes. Course work will also include music business, including entertainment law and marketing/promotion. Students will also receive course work in music fundamentals and electronic music. Graduates may find employment as entry-level management for production companies, theatres, publishing or music companies. Graduates will also be prepared to manage their careers (or others' careers) in the sound/lighting area or professional music entertainment.

Program Outcomes

Upon successful completion of the Entertainment Technologies--Artist Management Option, students will be able to:

- Determine the career tracks and entertainment unions within the entertainment industry
- Determine the application of copyright law within the entertainment industry
- Interpret the laws governing performer's rights and organizations within the entertainment industry
- Demonstrate proper practices in the areas of recording, and concert sound and lighting
- Demonstrate responsibility in the performance of professional assignments

Fall Semester I			Credits
BUS	137	Principles of Management	3
ENT	111	Introduction to Entertainment	3
ENT	135	Sound Recording Engineering I	3
MAT	115	Mathematical Models	3
MUS	210	History of Rock & Roll	3
Total			15

Spring Semester I			
CIS	110	Introduction to Computers	3
ENT	114	Entertainment Law	3
ENT	131	Live Sound Production I	3
ENT	151	Concert Lighting I	3
MUS	111	Fundamentals of Music	3
Total			15

Summer Semester I			
ACC	120	Principles of Financial Accounting	4
ENG	111	Expository Writing	3
MUS	214	Electronic Music	2
Total			9

Fall Semester II			
BUS	110	Introduction to Business	3
ENT	211	Entertainment Promotion	3
ENT	278	Artist Management	3
PSY	150	General Psychology	3
–	–	Second English Elective ²	3
Total			15

Spring Semester II			
ACC	129	Individual Income Taxes	3
ACC	149	Introduction to Accounting Spreadsheets	2
BUS	240	Business Ethics	3
ENT	285	Capstone Project	3
–	–	Communication Elective ¹	3
Total			14

Total credit hours required for degree: 68

¹Communications Electives

COM 110

COM 120

²Second English Electives

ENG 112

ENG 114

Fire Protection Technology

A 55 24 0

Associate of Applied Science

Contact: (336) 334-4822, ext. 50237

The Fire Protection Technology curriculum is designed to provide individuals with the technical and professional knowledge necessary 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 positions within their current organizations.

Program Outcomes:

Upon successful completion the Fire Protection Technology degree, graduate should be able to:

- Perform fire prevention functions;
- Perform fire suppression functions;
- Perform hazardous materials control functions;
- Apply leadership techniques for a public organization
- Demonstrate effective communication skills
- Apply and understand safe working practices

Fall Semester I			Credits
ENG	111	Expository Writing	3
COM	120	Intro to Interpersonal Communication <u>or</u>	(3)
COM	231	Public Speaking	3
FIP	120	Introduction to Fire Protection	3
FIP	132	Building Construction	3
FIP	156	Computers in Fire Service*	2
Total			14

Spring Semester I			
ENG	112	Argument-Based Research <u>or</u>	3
ENG	114	Professional Research and Reporting	(3)
MAT	161	College Algebra	3
MAT	161A	College Algebra Lab	1
FIP	124	Fire Prevention, Public Education	3
FIP	229	Fire Dynamics and Combustion	3
—	—	Social/Behavioral Science Elective	3
Total			16

Summer Semester I

FIP	136	Inspections and Codes	3
FIP	152	Fire Protection Law	3
FIP	164	OSHA Standards	3
—	—	Fire Protection Elective ¹	3
Total			12

Fall Semester II

FIP	128	Fire Detection and Investigation	3
FIP	148	Fixed, Portable Extinguishing Systems	3
FIP	230	Chemistry of Hazardous Materials I	5
FIP	236	Emergency Management	3
—	—	Humanities/Fine Arts Elective	3
Total			17

Spring Semester II

FIP	144	Sprinklers and Auto Alarms	3
FIP	220	Fire Fighting Strategies	3
FIP	224	Instructional Methodology	4
FIP	232	Hydraulics and Water Distribution	3
FIP	276	Managing Fire Services	3
Total			16

Total credit hours required for degree: 75

¹Fire Protection Electives

Choose 3 credits from:

FIP 140	FIP 160
FIP 160A	FIP 176
FIP 180	FIP 221
FIP 228	FIP 231
FIP 240	FIP 244
FIP 248	FIP 252
FIP 256	

** Students who already have credit for CIS 110 may substitute it for FIP 156. Students intending on pursuing a higher degree than the AAS should take CIS 110.*

Fire Protection Technology

A 55 24 0 C1

Certificate

The Fire Protection Technology certificate is designed to provide technical and professional knowledge necessary to create a foundation of the public/private fire protective services. The courses offered provide a full range of concepts for students to create a well-rounded knowledge base. Students will focus on an overview of the fire service, building construction, fire prevention, fire investigations, public fire safety education, and industry safety standards. No lab work is required to complete the certificate.

Program Outcome:

Upon successful completion the Fire Protection Technology certificate, graduate should be able to:

- Demonstrate a knowledge base of the fire service and provide a foundation for future career decisions.

Fall Semester I			Credits
FIP	120	Introduction to Fire Protection	3
FIP	132	Building Construction	3
Total			6

Spring Semester I			
FIP	124	Fire Prevention, Public Education	3
FIP	128	Fire Detection and Investigation	3
Total			6

Summer Semester I			
FIP	164	OSHA Standards	3
Total			3

Total credit hours required for certificate: 15

General Occupational Technology

A 55 28 0

Associate of Applied Science

Contact: (336) 334-4822, ext. 50495

The General Occupational Technology curriculum provides individuals with an opportunity to upgrade their skills and to earn an associate degree by taking courses suited for individual occupational interests and/or needs.

The curriculum content will be customized for students according to their occupational interests and needs. A program of study for each student will be selected from any 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.

General Education Requirements:			Credits
ENG	111	Expository Writing	3
ENG	114	Professional Research and Reporting	3
COM	110	Introduction to Communication	3
MAT	115	Mathematical Models	3
—	—	Social/Behavioral Science Elective	3
—	—	Humanities/Fine Arts Elective	3
Total			18

Major courses: 18 credit hours from a combination of core courses for curriculums offered by the college.

Other Major Hours:

CIS	111	Basic PC Literacy	2

Twenty-nine additional credit hours must be chosen from courses required by curriculums offered by the college, including a maximum of eight semester hours earned through work experience, including cooperative education, practicums, and internships.

Total credit hours required for degree: 67

Geomatics Technology

A 40 42 0

Associate of Applied Science

Contact: (336) 334-4822, ext. 53034

These curriculums are designed to prepare students through the study and application of principles from mathematics, natural sciences, and technology and applied processes based on these subjects.

Course work includes mathematics, natural sciences, engineering sciences and technology.

Graduates should qualify to obtain occupations such as technical service providers, materials and technologies testing services, engineering technicians, construction technicians and managers, industrial and technology managers, or research technicians.

A course of study that prepares students to use mathematical and scientific principles for the delineation, determination, planning and positioning of land tracts, boundaries, contours and features applying principles of route surveying, construction surveying, photogrammetry, mapping, global positioning systems, geographical information systems, and other kinds of property description and measurement to create related maps, charts and reports. Includes instruction in applied geodesy, computer graphics, photointerpretation, plane and geodetic surveying, mensuration, traversing, survey equipment operation and maintenance, instrument calibration, and basic cartography. Graduates should qualify for jobs as survey party chief, instrument person, surveying technician, highway surveyor, mapper, GPS technician, and CAD operator. Graduates will be prepared to pursue the requirements necessary to become a Registered Land Surveyor in North Carolina.

Students completing the program are eligible to transfer to the BS Geomatics offered at North Carolina A&T State University as a junior; students are advised to discuss their intention ahead of time to ensure they take the required prerequisites prior to seeking admission to the BS program.

Program Outcomes:

Upon successful completion the Geomatics Technology degree, graduate should be able to:

- Produce engineering documents related to surveying and land development using Computer Aided Drafting.
- Use surveying instruments and surveying methods for land measurements and/or construction layout.
- Perform computations for horizontal and vertical curves and other related surveying calculations.
- Perform surveys and record data manually and electronically.
- Use of hydrology and grading techniques in a surveying project.
- Think critically about technical problems
- Communicate effectively in the workplace

Fall Semester I

			Credits
EGR	115	Introduction to Technology	3
CEG	151	CAD for Engineering Technology	3
ENG	111	Expository Writing	3
—	—	Humanities/Fine Arts Elective ²	3
—	—	MAT Elective I ³	3
Total			15

Spring Semester I

EGR	250	Statics/Strength of Material	5
—	—	MAT Elective 2 ³	3
PHY	131	Physics - Mechanics	4
SRV	110	Surveying I	4
Total			16

Summer Semester I

SRV	111	Surveying II	4
—	—	Social/Behavioral Science Elective ⁴	3
Total			7

Fall Semester II

CIV	125	Civil/Surveying CAD	3
CEG	211	Hydrology and Erosion Control	3
SRV	210	Surveying III	4
SRV	220	Surveying Law	3
—	—	Geomatics Technical Elective ¹	2-3
Total			15-16

Spring Semester II

CEG	230	Subdivision Planning and Design	3
SRV	240	Topographical / Site Surveying	4
CEG	111	Intro to GIS and GNSS	4
—	—	Communications Elective ⁵	3
Total			14

Total credit hours required for degree: 67-68

¹Geomatics Technology Technical Electives

Choose a minimum of 2 credit hours:

CEG 212 CIV 215
CIV 111
CIV 230

²Humanities/Fine Arts Electives

HUM 110 HUM 115

³Math Electives

Choose 1 Set:

MAT 121 and MAT 122
MAT 171 and MAT 172
MAT 175 and MAT 271

⁴Social/Behavioral Science Electives

PSY 150
SOC 210

⁵Communications Electives

COM 110 ENG 114
COM 120
COM 231

Geomatics Technology

A 40 42 0 C1

Certificate

The Geomatics Technology Certificate introduces students to the principles and fundamentals of Geomatics and related surveying concepts, use of computers for computations and drafting. Students are eligible to sit for the National Surveyor of Professional Surveyors-Level 1 Technician Certification Exam upon completion of the certificate. All credits can be transferred to the AAS degree in Geomatics.

Students can obtain employment as an entry level CAD technician/survey technician/rod man

Program Outcomes:

Upon successful completion of the Geomatics Technology certificate, the graduate should be able to:

- Use surveying instruments and surveying methods for land measurements and/or construction layout.
- Perform surveys and record data manually and electronically.
- Think critically about technical problems

Fall Semester I			Credits
EGR	115	Introduction to Technology	3
CEG	151	CAD for Engineering Technology	3
Total			6

Spring Semester I			
MAT	121	Algebra/Trigonometry I	3
SRV	110	Surveying I	4
Total			7

Summer Semester I			
SRV	111	Surveying II	4
Total			4

Total credit hours required for certificate: 17

Global Logistics Technology

A 25 17 0

Associate of Applied Science

Contact: (336) 334-4822, ext. 50085

The Global Logistics Technology curriculum prepares individuals for a multitude of career opportunities in distribution, transportation, and manufacturing organizations. Classroom instruction, field of study experiences, and practical laboratory applications of logistics management and global technology capabilities are included in the program of study.

Course work includes computer applications, accounting, business law, economics, management, industrial sciences, and international studies. Students will solve different levels of logistics-related problems through case study evaluations and supply chain projects utilizing logistical hardware and intelligent software tools.

Graduates should qualify for positions in a wide range of government agencies, manufacturing, and service organizations. Employment opportunities include entry-level purchasing, material management, warehousing, inventory, transportation coordinators, and logistics analysts. Upon completion, graduates may be eligible for certification credentials through APICS and AST&L.

Students will be required to use technology (computer, internet, etc.) in all courses in this program.

Program Outcomes

Upon successful completion of the Global Logistics Technology degree, the graduate should be able to:

- Implement basic global logistics strategies in a multicultural work environment
- Successfully manage customer and supplier relationships to meet company objectives
- Operate within the ethical, legal, and regulatory parameters of the industry in a sustainable global environment
- Evaluate international laws, tariffs and taxation issues to determine their impact on an organization's business goals.
- Use critical-thinking skills to perform financial and operational analysis, risk management and supply chain modeling
- Cultivate a collaborative work environment.

Fall Semester I			Credits
ACC	120	Principles of Financial Accounting	4
CIS	110	Introduction to Computers	3
ENG	111	Expository Writing	3
INT	110	International Business	3
LOG	110	Introduction to Logistics	3
Total			16

Spring Semester I

ACC	149	Introduction to Acc Spreadsheets	2
BUS	137	Fundamentals of Management	3
LOG	125	Transportation Logistics	3
BUS	115	Business Law	3
—	—	Social/Behavioral Science Elective ¹	3
—	—	Math Elective ²	3
Total			17

Summer Semester I

ACC	151	Accounting Spreadsheets Apps	2
ECO	252	Principles of Macroeconomics	3
LOG	240	Purchasing Logistics	3
Total			8

Fall Semester II

DBA	110	Database Concepts	3
—	—	Second English Elective ³	3
LOG	215	Supply Chain Management	3
LOG	235	Import/Export Management	3
—	—	Spanish Elective ⁴	3
Total			15

Spring Semester II

—	—	Communications Elective ⁵	3
LOG	211	Distribution Management	3
LOG	250	Advanced Global Logistics	4
—	—	Humanities/Fine Arts Elective ⁶	3
Total			13

Total credit hours required for degree: 69

¹Social/Behavioral Science Electives

ECO 251

GEO 111

²Math Electives

MAT 140

MAT 161 (Recommended if pursuing 4-year degree)

³Second English Electives

ENG 112

ENG 114

⁴Spanish Electives

SPA 111

SPA 120

⁵Communications Electives

COM 110

COM 120

COM 231

⁶Humanities/Fine Arts Electives

ART 114 ENG 262

ART 115 MUS 110

ENG 231 MUS 240

ENG 232 PHI 240

ENG 241 REL 211

ENG 242 REL 212

ENG 261

Global Logistics Technology

A 25 17 0 C1

Certificate

This certificate is designed to provide individuals with a basic understanding of the logistics functions of business. Students learn import/export skills, production planning and basic functions of warehouse management.

Program Outcomes

Upon successful completion of the Global Logistics Technology certificate, the graduate should be able to:

- Successfully manage the supply chain
- Evaluate transportation options in a global business environment
- Evaluate international laws tariffs and taxation issues to determining their impact on an organization's business goals

Courses			Credits
LOG	110	Introduction to Logistics	3
LOG	125	Transportation Logistics	3
LOG	215	Supply Chain Management	3
LOG	235	Import/Export Management	3
LOG	250	Advanced Global Logistics	4
Total			16

Total credit hours required for certificate: 16

Healthcare Management Technology

A 25 20 0

Associate of Applied Science

Contact: (336) 334-4822, ext. 50200

The Healthcare Management Technology curriculum is designed to prepare students for employment in healthcare business and financial operations. Students will gain a comprehensive understanding of the application of management principles to the healthcare environment.

The curriculum places emphasis on planning, organizing, directing, and controlling tasks related to healthcare organizational objectives including the legal and ethical environment. Emphasis is placed on the development of effective communication, managerial, and supervisory skills.

Graduates may find employment in healthcare settings including hospitals, medical offices, clinics, long-term care facilities, and insurance companies. Graduates are eligible to sit for various certification exams upon completion of the degree with a combination of a minimum of two years administrative experience. Eligible certifications include, but are not limited to, the Professional Association of Healthcare Office Managers (PAHCOM), the Healthcare Financial Management Association (HFMA), the Certified Patient Account Manager (CPAM), and the Certified Manager of Patient Accounts (CMPA) examinations.

Program Outcomes:

Upon successful completion of the Healthcare Management Technology degree, the graduate should be able to:

- Apply healthcare principles
- Apply healthcare management and supervisory skills
- Analyze work schedules and priorities in a healthcare setting
- Use healthcare marketing techniques
- Analyze facts and circumstances in the medical office environment to make legal and ethical decisions.
- Perform financial management tasks
- Apply knowledge of various healthcare and office software functions
- Use medical terminology and vocabulary effectively
- Utilize various reference materials in a variety of situations
- Execute financial processes for reimbursement of medical claims in a healthcare facility

Fall Semester I			Credits
ACC	120	Prin of Financial Accounting	4
ENG	111	Expository Writing	3
HMT	110	Intro to Healthcare Management	3
OST	137	Software Applications	3
OST	141	Medical Terminology I	3
Total			16

Spring Semester I

ACC	121	Prin of Managerial Accounting	4
HMT	211	Long-Semester Care Administration	3
MKT	120	Principles of Marketing	3
OST	142	Medical Terminology II	3
OST	138	Advanced Software Applications	3
Total			16

Summer Semester I

OST	149	Medical Legal Issues	3
—	—	Social/Behavioral Science Elective	3
Total			6

Fall Semester II

HMT	210	Medical Insurance	3
HMT	212	Mgmt of Healthcare Organizations	3
MKT	231	Healthcare Marketing	3
MAT	140	Survey of Mathematics	3
OST	286	Professional Development	3
Total			15

Spring Semester II

HMT	220	Healthcare Financial Management	4
HMT	225	Practice Management Simulation	3
COM	231	Public Speaking	3
COE	111	Co-op Work Experience ¹	1
COE	115	Work Experience Seminar I	1
—	—	Humanities/Fine Arts Elective	3
Total			15

Total credit hours required for degree: 68

¹Department Chair approval required for substitution of OST 188 for COE 111 and COE 115.

Courses in this program prepare the student for the Microsoft Office User Specialist Exams. Students will be required to purchase a voucher for these exams as part of the required course materials for each course in the program. Individual exams will be administered at the end of each of the individual courses. When a voucher is required for a particular course, it will be identified on the syllabus and in prominent locations such as the Moodle site and GTCC Bookstore.

Heavy Equipment and Transport Technology

A 60 24 D1

Diploma

Contact: (336) 334-4822, ext 57004

This curriculum is designed to prepare individuals in developing the basic knowledge and skills needed for employment in diesel powered medium and heavy-duty vehicles.

Students will learn the purpose, construction features, and principles of operation of medium and heavy-duty vehicles.

Graduates should qualify for entry level employment as a technician in a dealership, fleet shop, or independent garage.

Program Outcomes:

Upon successful completion of the Heavy Equipment & Transport diploma, the graduate shall be able to:

- Repair medium to heavy-duty diesel engines
- Replace diesel engine components
- Repair medium to heavy-duty vehicle mechanical systems such as drive train, suspension and steering, and braking systems
- Repair medium to heavy-duty vehicle electrical and electronic systems and components
- Repair medium to heavy-duty vehicle climate control systems to include heating and air conditioning systems and their controls
- Perform preventative maintenance inspections
- Demonstrate compliance with industry personal and environmental safety practices

Fall Semester I			Credits
COM	120	Intro to Interpersonal Comm	3
HET	110	Engines	6
HET	112	Diesel Electrical Systems	5
HET	127	Shop Rules and Regulations	1
MAT	115	Mathematical Models	3
Total			18

Spring Semester I			
HET	128	Medium / Heavy Duty Tune Up	2
HET	115	Electronic Engines	3
HET	231	Medium / Heavy Duty Brake System	2
HET	232	Medium / Heavy Duty Brake Sys Lab	1
HET	233	Suspension and Steering	4
Total			12

Summer Semester I			
CIS	110	Introduction to Computers	3
HET	116	Air Conditioning/Diesel Equipment	2
HET	125	Preventive Maintenance	2
HET	126	Preventive Maintenance Lab	1
HET	119	Mechanical Transmissions	3
Total			11

Total credit hours required for diploma: 41

Heavy Equipment and Transport Technology

A 60 24 0 C1

Certificate

This certificate program is designed to introduce students into the Heavy Equipment & Technology industry. It prepares students to work as apprentices under the supervision of a qualified Heavy Equipment & Transport technician.

Program Outcomes:

Upon successful completion of the Heavy Equipment & Transport certificate, the graduate shall be able to:

- Repair medium to heavy-duty diesel electrical systems
- Repair medium to heavy-duty vehicle brake systems
- Repair medium to heavy-duty vehicle suspension and steering systems
- Perform preventative maintenance inspections

Fall Semester I			Credits
HET	112	Diesel Electrical Systems	5
Total			5

Spring Semester I			
HET	231	Medium/Heavy Duty Brake System	2
HET	233	Suspension and Steering	4
Total			6

Summer Semester I			
HET	125	Preventive Maintenance	2
Total			2

Total credit hours required for certificate: 13

Hospitality Management

A 25 11 0

Associate of Applied Science

Contact: (336) 334-4822, ext. 50253

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

Course work includes 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, food service, beverage service, catering, front office, reservations and housekeeping. Opportunities are also available in product services, and technology support and sales.

Program Outcomes:

- Upon successful completion of the Hospitality Management degree, the graduate should be able to:
- Demonstrate professional conduct and interpersonal communication skills.
- Apply management skills appropriate for the hospitality management industry.
- Demonstrate a comprehension of basic cooking and knife skills.
- Analyze food, inventory and lodging cost-control and practices.
- Demonstrate and apply principles of proper food safety and sanitation procedures as well as personal hygiene by obtaining ServSafe Certification from National Restaurant Association.
- Apply business principles related to human resource management and supervision.
- Demonstrate an understanding of wine, beer and specialty beverage management and service.
- Apply dining room professionalism for guest relations and service.
- Identify marketing techniques and strategies to achieve hospitality industry missions and goals.

Fall Semester I			Credits
CIS	111	Basic PC Literacy	2
COM	120	Intro to Interpersonal Comm	3
CUL	110	Sanitation and Safety	2
CUL	110A	Sanitation and Safety Lab	1
CUL	140	Basic Culinary Skills	5
HRM	110	Intro to Hosp & Tourism	3
Total			16

Spring Semester I

ACC	120	Principles of Financial Accounting	4
CUL	135	Food and Beverage Service	2
CUL	135A	Food and Beverage Service Lab	1
ENG	111	Expository Writing	3
HRM	120	Front Office Procedures	3
MAT	115	Mathematical Models	3
Total			16

Summer Semester I

HRM	135	Facilities Management	3
HRM	140	Legal Issues-Hospitality	3
HRM	230	Club and Resort Management	3
Total			9

Fall Semester II

COE	111	Co-op Work Experience I	1
HRM	210	Meetings and Conventions	3
HRM	215	Restaurant Management	3
HRM	215A	Restaurant Management Lab	1
HRM	220	Cost Control-Food & Bev	3
HRM	220A	Cost Control-Food & Bev Lab	1
—	—	Social/Behavioral Science Elective	3
Total			15

Spring Semester II

COE	121	Co-op Work Experience I	1
HRM	225	Beverage Management	3
HRM	240	Marketing for Hospitality	3
HRM	245	Human Resource Mgmt-Hosp	3
HRM	280	Mgmt Problems-Hospitality	3
—	—	Humanities/Fine Arts Elective	3
Total			16

Total credit hours required for degree: 72

Human Services Technology

A 45 38 0

Associate of Applied Science

Contact: (336) 334-4822, ext. 55054

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

Students will take courses from a variety of academic disciplines. Core courses emphasize the development of relevant knowledge, skills, and attitudes necessary to work successfully in human services. Fieldwork or internship experience will provide opportunities for the practical application of knowledge and skills learned in the classroom.

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

Program Outcomes:

Upon successful completion of the Human Services Technology Associate Degree program, the graduate should be able to:

- Demonstrate awareness of human behavior and development from a biological, psychological, sociological and spiritual perspective
- Demonstrate skills in best practices that support client care within human services organizations
- Apply cultural competency skills for working with clients from a variety of different ethnicities and backgrounds
- Apply skills for addressing human services issues in community settings

Note: All or some of the courses in this program may transfer to a 4-year institution. Please see your advisor and/or transfer institution of interest.

Fall Semester I			Credits
CIS	110	Introduction to Computers	3
ENG	111	Expository Writing	3
HSE	110	Introduction to Human Services	3
PSY	150	General Psychology	3
SAB	110	Substance Abuse Overview	3
SOC	210	Introduction to Sociology	3
Total			18

Spring Semester I

HSE	123	Interviewing Techniques	3
HSE	125	Counseling	3
SAB	135	Addictive Process	3
—	—	Second English Elective ¹	3
—	—	Second Psychology Elective ²	3
—	—	Sociology/Human Services Elective ³	3
Total			18

Summer Semester I

HSE	210	Human Services Issues	2
HSE	225	Crisis Intervention	3
Total			5

Fall Semester II

COE	111	Co-Op Work Experience I	1
COE	115	Work Experience Seminar I	1
HSE	220	Case Management	3
PSY	265	Behavior Modification	3
—	—	Biology/Math Elective ⁴	3-4
—	—	Social Behavioral Science Elective	3
Total			14-15

Spring Semester II

COE	121	Co-Op Work Experience II and	1
COE	125	Work Experience Seminar II	1
GRO	120	Gerontology	3
HSE	112	Group Process I	2
—	—	Communications Elective ⁵	3
—	—	Humanities/Fine Arts Elective	3
—	—	Sociology/Human Services Elective ³	3
Total			16

Total credit hours required for degree: 71-72

¹Second English Electives

ENG 112
ENG 114

²Second Psychology Electives

PSY 241
PSY 281

³Sociology/Human Services Electives

SOC 213 SOC 220
HSE 245 SAB 137

⁴Biology/Math Electives

BIO 110 MAT 110
MAT 115 MAT 140

⁵Communications Electives

COM 110
COM 120
COM 231

Human Services Technology Mental Health Concentration

A 45 38 C

Associate of Applied Science

Contact: (336) 334-4822, ext. 55054

The Human Services Technology/Mental Health Concentration prepares students for job opportunities in the mental health field. The curriculum enables students to understand culturally and emotionally challenged, developmentally disabled, and addicted clients through a variety of models and diagnoses.

Students will take course work which includes a history of the mental health movement, current developments and future trends, and theoretical models affecting individual development and behavior in a diverse client population. Fieldwork experiences provide opportunities for application of knowledge in agency and institutional settings.

Graduates should qualify for positions in mental health treatment centers serving a diverse, multicultural client population in public and private settings. Graduates are able to work with individuals, families, groups, organizations, and communities in providing a therapeutic arena of care.

Program Outcomes:

Upon successful completion of the Human Services Technology/Mental Health Technology degree, the graduate should be able to:

- Implement general clinical skills necessary for working with clients with mental health and co-occurring disorders
- Implement general skills for identifying bio-psychosocial stressors that contribute to mental health disorders and matching clients with available community resources
- Implement general clinical skills and empathetic attitude necessary to treat clients with mental health disorders
- Note: All or some of the courses in this program may transfer to a 4-year institution. Please see your advisor and/or transfer institution of interest.

Fall Semester I			Credits
CIS	110	Introduction to Computers	3
ENG	111	Expository Writing	3
HSE	110	Introduction to Human Services	3
PSY	150	General Psychology	3
SAB	110	Substance Abuse Overview	3
SOC	210	Introduction to Sociology	3
Total			18

Spring Semester I

HSE	123	Interviewing Techniques	3
HSE	125	Counseling	3
SAB	135	Addictive Process	3
MHA	150	Mental Health Systems	3
—	—	Second English Elective ¹	3
—	—	Second Psychology Elective ²	3
Total			18

Summer Semester I

HSE	210	Human Services Issues	2
HSE	225	Crisis Intervention	3
Total			5

Fall Semester II

COE	111	Co-op Work Experience I	1
COE	115	Work Experience Seminar I	1
HSE	220	Case Management	3
PSY	265	Behavior Modification	3
MHA	155	Psychological Assessment	3
—	—	Biology/Math Elective ⁴	3-4
Total			14-15

Spring Semester II

HSE	226	Mental Retardation	3
HSE	112	Group Process I	2
MHA	240	Advocacy	2
SOC	220	Social Problems	3
—	—	Communications Elective ⁴	3
—	—	Humanities/Fine Arts Elective	3
Total			16

Total credit hours required for degree: 71-72

¹Second English Electives

ENG 112
ENG 114

²Second Psychology Electives

PSY 241
PSY 281

³Biology/Math Electives

BIO 110 MAT 110
MAT 115 MAT 140

⁴Communications Electives

COM 110
COM 120
COM 231

Mental Health Technology

A 45 38 C C1

Certificate

Available only to students with a minimum of a Bachelor's degree in a related discipline.

The Human Services Technology department offers a Certificate in Mental Health. The Certificate is designed for those individuals who already have a degree in a like field, such as counseling, psychology, human services, or social work, and are seeking additional knowledge in the area of Mental Health and/or State Certification/Licensure. The certificate verifies receipt of 17 mental health-specific hours of study and may be used towards an initial certification/licensure or their renewal. If you already have a degree but it is not in a like field, you will be required to take additional courses prior to or in conjunction with those required for the certificate.

This certificate is designed to enhance mental health knowledge and skills for a person seeking to enter or advance in the mental health profession.

Program Outcomes:

Upon successful completion of the Human Services Technology/Mental Health Technology certificate, the graduate should be able to:

- Describe mental health issues and appropriate protocols in intervention for assessment, diagnosis, stabilization, crisis intervention, and treatment.
- Supply principles of mental disorders, services and treatment protocols
- Implement mental health services skills necessary for entry into the mental health or human services fields

Fall Semester I			Credits
MHA	155	Psychological Assessment	3
PSY	265	Behavior Modification	3
HSE	220	Case Management or	3
HSE	225	Crisis Intervention (Summer Sem.)	(3)
Total			9

Spring Semester I			
MHA	150	Mental Health Systems	3
MHA	240	Advocacy	2
HSE	226	Mental Retardation	3
Total			8

Total credit hours required for certificate: 17

Human Services Technology Substance Abuse Concentration

A 45 38 E

Associate of Applied Science

Contact: (336) 334-4822, ext. 55054

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

Students take courses from a variety of academic disciplines. Core courses emphasize the development of relevant knowledge, skills, and attitudes necessary to work successfully in human services. Fieldwork or internship experience will provide opportunities for the practical application of knowledge and skills learned in the classroom.

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

Program Outcomes:

Upon successful completion of the Human Services Technology/Substance Abuse Associate Degree program, the graduate should be able to:

- Develop and maintain skills in evidenced-based practices that support addictions treatment
- Demonstrate awareness of addictive processes as they relate to human behavior and development from a biological, psychological, sociological, and spiritual perspective
- Demonstrate the roles, functions, and ethical principles of addictions professionals
- Apply principles used to treat individuals with substance use disorders and co-occurring conditions
- Apply ethical principles for working with clients with substance use disorders
- Demonstrate critical thinking, problem solving abilities, and communication skills necessary for employment as a substance abuse professional

Note: All or some of the courses in this program may transfer to a 4-year institution. Please see your advisor and/or transfer institution of interest.

Fall Semester I			Credits
CIS	110	Introduction to Computers	3
ENG	111	Expository Writing	3
HSE	110	Introduction to Human Services	3
PSY	150	General Psychology	3
SAB	110	Substance Abuse Overview	3
SOC	210	Introduction to Sociology	3
Total			18

Spring Semester I			
HSE	123	Interviewing Techniques	3
HSE	125	Counseling	3
SAB	135	Addictive Process	3
—	—	Communications Elective ¹	3
—	—	Second English Elective ²	3
—	—	Second Psychology Elective ³	3
Total			18

Summer Semester I			
HSE	210	Human Services Issues	2
HSE	225	Crisis Intervention	3
Total			5

Fall Semester II			
COE	111	Co-op Work Experience I	1
COE	115	Work Experience Seminar I	1
SAB	125	SAB Case Management	3
SAB	120	Intake and Assessment	3
—	—	Second Psychology Elective ³	3
—	—	Biology/Math Elective ⁴	3-4
Total			14-15

Spring Semester II			
COE	121	Co-op Work Experience II	1
COE	125	Work Experience Seminar II	1
SAB	210	Substance Abuse Counseling	3
HSE	112	Group Process I	2
SAB	240	SAB Issues in Client Service	3
—	—	Humanities/Fine Arts Elective	3
—	—	Substance Abuse (SAB) Elective ⁵	3
Total			16

Total credit hours required for degree: 71-72

¹Communications Electives

COM 110

COM 120

COM 231

²Second English Electives

ENG 112

ENG 114

³Second Psychology Electives

PSY 241 or PSY 281

SOC 213 or PSY 265 or SOC 225

⁴Biology/Math Electives

BIO 110 MAT 110

MAT 115 MAT 140

⁵Substance Abuse (SAB) Electives

SAB 137

SAB 230

Human Services Technology Substance Abuse Treatment

A 45 38 E C2

Certificate

Available only to students with a minimum of a Bachelor's degree in a related discipline.

(Certificate begins each Spring Semester)

The Human Services Technology department offers a Certificate in Substance Abuse Treatment. The Certificate is designed for those individuals who already have a degree in a like field, such as counseling, psychology, human services, or social work, and are seeking additional knowledge in the area of substance abuse and/or State Certification/Licensure. The certificate verifies receipt of 18 substance abuse-specific hours of study and may be used towards the initial Certification/Licensure or their renewal through the North Carolina Substance Abuse Professional Practice Board. If you already have a degree but it is not in a like field, you will be required to take additional courses prior to or in conjunction with those required for the certificate.

Program Outcomes:

Upon successful completion of the Human Services Technology/ Substance Abuse Treatment certificate, the graduate should be able to:

- Demonstrate awareness of addictive processes as they relate to human behavior and development from a biological, psychological, sociological, and spiritual perspective
- Meet the education requirements needed to take the North Carolina Substance Abuse Professional Practice Board certificate exam
- Note: This certificate does not provide all of the requirements for certification or licensure in the substance abuse field. See program advisor for additional requirements.

Spring Semester I		Credits
SAB 110	Substance Abuse Overview	3
SAB 135	Addictive Process	3
Total		6

Fall Semester I		
SAB 120	Intake and Assessment	3
SAB 210	Substance Abuse Counseling	3
Total		6

Spring Semester II		
SAB 230	Family Therapy or	3
SAB 137	Co-Dependency	(3)
SAB 240	SAB Issues in Client Service	3
Total		6

Total credit hours required for certificate: 18

Industrial Systems Technology

A 50 24 0

Associate of Applied Science

Contact: (336) 334-4822, ext. 53105

The Industrial Systems Technology curriculum is designed to prepare individuals to safely service, maintain, repair, or install equipment. Instruction includes theory and skill training needed for inspecting, testing, troubleshooting, and diagnosing industrial equipment and physical facilities.

Students will learn multi-craft technical skills in blueprint reading, electricity, hydraulics/pneumatics, machining, welding, and various maintenance 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.

Program Outcomes:

Upon successful completion of the Industrial Systems Technology program, the graduate should be able to:

- Inspect industrial systems
- Maintain industrial systems
- Troubleshoot industrial systems
- Repair industrial systems
- Perform calculations related to industrial systems
- Maintain a safe work environment
- Communicate effectively in the workplace
- Demonstrate employability skills in the workplace

Fall Semester I			Credits
BPR	135	Schematics & Diagrams	2
EGR	125	Applied Software for Technicians	2
ELC	112	DC/AC Electricity	5
ENG	111	Expository Writing	3
MNT	110	Intro to Maintenance Procedures	2
—	—	MAT Elective ¹	3
ENG	111	Expository Writing	3
Total			17

Spring Semester I			
AHR	120	HVACR Maintenance	2
ELC	117	Motors and Controls	4
HYD	110	Hydraulics/Pneumatics	3
WLD	112	Basic Welding Processes	2
—	—	Communications Elective ²	3
—	—	Social/Behavioral Science ³	3
Total			17

Summer Semester I

ELC	128	Introduction to PLC	3
ELC	115	Industrial Wiring	4
ISC	112	Industrial Safety	2
Total			9

Fall Semester II

ELC	130	Adv Motors/Controls	3
ELC	228	PLC Applications	4
MEC	111	Machine Processes I	3
MNT	263	Electro-Pneu Components	4
Total			14

Spring Semester II

ELC	229	Applications Projects or	2
COE	112	Cooperative Work Experience	(2)
ELN	229	Industrial Electronics	4
PCI	162	Instrumentation Controls	3
—	—	Humanities/Fine Arts Elective ⁴	3
Total			12

Total credit hours required for degree: 69

¹Math Elective Electives

MAT 110 MAT 121
MAT 115
MAT 120

²Communications Electives

COM 110
COM 231
ENG 114

³Social/Behavioral Science Electives

ECO 251
PSY 150
SOC 210

⁴Humanities/Fine Arts Electives

HUM 110
HUM 115
PHI 240

Information Systems Security

A 25 27 0

Associate of Applied Science

Contact: (336) 334-4822, ext. 50325

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.

Program Outcomes:

Upon successful completion of the Information Systems Technology program, the graduate should be able to:

- Identify current ethical issues in computer technology
- Use appropriate software to monitor network traffic
- Assess various network topologies
- Identify basic security threats
- Create strategic plans to enhance network security
- Assess various network topologies
- Implement Local Area Networks using both, static and dynamic addressing techniques, including sub netting
- Install domain-based Local Area Networks
- Configure domain-based Local Area Networks according to accepted standards

Fall Semester I			Credits
CIS	110	Introduction to Computers	3
CTS	115	Info Sys Bus Concepts	3
NET	125	Networking Basics	3
NOS	110	Operating System Concepts	3
—	—	Humanities/Fine Arts Elective	3
Total			15

Spring Semester I			Credits
MAT	121	Algebra/Trigonometry I	3
SEC	110	Security Concepts	3
ENG	111	Expository Writing	3
NET	126	Routing Basics	3
NOS	130	Windows Single User	3
Total			15

Summer Semester I

CIS	115	Intro to Prog & Logic	3
—	—	Communications Elective ²	3
ENG	114	Professional Research and Reporting	3
Total			9

Fall Semester II

NOS	120	Linux/UNIX Single User	3
SEC	150	Secure Communications	3
SEC	160	Secure Admin I	3
SEC	220	Defense in Depth	3
—	—	Information Systems Security Technical Elective ¹	3
Total			15

Spring Semester II

DBA	110	Database Concepts	3
SEC	210	Intrusion Detection	3
SEC	289	Security Capstone Project	3
—	—	Social/Behavioral Science	3
—	—	Information Systems Security Technical Elective ¹	3
Total			15

Total credit hours required for degree: 69

¹Information Systems Security Technical Electives

Choose 6 credit hours from:

CCT 250	NET 226
CCT 251	NOS 220
CTS 287	NOS 230
NET 110	NOS 231
NET 175	SEC 170
NET 225	

²Communications Electives

COM 110
COM 120

Manufacturing Technology

A 50 32 0

Associate of Applied Science

Contact: (336) 334-4822, ext. 53088

These curriculums are designed to prepare students through the study and application of the principles for developing, implementing and improving integrated systems involving people, materials, equipment and information as leaders in an industrial or manufacturing setting.

Course work includes mathematics, systems analysis, leadership and management skills, quality and productivity improvement methods, cost analysis, facilities planning, manufacturing materials and processes, and computerized production methods.

Graduates should qualify as quality improvement technicians, quality assurance and control technicians, front-line supervisors, production planners, inventory supervisors, and manufacturing technicians.

A course of study that prepares students to use basic engineering principles and technical skills to identify and resolve production problems in the manufacture of products. machine operations and CNC principles, production line operations, instrumentation, computer-aided manufacturing (CAM) and other computerized production techniques, manufacturing planning, quality control, quality assurance and informational infrastructure. Graduates should qualify for employment as a manufacturing technician, quality assurance technician, CAD/CAM technician, team leader, or research and development technician.

Program Outcomes:

Upon successful completion of the Manufacturing Technology program, the graduate should be able to:

- Interpret blueprint drawings
- Demonstrate operations on milling machines, bench grinders, power saws, lathes, and drill presses
- Demonstrate quality control operations
- Demonstrate hydraulic and welding principles

Fall Semester I			Credits
MAC	114	Introduction to Metrology	2
MAC	111	Machining Technology	6
BPR	111	Print Reading	2
CIS	110	Introduction to Computers	3
DFT	119	Basic CAD	2
Total			15

Spring Semester I			
BPR	121	Blueprint Reading: Mechanical	2
ENG	111	Expository Writing	3
ISC	112	Industrial Safety	2
MAC	112	Machining Technology II	6
MAC	121	Introduction to CNC	2
Total			15

Summer Semester I

BPR	221	Interpretation of GD & T	2
MEC	145	Manufacturing Materials	3
—	—	Manufacturing Tech. Technical Elective ¹	3
Total			8

Fall Semester II

ISC	132	MFG Quality Control	3
MEC	110	Introduction to CAD/CAM	2
—	—	Social Science Elective ²	3
—	—	MAT Elective ³	3
—	—	Manufacturing Tech. Technical Elective ¹	2-3
Total			13-14

Spring Semester II

ATR	112	Intro to Automation	3
ENG	114	Professional Research & Reporting	3
—	—	Manufacturing Tech. Technical Elective ¹	3
—	—	Manufacturing Tech. Technical Elective ¹	3
—	—	Humanities/Fine Art Elective ⁴	3
Total			15

Total credit hours required for degree: 66-67

¹Manufacturing Technology Specialization Electives

Choose a minimum of 12 hours from a single set. In either set you are limited to a maximum of 9 hours from the following prefixes: ELC, ELN & WLD

- DFT 151, DFT 152, ELC 112, ELC 131, ELN 131, ELN 132, ELN 133
- MEC 231, MEC 232
- HYD 110, HYD 112, WLD 111, WLD 112, WLD 115, WLD 121, WLD 141

Students must select options from only one specialty area unless otherwise approved by the department chair.

²Social/Behavioral Science Electives

ECO 251
GEO 111
PSY 150
SOC 210

³Mathematics Electives

MAT 120
MAT 121

⁴Humanities/Fine Arts Electives

HUM 110
HUM 115
PHI 240

Manufacturing Technology

A 50 32 0 D1

Diploma

The Manufacturing Technology Diploma introduces the student to a basic understanding of the manufacturing field, including blueprint reading, metrology, quality control, and choices for the student to pursue welding, electrical, hydraulics, and computer aided manufacturing.

Program Outcomes:

Upon successful completion of the Manufacturing Technology diploma, the graduate should be able to:

- Complete projects using milling machines, bench grinders, power saws, lathes, and drill presses
- Demonstrate quality control operations
- Produce rapid prototyping models
- Demonstrate hydraulic and welding principles or computer-aided drafting, electronic, or CAD/CAM principles
- Students completing this diploma will acquire a minimum of 2 (possibly 6) National Institute for Metalworking Skills (NIMS).

Fall Semester I			Credits
BPR	111	Print Reading	2
—	—	Math Elective ²	3
DFT	119	Basic CAD	2
MAC	114	Introduction to Metrology	2
MAC	111	Machining Technology	6
Total			15

Spring Semester I			
BPR	121	Blueprint Reading: Mechanical	2
COM	120	Intro to Interpersonal Communication	3
MAC	112	Machining Technology II	6
MAC	121	Introduction to CNC	2
MEC	110	Introduction to CAD/CAM	2
Total			15

Summer Semester I			
MEC	145	Manufacturing Materials	3
—	—	Manufacturing Tech. Technical Elective ¹	2-6
Total			15

Fall Semester II			
ISC	112	Industrial Safety	2
—	—	Manufacturing Tech. Technical Elective ¹	2-6
Total			4-8

Spring Semester II			
ISC	132	MFG Quality Control	3
Total			3

Total credit hours required for diploma: 48

¹Manufacturing Technology Specialization Electives.

Choose a minimum of 6 hours from a single set.

DFT 151, DFT 152, ELC 112, ELC 131, ELN 131, ELN 132, ELN 141, HYD 110, HYD 112, WLD 111, WLD 112, WLD 115, WLD 121, WLD 141

²Math Electives

MAT 120

MAT 121

Students must select options from only one specialty area unless otherwise approved by the department chair.

Mechanical Engineering Technology

A 40 32 0

Associate of Applied Science

Contact: (336) 334-4822, ext. 53034

These curriculums are designed to prepare students through the study and application of principles from mathematics, natural sciences, and technology and applied processes based on these subjects.

Course work includes mathematics, natural sciences, engineering sciences and technology.

Graduates should qualify to obtain occupations such as technical service providers, materials and technologies testing services, process improvement technicians, engineering technicians, industrial and technology managers, or research technicians

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 American Society of Quality Control, American Society of Mechanical Engineers, and National Institute of Certification in Engineering Technologies.

Program Outcomes:

Upon successful completion of the Mechanical Engineering degree, the graduate should be able to:

- Solve technical problems using knowledge of mathematics, science and engineering.
- Demonstrate hands-on competence in the application of Mechanical Engineering Technology.
- Demonstrate hands-on competences in manufacturing and mechanical production.
- Use computers for simple analysis and for producing mechanical engineering drawings using Computer-Aided Drafting applications.
- Demonstrate critical thinking to solve technical problems and communicate results effectively.
- Demonstrate ethical behavior in a classroom and laboratory setting.
- Apply math and scientific principles to solving engineering problems.

Fall Semester I			Credits
ENG	111	Expository Writing	3
—	—	MAT Elective 1 ²	3
MEC	111	Machine Processes I	3
DFT	111	Technical Drafting I	2
DFT	111A	Technical Drafting I Lab	1
DFT	151	CAD I	3
Total			15

Spring Semester I			Credits
DFT	170	Engineering Graphics	3
ELC	111	Introduction to Electricity	3
—	—	Communications Elective ³	3
—	—	MAT Elective ²	3
PHY	131	Physics-Mechanics	4
Total			16

Summer Semester I			Credits
MEC	145	Manufacturing Materials I	3
DDF	211	Design Process I	4
Total			7

Fall Semester II			Credits
DFT	154	Intro Solid Modeling	3
MEC	110	Intro. To CAD/CAM	2
EGR	250	Static/Strength Of Materials	5
—	—	Mechanical Engineering Technical Elective ¹	2-3
—	—	Social/Behavioral Science Elective ⁴	3
Total			15-16

Spring Semester II			Credits
MEC	265	Fluid Mechanics	3
MEC	276	Capstone Design Project	1
—	—	Mechanical Engineering Technical Elective ¹	3
—	—	Mechanical Engineering Technical Elective ¹	2-3
—	—	Humanities/Fine Arts Elective ⁴	3
Total			12-13

Total credit hours required for degree: 65-67

¹Mechanical Engineering Technology Technical Electives

Choose a minimum of 7 credit hours.

ATR 280 MEC 231
DFT 253 DFT 254
DFT 259 MEC 267
MAC 121

²Math Electives Choose 1 Set:

MAT 121 and MAT 122
MAT 171 and MAT 172
MAT 175 and MAT 271

³Communications Electives

COM 110 COM 231
COM 120 ENG 114

⁴Social/Behavioral Science Electives

PSY 150 SOC 210

⁵Humanities/Fine Arts Electives

HUM 110 HUM 115

Mechatronics Engineering Technology

A 40 35 0

Associate in Applied Science

Contact: (336) 334-4822, ext. 53105

These curriculums are designed to prepare students through the study and application of principles from mathematics, natural sciences, and technology and applied processes based on these subjects.

Course work includes mathematics, natural sciences, engineering sciences and technology.

Graduates should qualify to obtain occupations such as technical service providers, materials and technologies testing services, process improvement technicians, engineering technicians, industrial and technology managers, or research technicians. A course of study that prepares the students to use basic engineering principles and technical skills in developing and testing automated, servomechanical, and other electromechanical systems. Includes instruction in prototype testing, manufacturing and operational testing, systems analysis and maintenance procedures. Graduates should be qualified for employment in industrial maintenance and manufacturing including assembly, testing, startup, troubleshooting, repair, process improvement, and control systems, and should qualify to sit for Packaging Machinery Manufacturers Institute (PMMI) mechatronics or similar industry examinations.

Program Outcomes:

Upon successful completion of the Mechatronics program, the graduate should be able to:

- Demonstrate proficiency in Mechatronics systems
- Perform preventive maintenance on a variety of industrial systems involving electronics, sensors, actuators, fluid mechanics, instrumentation, and controls
- Write programs for controllers used in Mechatronics systems
- Demonstrate methods for isolating problems in mechatronics systems
- Effectively communicate function of components used in a loop control system
- Demonstrate the professional employability skills that are expected in the workplace
- Perform all work within safety guidelines established by Mechatronics department and equipment manufacturers

Fall Semester I			Credits
DFT	119	CAD	2
ELC	112	DC/AC Electricity	5
EGR	125	Appl Software for Tech	2
ENG	111	Expository Writing	3
MAT	121	Algebra/Trigonometry	3
Total			15

Spring Semester I

ATR	112	Intro to Automation	3
ELC	117	Motors and Controls	4
HYD	110	Hydraulics/Pneu	3
PHY	131	Physics-Mechanics	4
MAT	122	Algebra/Trigonometry II	3
Total			17

Summer Semester I

ENG	114	Professional Research & Reporting	3
MEC	130	Mechanisms	3
ELC	128	Introduction to PLC	3
ISC	112	Industrial Safety	2
Total			11

Fall Semester II

ELC	130	Adv Motors/Controls	3
ELC	213	Instrumentation	4
ELC	228	PLC Applications	4
MAT	223	Applied Calculus	3
ATR	211	Robot Programming	3
Total			17

Spring Semester II

ELC	229	Applications Project or	2
COE	112	Cooperative Work Experience	(2)
HUM	115	Critical Thinking	3
ATR	212	Industrial Robots	3
MNT	250	PLC Interfacing	4
SOC	220	Social Problems	3
Total			15

Total credit hours required for degree: 75

Medical Assisting

A 45 40 0

Associate of Applied Science

Contact: (336) 334-4822, ext. 50073

Limited Enrollment Program:

Contact the Enrollment Services Office for Program admission requirements and Program application deadlines.

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, computer operations; assisting with examinations/treatments, performing routine laboratory procedures, electrocardiography, supervised medication administration; and ethical/legal issues associated with patient care.

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

The Guilford Technical Community College's Medical Assisting program in Jamestown, NC is accredited by the Commission on Accreditation of Allied Health Education Programs, 1361 Park Street, Clearwater, FL 33756, (727) 210-2350 (www.caahep.org), upon recommendation of the Medical Assisting Education Review Board (MAERB).

The program has a 100% pass rate on the American Association of Medical Assistants (AAMA) Certification exam. GTCC's Medical Assisting program has a 95% job placement rate for its graduates actively seeking employment.

Potential applicants should follow the admissions requirements and specific deadlines available through the college admissions office. Suggested high school courses for individuals desiring a career as a Medical Assistant include advanced biology with lab, algebra, and keyboarding/computer applications.

Beginning with the January 2001 administration of the AAMA certification examination, applicants that have been found guilty of a felony or pleaded guilty to a felony will not be eligible to sit for the certification examination. Students may request the opportunity to submit written evidence/request a hearing before the certifying board of the AAMA in order to obtain a waiver. See Department Chairperson for appeal process.

All developmental course work must be completed through ENG 090, RED 090, MAT 070 in addition to a high school/college level biology with lab completed with a "C" or higher. A keyboard proficiency test with a minimum of 35 WPM with three or less errors or successful completion of OST 131 is required prior to acceptance into the program.

Program Outcomes:

Upon successful completion of the Medical Assisting Associate Degree program, the graduate should be able to:

- Apply effective written and oral communication skills with consumers and co-workers in the role of medical assistant

- Create solutions to problems related to administrative, clinical, and laboratory procedures
- Implement policies and procedure manuals related to administrative, clinical, and laboratory procedures
- Demonstrate mathematical calculations related to generating laboratory results, administrative bookkeeping, and administration of medications
- Project professionalism by maintaining positive interpersonal skills, being a team player, showing initiative and responsibility, and practicing in a legal and ethical manner
- Demonstrate 100% competency in the Cognitive domains (knowledge) and Psychomotor/Affective domains (skills) required for success as an entry level Medical Assisting graduate

Fall Semester I			Credits
MED	110	Orientation to Medical Assisting	1
MED	118	Medical Law and Ethics	2
MED	121	Medical Terminology I	3
MED	130	Administration Office Procedures I	2
ENG	111	Expository Writing	3
—	—	Computer Elective ¹	3
—	—	Math Elective ²	3
Total			17

Spring Semester I			Credits
MED	122	Medical Terminology II	3
MED	131	Administration Office Procedures II	2
MED	274	Diet Therapy/Nutrition	3
BIO	163	Basic Anatomy and Physiology	5
—	—	Communications Elective ³	3
Total			16

Summer Semester I			Credits
MED	114	Professional Interaction in Health Care	1
MED	140	Exam Room Procedures I	5
—	—	Second English Elective ⁴	3
Total			9

Fall Semester II			Credits
MED	150	Laboratory Procedures I	5
MED	240	Exam Room Procedures II	5
MED	270	Symptomatology	3
MED	272	Drug Therapy	3
Total			16

Spring Semester II			Credits
MED	260	MED Clinical Practicum	5
MED	262	Clinical Perspectives	1
MED	264	Medical Assisting Overview	2
MED	276	Patient Education	2
PSY	150	General Psychology	3
—	—	Humanities/Fine Arts Elective	3
Total			16

Total credit hours required for degree: 74

¹Computer Electives

CIS 110 OST 137

²Math Elective Electives

MAT 110 MAT 115

³Communications Electives

COM 110 COM 231

⁴Second English Electives

ENG 112

ENG 114

Medical Office Administration

A 25 31 0

Associate of Applied Science

Contact: (336) 334-4822, ext. 50200

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.

Program Outcomes:

Upon successful completion of the Medical Office Administration degree, the graduate should be able to:

- Apply concepts of various software packages to a variety of work settings
- Communicate orally and in writing with patients and other office personnel
- Coordinate office workflow and processes
- Manage medical records both electronically and manually
- Analyze facts and circumstances in the medical office environment to make legal and ethical decisions.
- Apply office skills to produce professional documents
- Use medical terminology effectively
- Utilize various reference materials in a variety of situations
- Execute financial processes for reimbursement of medical claims in a healthcare facility

Fall Semester I			Credits
ENG	111	Expository Writing	3
OST	131	College Keyboarding	2
OST	137	Office Software Applications	3
OST	141	Medical Terminology I	3
OST	148	Medical Coding, Billing, & Insurance	3
OST	164	Text Editing Applications	3
Total			17

Spring Semester I			
MED	116	Intro to Anatomy & Physiology	4
OST	138	Adv Software Apps	3
OST	142	Medical Terminology II	3
OST	153	Office Finance Solutions	2
—	—	Humanities/Fine Arts Elective	3
Total			15

Summer Semester I

OST	136	Word Processing	3
OST	149	Medical Legal Issues	3
—	—	Social/Behavioral Science Elective	3
Total			9

Fall Semester II

OST	243	Medical Office Simulation	3
OST	247	Procedure Coding	2
OST	248	Diagnostic Coding	2
—	—	Communications Elective ²	3
—	—	Math Elective ³	3
—	—	Medical Office Admin (OST) Technical Elective ¹	2-3
Total			15-16

Spring Semester II

OST	181	Introduction to Office Systems	3
OST	286	Professional Development	3
OST	289	Administrative Office Management	3
COE	111	Co-op Work Experience ⁵	1
COE	115	Work Experience Seminar I	1
—	—	Medical Coding Elective ⁴	3
Total			13-14

Total credit hours required for degree: 69-71

¹Medical Office Administration (OST) Technical Electives

Choose 1 course from:

OST 132	HMT 110
OST 165	OST 140
OST 233	OST 184
OST 284	OST 236
OST 147	OST 143

²Math Elective Electives

MAT 115
MAT 140

³Communications Electives

COM 110
COM 120

⁴Medical Coding Electives

MED 232
OST 281

⁵Department Chair approval required to substitute OST 188 for COE 111 and COE 115.

Courses in this program prepare the student for the Microsoft Office User Specialist Exams. Students will be required to purchase a voucher for these exams as part of the required course materials for each course in the program. Individual exams will be administered at the end of each of the individual courses. When a voucher is required for a particular course, it will be identified on the syllabus and in prominent locations such as the Moodle site and GTCC Bookstore.

Medical Office Billing & Coding

A 25 31 0 C2

Certificate

Upon successful completion of the Medical Office Billing & Coding certificate, the graduate will be prepared to sit for the Certified Professional Coders Exam (CPC) administered through the American Association of Certified Professional Coders (AAPC).

Program Outcomes:

Upon successful completion of the Medical Office Billing & Coding certificate, the graduate should be able to:

- Use medical terminology effectively
- Utilize various reference materials in a variety of situations
- Code in a medical office or other outpatient facility

Fall Semester I			Credits
OST	141	Medical Terminology I	3
OST	148	Medical Coding, Billing, & Insurance	3
OST	149	Medical Legal Issues	3
Total			9

Spring Semester I			Credits
OST	142	Medical Terminology II	3
OST	247	Procedure Coding	2
OST	248	Diagnostic Coding	2
Total			7

Summer Semester I			Credits
MED	232	Medical Insurance Coding	2
Total			2

Total credit hours required for certificate: 18

Hospital Billing & Coding

A 25 31 0 C4

Certificate

Upon successful completion of the Hospital Billing & Coding certificate, the graduate will be prepared to sit for the Certified Professional Coders-Hospital Exam (CPC-H) administered through the American Association of Certified Professional Coders (AAPC).

Program Outcomes:

Upon successful completion of the Hospital Billing & Coding certificate, the graduate should be able to:

- Use medical terminology effectively
- Utilize various reference materials in a variety of situations
- Code in a hospital or other inpatient facility

Fall Semester I			Credits
OST	141	Medical Terminology I	3
OST	148	Medical Coding, Billing, & Insurance	3
Total			6

Spring Semester I

OST	142	Medical Terminology II	3
OST	247	Procedure Coding	2
OST	248	Diagnostic Coding	2
Total			7

Summer Semester I OR Fall II

OST	281	Emerg Issues In Medical Office	3
Total			3

Total credit hours required for certificate: 16

Electronic Medical Records

A 25 31 0 C5

Certificate

Upon successful completion of the Electronic Medical Records Certificate, the graduate will be proficient in the skill of managing medical records, both manually and electronically. This certificate also prepares the student to utilize Allscripts®, an industry recognized practice management/electronic health record system.

Program Outcomes:

Upon successful completion of the Electronic Medical Records certificate, the graduate should be able to:

- Manage medical records both electronically and manually
- Use medical terminology effectively
- Utilize various reference materials in a variety of situations

Fall Semester I			Credits
OST	137	Office Software Applications	3
OST	141	Medical Terminology I	3
OST	148	Medical Coding, Billing, & Insurance	3
Total			9

Spring Semester I

OST	142	Medical Terminology I	3
OST	184	Records Management	3
OST	243	Medical Office Simulation	3
Total			9

Total credit hours required for certificate: 18

Networking Technology

A 25 34 0

Associate of Applied Science

Contact: (336) 334-4822, ext. 50325

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.

Program Outcomes:

- Assess various network topologies
- Identify various networking security threats
- Install basic network components
- Test basic network components
- Implement Local Area Networks using both, static and dynamic addressing techniques, including sub netting
- Install domain-based Local Area Networks
- Configure domain-based Local Area Networks
- Diagnose common network problems
- Create LAN to Internet connections
- Install and test network client and server software
- Develop basic configuration of routers and switches
- Solve basic tasks expected of a Network Administrator, including the management of user accounts, shared resources, and network security

Gateway Courses: NET 125 and NOS 130. A minimum grade of C required in both.

Fall Semester I			Credits
ACA	111	College Student Success or	1
ACA	112	Intro to Distance Learning	(1)
CIS	110	Introduction to Computers	3
ENG	111	Expository Writing	3
NET	125	Networking Basics	3
NOS	110	Operating System Concepts	3
MAT	140	Survey of Mathematics	3
Total			16

Spring Semester I			
CIS	115	Intro to Prog & Logic	3
CTS	120	Hardware/Software Support	3
ENG	114	Professional Research and Reporting	3
NET	126	Routing Basics	3
NOS	130	Windows Single User	3
Total			15

Summer Semester I			
DBA	110	Database Concepts	3
CTS	115	Information Systems Business Concepts	3
Total			6

Fall Semester II			
NET	225	Routing & Switching I	3
NOS	120	Linux/UNIX Single User	3
—	—	Networking (NET) Elective ¹	3
NOS	230	Windows Admin I	3
SEC	110	Security Concepts	3
Total			15

Spring Semester II			
COM	120	Intro to Interpersonal Communication	3
NET	226	Routing & Switching II	3
NET	289	Networking Project	3
—	—	Humanities/Fine Arts Elective	3
—	—	Social/Behavioral Science	3
—	—	Networking (NET) Elective	3
Total			18

Total credit hours required for degree: 70

Networking Technical Electives¹

Take a minimum of 6 credits from :

CTS 130 CTS 230
CTS 210 NET 110
CTS 287 NET 130
NET 111 NET 273
NET 175 NOS 240
NOS 220 SEC 160
WEB 110

Network Routing

A 25 34 0 C1

Certificate

The Networking Technology Network Routing Certificate focuses on the basic skills necessary to design and troubleshoot corporate networks using industry standards on Cisco Systems equipment. Using a replicated business environment, graduates will be able to quickly identify potential issues with network performance, network connectivity, and security considerations based on the knowledge and skills gained in the program. This program prepares the learner to seek entry-level career positions such as: Network Technician, Help Desk Technician, and entry level Network Support, among others.

Program Outcomes:

Upon successful completion of the Network Routing certificate, the graduate should be able to:

- Assess various network topologies
- Install basic network components
- Test basic network components
- Diagnose common network problems
- Develop basic configurations of routers and switches

Courses			Credits
NOS	110	Operating System Concepts	3
NET	125	Networking Basics	3
NET	126	Routing Basics	3
NET	225	Routing & Switching I	3
NET	226	Routing & Switching II	3
Total			15

Total credit hours required for certificate: 15

Associate Degree Nursing

A 45 11 0

Associate of Applied Science

Contact: (336) 334-4822, ext. 50426 or 50473

Limited Enrollment Program:

Contact the Enrollment Services Office for Program admission requirements and Program application deadlines.

The Associate Degree Nursing curriculum provides knowledge, skills, and strategies to integrate safety and quality into nursing care, to practice in a dynamic environment, and to meet individual needs which impact health, quality of life, and achievement of potential.

Course work includes and builds upon the domains of healthcare, nursing practice, and the holistic individual. Content emphasizes the nurse as a member of the interdisciplinary team providing safe, individualized care while employing evidence-based practice, quality improvement, and informatics.

Graduates of this program are eligible to apply to take the National Council Licensure Examination (NCLEX-RN). Employment opportunities are vast within the global health care system and may include positions within acute, chronic, extended, industrial, and community health care facilities.

The program offers two entry options for the beginning student. The student may apply for acceptance into the full-time day option or full-time evening/weekend option. The full-time day option begins each Fall semester; the full-time evening/weekend program begins each Spring semester.

The Associate Degree Nursing program provides the student with two exit options. The student who completes NUR 112 will be eligible to apply for Nurse Aide II listing (Nurse Aide I listing required). Successful completion of the program allows the individual to apply to take the NCLEX-RN. The State Board of Nursing may however deny licensure based on criminal background checks.

The program also offers an option for Licensed Practical Nurses who wish to further their education and be eligible to apply to take NCLEX-RN. The full-time day option begins each summer. This option requires three semesters to complete.

Program Outcomes:

Upon successful completion of the Associate Degree Nursing program, the graduate will be able to:

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

The Associate Degree Nursing is offered in three different program plans. Students must select a specific program plan at the time of application. The program plans are:

- Fall Semester Start--This is a day offering.
- Spring Semester Start--This is an evening/weekend offering.
- Summer Semester Start--This is for Returning LPNs only.

Fall Semester Start

Fall Semester I			Credits
NUR	111	Intro to Health Concepts	8
BIO	165	Anatomy and Physiology I	4
PSY	150	General Psychology	3
—	—	Communications Elective ¹	3
Total			18

Spring Semester I			Credits
NUR	112	Health-Illness Concepts ⁴	5
NUR	113	Family Health Concepts <u>or</u>	5
NUR	114	Holistic Health Concepts	5
BIO	166	Anatomy and Physiology II	4
PSY	241	Developmental Psychology	3
Total			17

Summer Semester I			Credits
NUR	113	Family Health Concepts <u>or</u>	5
NUR	114	Holistic Health Concepts	5
—	—	Computer Elective ²	2-3
Total			7-8

Fall Semester II			Credits
NUR	211	Health Care Concepts	5
NUR	212	Health System Concepts	5
ENG	111	Expository Writing	3
—	—	Humanities/Fine Arts Elective	3
Total			16

Spring Semester II			Credits
NUR	213	Complex Health Concepts	10
—	—	Second English Elective ³	3
Total			13

Total credit hours required for degree: 71-72

¹Communications Electives

COM 110
COM 120
COM 231

²Computer Electives

CIS 110
CIS 111

³Second English Electives

ENG 112
ENG 114

⁴Eligible to apply for Nurse Aide II listing. (Nurse Aide I listing required.)

Spring Semester Start

Spring Semester I			Credits
NUR	111	Intro to Health Concepts	8
BIO	165	Anatomy and Physiology I	4
PSY	150	General Psychology	3
—	—	Communications Elective ¹	3
Total			18

Summer Semester I			Credits
NUR	112	Health-Illness Concepts ⁴	5
—	—	Computer Elective ²	2-3
Total			7-8

Fall Semester I			Credits
NUR	113	Family Health Concepts	5
NUR	114	Holistic Health Concepts	5
BIO	166	Anatomy and Physiology II	4
PSY	241	Developmental Psychology	3
Total			17

Spring Semester II			Credits
NUR	211	Health Care Concepts	5
NUR	212	Health System Concepts	5
ENG	111	Expository Writing	3
—	—	Humanities/Fine Arts Elective	3
Total			16

Fall Semester II			Credits
NUR	213	Complex Health Concepts	10
—	—	Second English Elective ³	3
Total			13

Total credit hours required for degree: 71-72

¹Communications Electives

COM 110
COM 120
COM 231

²Computer Electives

CIS 110
CIS 111

³Second English Electives

ENG 112
ENG 114

⁴Eligible to apply for Nurse Aide II listing. (Nurse Aide I listing required.)

Summer Semester Start

LPNs are given advanced standing credit for NUR 111, NUR 112, NUR 113, NUR 114. General education course prerequisites include BIO 165, BIO 166, PSY 150, PSY 241, and COM 110 or COM 120, or COM 231.

Summer Semester I			Credits
NUR	214	Nursing Transition Concepts	4
—	—	Computer Elective ¹	2-3
Total			6(7)

Fall Semester I			
NUR	211	Health Care Concepts	5
NUR	212	Health Systems Concepts	5
ENG	111	Expository Writing	3
—	—	Humanities/Fine Arts Elective	3
Total			16

Spring Semester II			
NUR	213	Complex Health Concepts	10
—	—	Second English Elective ²	3
Total			13

Total credit hours required for degree: 75-76

¹Computer Electives

CIS 110

CIS 111

²Second English Electives

ENG 112

ENG 114

Practical Nursing

D 45 66 0

Diploma

Contact: (336) 334-4822 - ext. 50548 or 50426

The Practical Nursing curriculum prepares individuals with the knowledge and skills to provide nursing care to children and adults. Students will participate in assessment, planning, implementing, and evaluation nursing care. Graduates are eligible to apply to take the National Council Licensure Examination (NCLEX-PN) which is required for practice as a Licensed Practical Nurse. Employment opportunities include hospitals, rehabilitation/long-term care/home health facilities, clinics, and physicians' offices. The Practical Nursing program has one exit option. Students who complete NUR 102 are eligible to apply for Nurse Aide II listing (Nurse Aide I listing required).

Program Outcomes:

Upon successful completion of the practical nursing program, the student will be able to:

- Deliver safe and effective care within scope of practice.
- Deliver culturally-centered care to a variety of populations.
- Participate as an active member of the interdisciplinary health care team.
- Contribute to performance initiatives in the clinical setting.
- Access resources to communicate and support client care decisions.
- Integrate best practice while delivering client care.

Fall Semester I			Credits
NUR	101	Practical Nursing I	11
BIO	165	Anatomy/Physiology I	4
PSY	150	General Psychology	3
Total			18

Spring Semester I			
NUR	102	Practical Nursing II ¹	12
BIO	166	Anatomy/Physiology II	4
ENG	111	Expository Writing	3
Total			19

Summer Semester I			
NUR	103	Practical Nursing III	10
Total			10

Total credit hours required for diploma: 47

¹Eligible to apply for NA II listing (NA I listing is required)

Office Administration

A 25 37 0

Associate of Applied Science

Contact: (336) 334-4822, ext. 50200

The Office Administration curriculum prepares individuals for positions in administrative support careers. It equips office professionals to respond to the demands of a dynamic computerized workplace.

Students will complete courses designed to develop proficiency in the use of integrated software, oral and written communication, analysis and coordination of office duties and systems, and other support topics. Emphasis is placed on non-technical as well as technical skills.

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

Program Outcomes:

Upon successful completion of the Office Administration program, the graduate should be able to:

- Apply knowledge of various software packages to a variety of work settings
- Communicate orally and in writing with customers and other office personnel
- Coordinate office workflow and processes
- Manage office records both electronically and manually
- Analyze facts & circumstances in the office environment to make legal & ethical decisions.
- Apply office knowledge to produce professional documents
- Utilize various reference materials in a variety of situations

Fall Semester I			Credits
ACA	112	Intro to Distance Learning	1
ENG	111	Expository Writing	3
OST	131	Keyboarding	2
OST	136	Word Processing	3
OST	137	Office Software Applications	3
OST	164	Text Editing Applications	3
—	—	Social/Behavioral Science Elective	3
Total			18

Spring Semester I			
BUS	125	Personal Finance	3
OST	132	Keyboard Skill Building	2
OST	138	Advanced Software Applications	3
OST	165	Advanced Text Editing Applications	3
OST	184	Records Management	3
Total			14

Summer Semester I

BUS	115	Business Law I	3
OST	153	Office Finance Solutions	2
Total			5

Fall Semester II

OST	140	Internet Comm/Research	2
OST	233	Office Publications Design	3
OST	236	Adv Word/Information Processing	3
OST	284	Emerging Technologies	2
—	—	Communications Elective ²	3
—	—	Humanities/Fine Arts Elective	3
Total			16

Spring Semester II

COE	111	Co-op Work Experience ¹	1
COE	115	Work Experience Seminar I	1
OST	181	Introduction to Office Systems	3
OST	286	Professional Development	3
OST	289	Administrative Office Management	3
—	—	Math Elective ³	3
Total			14

Total credit hours required for degree: 67

¹Department Chair approval required to substitute OST 188 for COE 111 and COE 115.

²Communications Electives

COM 110
COM 120

³Math Elective Electives

MAT 115
MAT 140

Courses in this program prepare the student for the Microsoft Office User Specialist Exams. Students will be required to purchase a voucher for these exams as part of the required course materials for each course in the program. Individual exams will be administered at the end of each of the individual courses. When a voucher is required for a particular course, it will be identified on the syllabus and in prominent locations such as the Moodle site and GTCC Bookstore.

Software Applications

A 25 37 0 C2

Certificate

Upon successful completion of Software Applications certificate, the graduate will be prepared to take the Microsoft Office User Specialist Exam. Students will be required to purchase a voucher for these exams as part of the required course materials for each course in the program. Individual exams will be administered at the end of each of the individual courses. When a voucher is required for a particular course, it will be identified on the course syllabus and in prominent locations such as the Moodle site and GTCC Bookstore.

Program Outcomes:

Upon successful completion of the Software Applications certificate, the graduate should be able to:

- Apply knowledge of various software packages to a variety of work settings

Courses			Credits
OST	136	Word Processing	3
OST	137	Office Software Applications	3
OST	138	Advanced Software Applications	3
OST	184	Records Management	3
OST	284	Emerging Technologies	2
OST	236	Advanced Word/Information Processing	3
Total			17

Total credit hours required for certificate: 17

Paralegal Technology

A 25 38 0

Associate of Applied Science

Contact: (336) 334-4822, ext. 53082

The Paralegal Technology curriculum prepares individuals to work under the supervision of attorneys in performing routine legal tasks and assisting with substantive legal work. A paralegal/legal assistant may not practice law, give legal advice, or represent clients in a court of law.

Course work includes substantive and procedural legal knowledge in the areas of civil litigation, legal research and writing, real estate, family law, wills, estates, trusts, and commercial law. Required courses also include subjects such as English, mathematics, and computer operation.

Graduates are trained to assist attorneys in probate work, investigations, public records search, drafting and filing legal documents, research and office management. Employment opportunities are available in private law firms, governmental agencies, and other business organizations.

Program Outcomes:

Upon successful completion of this program, the student should be able to:

- Comprehend basic civil, criminal, domestic and business law concepts
- Understand legal and ethical restrictions on the practice of law
- Demonstrate understanding of investigation concepts, techniques and sources as applied to civil and criminal cases
- Research defined legal questions and properly cite legal authorities
- Handle management affairs of a law office under attorney supervision
- Assist an attorney in drafting wills and other planning documents and in preparing documents for the administration of a deceased's estate
- Demonstrate an understanding of basic concepts of N.C. real estate property law and assist an attorney in performing title searches and preparing residential loan closing documents.

Fall Semester I			Credits
ACA	111	College Student Success	1
CIS	110	Introduction to Computers	3
ENG	111	Expository Writing	3
LEX	110	Introduction to Paralegal Studies	2
LEX	120	Legal Research and Writing I	3
—	—	Natural Science/Math Elective	3-4
—	—	Social/Behavioral Science Elective	3
Total			18-19

Spring Semester I

OST	136	Word Processing	3
LEX	121	Legal Research and Writing II	3
LEX	130	Civil Injuries	3
LEX	140	Civil Litigation I	3
LEX	150	Commercial Law I	3
—	—	Humanities/Fine Arts Elective	3
Total			18

Fall Semester II

LEX	160	Criminal Law and Procedure	3
LEX	210	Real Property I	3
LEX	240	Family Law	3
LEX	280	Ethics and Professionalism	2
—	—	Paralegal Elective ¹	2
—	—	Second English Elective ³	3
Total			16

Spring Semester II

COM	120	Intro to Interpersonal Communication	3
LEX	250	Wills, Estates and Trusts	3
LEX	270	Law Office Management / Technology	2
—	—	Paralegal Elective ¹	3
—	—	Paralegal Elective ¹	3
—	—	Paralegal Elective ¹	2
Total			16

Total credit hours required for degree: 69-70

¹Paralegal Technology Electives

Choose a minimum of 10 credit hours from:

LEX 141 LEX 151
 LEX 170 LEX 180
 LEX 211 LEX 214
 LEX 220 LEX 260
 LEX 271 LEX 283
 LEX 285 LEX 286
 LEX 288

BUS courses

CJC courses

³Second English Electives

ENG 112 ENG 114

Pharmacy Technology

A 45 58 0

Associate of Applied Science

Contact: (336) 334-4822, ext. 55079

Limited Enrollment Associate Degree & Diploma. Contact the Enrollment Services Office for program admission requirements and program application deadlines.

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.

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

Graduates may be employed in 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.

Graduates of the Diploma program are encouraged to take the National Certification Exam administered by the Pharmacy Technician Certification Board (PTCB) to become a Certified Pharmacy Technician. Students interested in the AAS degree year must graduate the Diploma year, pass the PTCB examination, and maintain a 3.5 GPA in the Diploma program to be considered for admission into the AAS year. The curriculum is considered a 1+1 meaning that all students must complete the Diploma curriculum first and can stop there or apply for admission into the AAS year if they meet the admission criteria stated above. Both the Diploma and AAS programs are limited enrollment and require special admission procedures. Admission into the Diploma program does not guarantee admission into the AAS program.

The program outcomes listed below apply to both the Diploma and AAS curriculum, however the AAS curriculum is taught from an advanced perspective pertaining to specific advanced levels of employment. At this time, AAS degrees are only recognized in specific hospital settings.

These competencies are designed to meet the requirements of the American Society of Health Systems Pharmacists (ASHP) Standards of Pharmacy Technician Training Programs.

Program Outcomes:

Upon successful completion of the program, the student should be able to:

- Demonstrate the written and oral communication skills required

- for safe and legal practice in the role of pharmacy technician
- Demonstrate the critical thinking skills necessary for safe preparation and distribution of medication
- Explain policies and other print materials related to safe preparation and distribution of medication
- Compute mathematical calculations needed to safely prepare medications and solutions
- Manipulate current technologies to prepare, store, inventory, and distribute medications
- Demonstrate the academic knowledge and technical skills necessary for safe preparation, storage, and distribution of medications
- Associate effectively with others by displaying a positive attitude, working as a team member, and showing initiative and responsibility
- Apply knowledge in a legal and ethical manner

Fall Semester I			Credits
PHM	110	Introduction to Pharmacy	3
PHM	111	Pharmacy Practice I	4
PHM	115	Pharmacy Calculations	3
PHM	120	Pharmacology I	3
ENG	111	Expository Writing	3
COM	120	Intro to Interpersonal Communication	3
Total			19

Spring Semester I			Credits
PHM	118	Sterile Products	4
PHM	125	Pharmacology II	3
PHM	132	Pharmacy Clinical	2
PHM	134	Pharmacy Clinical	4
PHM	140	Trends in Pharmacy	2
PHM	165	Pharmacy Professional Practice	2
Total			17

Fall Semester II			Credits
PHM	150	Hospital Pharmacy	4
PHM	155	Community Pharmacy	3
PSY	150	General Psychology	3
—	—	Humanities/Fine Arts Elective ¹	2
—	—	Second English Elective ²	3
Total			16

Spring Semester II			Credits
PHM	138	Pharmacy Clinical	8
PHM	160	Pharmacy Dosage Forms	3
PHM	265	Professional Issues	3
CIS	111	Basic PC Literacy	2
—	—	Math Elective ³	3
Total			19

Total credit hours required for degree: 71

¹Humanities/Fine Arts Electives

HUM 115 PHI 240

²Second English Electives

ENG 112 ENG 114

³Math Electives

MAT 115 MAT 140

Pharmacy Technology

A 45 58 0 D1

Diploma

Fall Semester I			Credits
PHM	110	Introduction to Pharmacy	3
PHM	111	Pharmacy Practice I	4
PHM	115	Pharmacy Calculations	3
PHM	120	Pharmacology I	3
ENG	111	Expository Writing	3
COM	120	Intro to Interpersonal Communication	3
Total			19

Spring Semester I			
PHM	118	Sterile Products	4
PHM	125	Pharmacology II	3
PHM	132	Pharmacy Clinical	2
PHM	134	Pharmacy Clinical	4
PHM	140	Trends in Pharmacy	2
PHM	165	Pharmacy Professional Practice	2
Total			17

Total credit hours required for diploma: 36

Physical Therapist Assistant

A 45 64 0

Associate of Applied Science

Contact: (336) 334-4822, ext. 50280

Limited Enrollment Program: Contact the Enrollment Services Office for Program admission requirements and Program application deadlines.

The Physical Therapist Assistant curriculum prepares graduates to work in direct patient care settings under the direction and supervision of physical therapists. Physical Therapist Assistants work to improve or restore function by alleviation or prevention of physical impairment and perform other essential activities in a physical therapy department.

Course work includes normal human anatomy and physiology, the consequences of disease or injury, and physical therapy treatment of a variety of patient conditions affecting people throughout the life-span.

Suggested high school courses for individuals desiring a career as a physical therapist assistant include biology, anatomy and physiology, algebra, chemistry, and physics.

Students can complete the general education prerequisite courses at other colleges and universities; however, students accepted into the Physical Therapist Assistant program must take the PTA courses on the Jamestown campus of Guilford Technical Community College. Accepted PTA students will also be required to participate in clinical education courses located in various healthcare facilities throughout North Carolina. Complete information about the admissions process is available in the Enrollment Services office.

The Physical Therapist Assistant program at Guilford Technical Community College is accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE), 1111 North Fairfax Street, Alexandria, Virginia 22314; telephone: 703-706-3245; email: accreditation@apta.org; website: <http://www.capteonline.org>. Graduates are eligible to take the licensure examination administered by the North Carolina Board of Physical Therapy Examiners.

Employment is available in hospitals, rehabilitation facilities, extended care facilities, outpatient clinics, skilled nursing or subacute facilities, home health agencies, public school systems, education centers, hospice, corporate or industrial health centers, athletic facilities, and fitness centers.

Program Outcomes:

- Upon successful completion of the Physical Therapist Assistant curriculum, graduates should be able to:
- Perform in a safe manner that minimizes risk to patients, self, and others
- Demonstrate expected clinical behaviors in a professional manner in all situations

- Perform in a manner consistent with established legal standards, standards of the profession, and ethical guidelines
- Adapt delivery of physical therapy services with consideration for patients' difference, values, preferences, and needs
- Communicate in ways that are congruent with situational needs
- Develop plans to improve knowledge, skills, and behaviors
- Demonstrate clinical problem-solving
- Perform physical therapy data collection and interventions in a competent manner
- Produce quality documentation in a timely manner to support the delivery of physical therapy services
- Participate in the efficient delivery of physical therapy services

**Individuals entering the Physical Therapist Assistant program must complete all seven general education courses listed below as part of the program admission requirements.*

Spring Semester I			Credits
BIO	165	Anatomy and Physiology I	4
ENG	111	Expository Writing	3
PHY	110	Conceptual Physics	3
PHY	110A	Conceptual Physics Lab	1
PSY	150	General Psychology	3
—	—	Communications Elective ¹	3
—	—	Humanities/Fine Arts Elective	3
Total			20

Fall Semester I			
BIO	166	Anatomy and Physiology II	4
PTA	110	Introduction to Physical Therapy	3
PTA	125	Gross and Functional Anatomy	5
PTA	135	Pathology	4
Total			16

Spring Semester II			
PTA	145	Therapeutic Procedures	4
PTA	215	Therapeutic Exercise	3
PTA	222	Professional Interactions	2
PTA	245	PTA Clinical III	4
—	—	Second English Elective ²	3
Total			16

Summer Semester I			
PTA	225	Introduction to Rehabilitation	4
PTA	255	PTA Clinical IV	4
Total			8

Fall Semester II			
PTA	212	Health Care/Resources	2
PTA	235	Neurological Rehab	5
PTA	155	PTA Clinical I	2
PTA	185	PTA Clinical II	3
Total			12

Total credit hours required for degree: 72

¹Communications Electives

COM 110 COM 231

²Second English Electives

ENG 112 ENG 114

Radiography

A 45 70 0

Associate of Applied Science

Contact: (336) 832-7487

Limited Enrollment Program: Contact the Enrollment Services Office for Program admission requirements and Program application deadlines.

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.

Program Outcomes:

Upon completion of the Radiography degree, the graduate will be able to:

- Demonstrate competence as an entry-level technologist.
- Demonstrate effective professional communication skills.
- Apply problem-solving and critical thinking skills.
- Exhibit motivation and potential for success.
- Instill the importance of professional activities and value of lifetime learning.

Spring Semester I			Credits
BIO	163	Basic Anatomy and Physiology	5
MAT	140	Survey of Mathematics	3
COM	231	Public Speaking	3
ENG	111	Expository Writing	3
HUM	115	Critical Thinking	3
—	—	Social/Behavioral Science Elective ¹	3
Total			20

Fall Semester I			
RAD	110	Radiography Intro & Patient Care	3
RAD	111	RAD Procedures I	4
RAD	151	RAD Clinical Education I	2
RAD	183	RAD Clinical Elective	3
Total			12

Spring Semester II			
RAD	112	RAD Procedures II	4
RAD	121	Radiographic Imaging I	3
RAD	161	RAD Clinical Education II	5
RAD	131	Radiographic Physics I	2
Total			14

Summer Semester I

RAD	122	Radiographic Imaging II	2
RAD	171	RAD Clinical Education III	4
Total			6

Fall Semester II

RAD	211	RAD Procedures III	3
RAD	231	Radiographic Physics II	2
RAD	241	Radiobiology Protection	2
RAD	251	RAD Clinical Education IV	7
Total			14

Spring Semester III

RAD	245	RAD Image Analysis	2
RAD	261	RAD Clinical Education V	7
RAD	271	RAD Capstone	1
Total			10

Total credit hours required for degree: 76

¹Social/Behavioral Science Electives

PSY 150
SOC 210

Simulation and Game Development

A 25 45 0

Associate of Applied Science

Contact: (336) 334-4822, ext 50325

The Simulation and Game Development curriculum provides a broad background in simulation and game development with practical applications in creative arts, visual arts, audio/video technology, creative writing, modeling, design, programming and management.

Students will receive hands-on training in design, 3D modeling, and programming for the purpose of creating simulations and games.

Graduates should qualify for employment as designers, artists, animators, programmers, testers, quality assurance analysts, engineers and administrators in the entertainment industry, health care, education, corporate training, and government organizations.

Program Outcomes:

Upon completion, students should:

- Illustrate the economic, social, and cultural implications of interactive media
- Explain the essential creative requirements from various disciplines in the development of simulation and gaming projects
- Develop games and simulations for education, training, and other commercial entities
- Identify programming proficiency for various media including 2-D and 3-D graphics, animation, and sound
- Develop a complete simulation or gaming project using the Software Development Life Cycle
- Design a game or simulation to meet end-user specifications
- Code a game or simulation to meet end-user specifications
- Develop a game or simulation that incorporates proper Object-Oriented programming methodologies
- Identify inefficiencies in programming practices
- Select the appropriate programming language and development tools to most effectively meet project

Gateway Courses SGD 112 and SGD 113. A minimum grade of C required in both.

Fall Semester I			Credits
ACA	111	College Student Success	1
ENG	111	Expository Writing	3
MAT	121	Algebra/Trigonometry I	3
SGD	111	Introduction to SGD	3
SGD	112	SGD Design	3
SGD	113	SGD Programming	3
Total			16

Spring Semester I

DRA	126	Storytelling	3
ENG	125	Creative Writing I	3
SGD	114	3D Modeling	3
SGD	212	SGD Design II	3
SGD	213	SGD Programming II	3
Total			15

Summer Semester I

SGD	123	Windows/Console Prog	3
–	–	SGD Technical Elective ¹	3
Total			6

Fall Semester II

SGD	161	SG Animation	3
SGD	174	SG Level Design	3
SGD	214	3D Modeling II	3
PHY	131	Physics – Mechanics	4
–	–	Social/Behavioral Science Elective	3
Total			16

Spring Semester II

SGD	124	MMO Programming	3
SGD	274	SG Level Design II	3
SGD	285	SG Software Engineering	3
–	–	Communications Elective ²	3
–	–	SGD Technical Elective ¹	3
Total			15

Summer Semester II

SGD	163	SG Documentation	3
SGD	289	SGD Project	3
Total			6

Total credit hours required for degree: 74

¹Simulation and Game Development Technical Electives

Choose 2 courses from:

CSC 134	CSC 151
CSC 234	CSC 251
CSC 258	SGD 116
SGD 117	SGD 125
SGD 126	SGD 134
SGD 135	SGD 164
SGD 165	SGD 168
SGD 171	SGD 173
SGD 268	

²Communications Electives

COM 110
COM 120
COM 231

Surgical Technology

A 45 74 0

Associate of Applied Science

Contact: (336) 334-4822, ext. 50340

Limited Enrollment Program: Contact the Enrollment Services Office for Program admission requirements and Program application deadlines.

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. The Surgical Technology is accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org) upon the recommendation of the Accreditation Review Council on Education in Surgical Technology and Surgical Assisting.

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

Graduates of this program will be eligible to apply to take the national Board of Surgical Technology and Surgical Assisting Certification examination for Surgical Technologists. Employment opportunities include labor/delivery/emergency departments, inpatient/outpatient surgery centers, dialysis units/facilities, physicians' offices, and central supply processing units.

Associate graduates will also have employment opportunities in some supervisory level positions in the inpatient/outpatient centers and central sterile processing units.

The program offers diploma and associate level degrees for students with no prior surgical experience. Applicants interested in the diploma (three semesters) or the degree (five semesters) options should contact Enrollment Services to begin the application process.

The surgical technologist is a professional who provides and participates in the coordination of patient care as a member of the surgical team by demonstrating knowledge of aseptic technique, surgical procedures, and instrumentation.

Program Outcomes:

Upon successful completion of the diploma curriculum, graduates should be able to:

- Participate in surgical procedures
- Practice sterile supply room procedures
- Prepare for surgical procedures
- Use equipment according to established policies and procedures
- Provide for patient safety
- Care for surgical instruments
- Practice aseptic technique
- Prepare medications

In addition to these outcomes, upon successful completion of the AAS Surgical Technology curriculum, graduates should be able to:

- Supervise employees in the sterile processing unit
- Assist with specialty departments
- Order departmental supplies

Fall Semester I			Credits
SUR	110	Introduction to Surgical Technology	3
SUR	111	Perioperative Patient Care	7
ENG	111	Expository Writing	3
BIO	163	Basic Anatomy and Physiology	5
MAT	110	Mathematical Measurements	3
Total			21

Spring Semester			
SUR	122	Surgical Procedures I	6
SUR	123	Surgical Clinical I	7
BIO	175	General Microbiology	3
Total			16

Summer Semester			
SUR	134	Surgical Procedures II	5
SUR	135	Surgical Clinical II	4
SUR	137	Professional Success Preparation	1
Total			10

Fall Semester II			
CIS	110	Introduction to Computers	3
ECO	251	Principles of Microeconomics	3
ENG	114	Professional Research and Reporting	3
SUR	211	Advanced Theoretical Concepts	2
—	—	Humanities/ Fine Arts Elective	3
Total			14

Spring Semester II			
SUR	210	Advanced Clinical Practice	2
COM	120	Intro to Interpersonal Communication	3
BUS	137	Principles of Management	3
PSY	150	General Psychology	3
Total			11

Total credit hours required for degree: 72

Surgical Technology

A 45 74 0 D1

Diploma

Fall Semester I Credits

SUR	110	Introduction to Surgical Technology	3
SUR	111	Perioperative Patient Care	7
ENG	111	Expository Writing	3
BIO	163	Basic Anatomy and Physiology	5
MAT	110	Mathematical Measurements	3

Total 21

Spring Semester I

SUR	122	Surgical Procedures I	6
SUR	123	Surgical Clinical I	7
BIO	175	General Microbiology	3

Total 16

Summer Semester I

SUR	134	Surgical Procedures II	5
SUR	135	Surgical Clinical II	4
SUR	137	Professional Success Preparation	1

Total 10

Total credit hours required for diploma: 47

Telecommunications and Network Engineering Technology

A 40 40 0

Associate of Applied Science

Contact: (336) 334-4822, ext. 53055

These curriculums are designed to prepare students through the study and application of principles from mathematics, natural sciences, and technology and applied processes based on these subjects.

Course work includes mathematics, natural sciences, engineering sciences and technology.

Graduates should qualify to obtain occupations such as technical service providers, materials and technologies testing services, process improvement technicians, engineering technicians, construction technicians and managers, industrial and technology managers, or research technicians.

A course of study that prepares the students to apply basic engineering principles and technical skills for positions in the telecommunication networking industry. Includes instruction in mathematics, basic electricity, solid-state fundamentals, digital concepts, microprocessors, telecommunications and network systems with an emphasis on analyzing and troubleshooting telecommunications and network systems. Graduates should qualify for employment as electronic engineering technician, field service technician, maintenance technician, network system technician, network specialist, network systems integrator, and network administrator.

Program Outcomes:

Upon successful completion of the program, the student should be able to:

- Practice successful employability skills in the workplace
- Apply telecommunication and networking concepts
- Use and explain different operating systems and topologies
- Install local/wide area network
- Maintain local/wide area network
- Repair electronic and telecommunications systems

Fall Semester I			Credits
EGR	131	Introduction to Electronic Technology	2
ENG	111	Expository Writing	3
ELC	131	Circuit Analysis I	4
TNE	111	Campus Networks I	3
—	—	MAT Elective 1 ²	3
Total			15

Spring Semester I

CET	111	Computer Upgrade/Repair I	3
ELN	131	Analog Electronics I	4
ELN	133	Digital Electronics	4
TNE	121	Campus Networks II	3
—	—	MAT Elective 2 ²	3
Total			17

Summer Semester I

CET	125	Voice & Data Cabling	3
TNE	250	Introduction to Telecom Networks	3
—	—	TNET Technical Elective ¹	1-4
Total			7-10

Fall Semester II

TNE	255	Network Servers	3
TNE	251	Advanced Telecom Networks	3
—	—	TNET Technical Elective ¹	3
—	—	Social/Behavioral Science Elective ³	3
—	—	Communications Elective ⁴	3
Total			15

Spring Semester II

CET	130	Operating System Principals	3
TNE	241	Network Management	3
TNE	242	Data Network Design	3
ELN	249	Digital Communications	3
—	—	Humanities/Fine Arts Elective ⁵	3
Total			15

Total credit hours required for degree: 69-72

¹Telecommunications and Network Engineering Technology Technical Electives

Choose a minimum of 4 credit hours.

EGR 125 CET 222
ELN 236 PHY 131
TNE 231

²Math Electives

Choose 6 hours:

MAT 120 MAT 121
MAT 161 MAT 171
MAT 175 MAT 271

³Social/Behavioral Science Electives

ECO 251
GEO 111
PSY 150
SOC 210

⁴Communications Electives

COM 110
COM 120
COM 231
ENG 114

⁵Humanities/Fine Arts Elective

HUM 110 HUM 115
PHI 240

Telecommunications and Network Engineering Technology

A 40 40 0 D1

Diploma

The Telecommunications and Network Engineering Technology Diploma program is for individuals wishing to quickly gain a basic foundation in telecommunications. The diploma's primary emphasis is on telecommunication systems such as computers, telephones, Internet hook-ups and local area networks. The TNET diploma is frequently used by individuals as a way of preparing for telecommunication and networking certification exams.

Students will obtain credits in basic telecommunications while in the TNET Diploma program which will apply towards an Associate in Applied Science degree. In order to obtain a TNET Diploma, a student must complete at least 36 credit hours.

Program Outcomes:

Upon successful completion of the Telecommunications and Network Engineering Technology diploma, the graduate should be able to:

- Practice successful employability skills
- Apply telecommunication and networking concepts
- Use and explain different operating systems and topologies
- Install local/wide area network
- Maintain local/wide area network

Fall Semester I			Credits
EGR	131	Introduction to Electronic Technology	2
ELC	131	Circuit Analysis I	4
TNE	111	Campus Networks I	3
—	—	MAT Elective 1 ²	3
ENG	111	Expository Writing	3
Total			15

Spring Semester I			
CET	111	Computer Upgrade/Repair I	3
ELN	131	Analog Electronics I	4
ELN	133	Digital Electronics	4
TNE	121	Campus Networks II	3
—	—	MAT Elective 2 ²	3
Total			17

Summer Semester I			
CET	125	Voice & Data Cabling	3
TNE	250	Introduction to Telecom Networks	3
Total			6

Total credit hours required for diploma: 38

²Math Electives

Choose 6 hours:

MAT 120 MAT 121
MAT 161 MAT 171
MAT 175 MAT 271

Turfgrass Management Technology

A 15 42 0

Associate of Applied Science

Contact: (336) 334-4822, ext. 53076

The Turfgrass Management Technology curriculum is designed to provide skills necessary to perform duties related to management of golf courses, sports fields, lawn care, irrigation design, and sod production.

Coursework includes turfgrass management, irrigation, ornamental horticulture, soil science, entomology, plant pathology, as well as courses in communications, computers, and the social sciences.

Graduates should qualify for employment at golf courses, local, state, and national parks, sports complexes, highway vegetation and turf maintenance companies, and private and public gardens. Graduates should also be prepared to take the examination for the North Carolina pesticide licenses, N.C. Certified Plantsman, and N.C. Landscape Contractors' Registration Board License.

Students enrolled in this program may be required to travel "to and from" job sites, associated with required "hands on" laboratory work. Students may be required to arrive on campus up to 30 minutes prior to class start times, to accommodate travel.

Program Outcomes:

Upon successful completion of the Turfgrass Management degree, the graduate should be able to:

- Practice successful employability skills in the workplace
- Establish turfgrass areas
- Maintain turfgrass areas
- Evaluate weather conditions for proper selection and maintenance of outdoor plants
- Maintain turf equipment
- Implement solutions to turfgrass problems
- Create electronic landscape design solutions using ProLandscape computer software
- Design hardscaping solutions
- Construct hardscapes

Fall Semester I			Credits
TRF	110	Intro Turfgrass Cult & ID	4
ENG	111	Expository Writing	3
HOR	118	Equipment Op & Maint	2
HOR	160	Plant Materials I	3
MAT	110	Mathematical Measurements	3
Total			15

Spring Semester I

TRF	210	Turfgrass Equipment Management	3
HOR	114	Landscape Construction	3
HOR	166	Soils and Fertilizers	3
HOR	260	Plant Materials II	3
—	—	Communications Elective ²	3
Total			15

Summer Semester I

HOR	170	Horticulture Computer Applications	2
LSG	123	Summer Garden Lab	2
TRF	152	Landscape Maintenance	3
TRF	220	Turfgrass Calculations	2
TRF	230	Turfgrass Management Applications	2
Total			11

Fall Semester II

LSG	231	Landscape Supervision	4
TRF	120	Turfgrass Irrigation & Design	4
TRF	130	Native Flora Identification	2
—	—	Humanities/Fine Arts Elective ¹	3
Total			13

Spring Semester II

TRF	125	Turfgrass Computer Applications	2
TRF	240	Turfgrass Pest Control	3
TRF	260	Advanced Turfgrass Management	4
HOR	257	Arboriculture Practices	2
—	—	Social/Behavioral Science Elective ³	3
Total			14

Total credit hours required for degree: 68

¹Humanities/Fine Arts Electives

HUM 110 HUM 115
PHI 240

²Communications Electives

COM 110
COM 120
COM 231
ENG 114

³Social/Behavioral Science Electives

ECO 251
PSY 150
SOC 210

Turfgrass Management Technology

A 15 42 0 D1

Diploma

The Turfgrass Management Technology Diploma A15420 D1 is designed to equip students with a specialized skill set for immediate employment or to upgrade skills for job advancement in the Turfgrass industry. It can be completed by a part-time student taking day and/or evening courses in less than two years. All of this diploma's courses can be applied toward the diploma or the AAS degree. In order to earn the Turfgrass Management Technology Diploma, a student must complete at least 37 credit hours in a prescribed course of study.

Program Outcomes:

Upon successful completion of the Turfgrass Management Technology diploma, the graduate should be able to:

- Practice successful employability skills in the workplace;
- Establish turfgrass areas
- Maintain turfgrass areas
- Evaluate weather conditions for proper selection and maintenance of outdoor plants
- Manage human resources and financial resources
- Implement solutions to turfgrass problems
- Create electronic landscape design solutions using ProLandscape computer software.
- Design hardscaping solutions
- Construct hardscapes

Fall Semester I			Credits
TRF	110	Intro Turfgrass Cult & ID	4
TRF	220	Turfgrass Calculations	2
HOR	160	Plant Materials I	3
Total			9

Spring Semester I			
TRF	210	Turfgrass Equipment Management	3
HOR	114	Landscape Construction	3
HOR	166	Soils and Fertilizers	3
ENG	111	Expository Writing	3
Total			12

Summer Semester I			
LSG	123	Summer Garden Lab	2
Total			2

Fall Semester II			
TRF	120	Turfgrass Irrigation & Design	4
TRF	230	Turfgrass Management Applications	2
MAT	110	Mathematical Measurements	3
Total			9

Spring Semester II			
TRF	125	Turfgrass Computer Applications	2
TRF	240	Turfgrass Pest Control	3
Total			5

Total credit hours required for diploma: 37

Turfgrass Management Technology

A 15 42 0 C1

Certificate

The Turfgrass Management Technology Certificate 15420 C1 is designed to be a stackable certificate to allow students equip themselves with a specialized skill set for immediate employment or to upgrade skills for job advancement. It can be completed in 2 semesters, and all this certificate's courses can be applied toward AAS degree.

Program Outcomes:

Upon successful completion of the Turfgrass Management Technology certificate, the graduate should be able to:

- Practice successful employability skills in the workplace
- Establish turfgrass areas
- Maintain turfgrass areas
- Evaluate weather conditions for proper selection and maintenance of outdoor plants
- Manage human resources and financial resources
- Implement solutions to turfgrass problems

Fall Semester I			Credits
TRF	110	Intro to Turfgrass Cult ID	4
TRF	120	Turfgrass Irrigation & Design	4
TRF	230	Turfgrass Management Applications	2
Total			10

Spring Semester I			
HOR	166	Soils and Fertilizers	3
TRF	260	Advanced Turfgrass Management	4
Total			7

Total credit hours required for certificate: 17

Landscape Design

A 15 42 0 C2

Certificate

The Turfgrass Management Technology Landscape Design Certificate 15420 C2 is designed to be a stackable certificate to allow students to be prepared to take the Certified Plantsman Exam. It can be completed in 2 semesters and all this certificate's courses can be applied toward AAS degree.

Program Outcomes:

Upon successful completion of the Landscape Design certificate, the graduate should be able to:

- Practice successful employability skills in the workplace;
- Establish turfgrass areas;
- Evaluate weather conditions for proper selection and maintenance of outdoor plants;
- Create electronic landscape design solutions using ProLandscape computer software.
- Design and build hardscaping.

Fall Semester I			Credits
HOR	160	Plant Materials I	3
TRF	120	Turfgrass Irrigation & Design	4
Total			7

Spring Semester I			Credits
TRF	125	Turfgrass Computer Applications	2
HOR	114	Landscape Construction	3
HOR	260	Plant Materials II	3
Total			8

Total credit hours required for certificate: 15

Landscape Maintenance

A 15 42 0 C3

Certificate

The Turfgrass Management Technology Landscape Maintenance Certificate 15420 C3 is designed to be a stackable certificate to allow students to be prepared to take the Pesticide Licensing Exam. It can be completed in 2 semesters and all this certificate's courses can be applied toward AAS degree.

Program Outcomes:

Upon successful completion of the Landscape Maintenance certificate, the graduate should be able to:

- Practice successful employability skills in the workplace
- Establish turfgrass areas
- Maintain turfgrass areas
- Evaluate weather conditions for proper selection and maintenance of outdoor plants
- Implement solutions to turfgrass problems

Fall Semester I			Credits
TRF	110	Intro Turfgrass Cult & ID	4
TRF	120	Turfgrass Irrigation & Design	4
Total			8

Spring Semester I			Credits
HOR	114	Landscape Construction	3
HOR	257	Arboriculture Practices	2
TRF	240	Turfgrass Pest Control	3
Total			8

Total credit hours required for certificate: 16

Sports Turf Management Certificate

A 15 42 0 C5

Certificate

The Turfgrass Management Technology Sports Turf Certificate A15420 C5 is intended for coaching professionals seeking to establish or upgrade skill sets in the growing and maintaining of turfgrass for their sports fields.

Program Outcomes:

Upon successful completion of the Sports Turf Management certificate, the graduate should be able to:

- Practice successful employability skills in the workplace;
- Establish turfgrass areas
- Maintain turfgrass areas
- Evaluate weather conditions for proper selection and maintenance of outdoor plants
- Maintain turf equipment
- Manage human resources and financial resources
- Implement solutions to turfgrass problems

Summer Semester			Credits
HOR	118	Equipment Op & Maint	2
TRF	110	Intro Turfgrass Cult & ID	4
TRF	120	Turfgrass Irrigation & Design	4
TRF	220	Turfgrass Calculations	2
TRF	230	Turfgrass Management Applications	2
Total			14

Total credit hours required for certificate: 14

Web Technologies

A 25 29 0

Associate of Applied Science

Contact: (336) 334-4822, ext. 50325

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

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

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

Students in this program will be required to obtain Macromedia Creative Suite 6.0 Web Premium or higher, which includes:

- Dreamweaver
- Flash Catalyst
- Flash Professional
- Flash Builder
- Photoshop Illustrator
- Acrobat 9 Pro
- Fireworks
- Contribute

Program Outcomes:

Upon completion of the Web Technologies degree, the graduate should be able to:

- Evaluate the requirements of effective website design and development
- Analyze the technical needs of the client and end-users
- Design a complete website while completing all phases the Software Development Life Cycle in its evolution
- Design a website to meet end-user specifications
- Code a website to meet end-user specifications
- Develop a website that integrates with a relational database
- Develop a website that incorporates static and dynamic content with current industry standard software and techniques
- Identify inefficiencies in existing website designs
- Revise existing websites to enhance appearance, coding, and overall functionality
- Assess the various tools utilized by website designers and developers
- Examine emerging technologies within the industry

Fall Semester I

			Credits
CIS	110	Introduction to Computers	3
CIS	115	Intro to Prog & Logic	3
DBA	110	Database Concepts	3
NOS	110	Operating System Concepts	3
WEB	110	Internet/Web Fundamentals	3
—	—	ACA Elective ²	3
Total			16

Spring Semester I

ENG	111	Expository Writing	3
WEB	111	Intro to Web Graphics	3
WEB	115	Web Markup and Scripting	3
WEB	140	Web Development Tools	3
WEB	180	Active Server Pages	3
Total			15

Summer Semester I

NET	110	Networking Concepts	3
—	—	Web Technologies Technical Elective ¹	3
Total			6

Fall Semester II

ENG	114	Professional Research and Reporting	3
MAT	140	Survey of Mathematics	3
WEB	120	Intro Internet Multimedia	3
WEB	210	Web Design	3
WEB	230	Implementing Web Server	3
WEB	250	Database Driven Websites	3
Total			18

Spring Semester II

WEB	289	Internet Technologies Project	3
COM	120	Intro to Interpersonal Communication	3
CTS	115	Info Sys Bus Concepts	3
SEC	110	Security Concepts	3
—	—	Humanities/Fine Arts Elective	3
—	—	Social/Behavioral Science	3
Total			18

Total credit hours required for degree: 73

¹Web Technologies Technical Electives

Choose 3 credit hours from:

CSC 139	CSC 151
DBA 115	CTS 112
DBA 120	WEB 182
WEB 186	WEB 211
WEB 240	WEB 285

²ACA Electives

ACA 111
ACA 112

Gateway Courses: WEB 111 and WEB 115. A minimum grade of C required in both.

Web Technologies--Basic

A 25 29 0 C1

Certificate

The Web Technologies--Basic certificate prepares the student for the following external certification: Certified Internet Webmaster (CIW); W3Schools HTML Developer Zend PHP; and Microsoft Certified Professional Developer: ASP.NET. Job Opportunities include Website Developer, Website Administrator, and Website Graphic Designer

Upon completion of the Web Technologies--Basic certificate, the graduate should be able to:

- Evaluate the requirements of effective website design and development
- Analyze the technical needs of the client and end-users
- Design a complete website while completing all phases of the Software Development Life Cycle
- Design a website to meet end-user specifications
- Code a website to meet end-user specifications
- Develop a website that integrates with a relational database
- Develop a website that incorporates static and dynamic content with current industry standard software and techniques
- Identify inefficiencies in existing website designs
- Revise existing websites to enhance appearance, coding, and overall functionality
- Assess various tools utilized by website designers and developers
- Examine emerging technologies within the industry

Courses			Credits
CIS	110	Introduction to Computers	3
CIS	115	Intro to Prog & Logic	3
WEB	110	Internet/Web Fundamentals	3
WEB	120	Intro Internet Multimedia	3
WEB	140	Web Development Tools	3
Total			15

Total credit hours required for certificate: 15

Web Technologies--Advanced

A 25 29 0 C2

Certificate

The Web Technologies--Basic certificate prepares the student for the following external certification: Certified Internet Webmaster (CIW); W3Schools HTML Developer Zend PHP; and Microsoft Certified Professional Developer: ASP.NET. Job Opportunities include Website Developer, Website Administrator, and Website Graphic Designer

Upon completion of the Web Technologies--Basic certificate, the graduate should be able to:

- Evaluate the requirements of effective website design and development
- Analyze the technical needs of the client and end-users
- Design a complete website while completing all phases of the Software Development Life Cycle
- Design a website to meet end-user specifications
- Code a website to meet end-user specifications
- Develop a website that integrates with a relational database
- Develop a website that incorporates static and dynamic content with current industry standard software and techniques
- Identify inefficiencies in existing website designs
- Revise existing websites to enhance appearance, coding, and overall functionality
- Assess various tools utilized by website designers and developers
- Examine emerging technologies within the industry

Courses			Credits
CIS	115	Intro to Prog & Logic	3
WEB	110	Internet/Web Fundamentals	3
WEB	120	Intro Internet Multimedia	3
WEB	211	Advanced Web Graphics	3
WEB	250	Database Driven Websites	3
Total			15

Total credit hours required for certificate: 15

Pre-requisites required.

Welding Technology

D 50 42 0

Diploma

Contact: (336) 334-4822, ext. 50411

The Welding Technology curriculum provides students with a sound understanding of the science, technology and applications essential for successful employment in the welding and metalworking industry. Instruction includes consumable and non-consumable electrode welding and cutting processes. Courses in may include math, print reading, metallurgy, welding inspection, and destructive and non-destructive testing providing the student with industry-standard skills developed through classroom training and practical application.

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.

Emphasis is placed on developing the skills necessary to obtain certification in Gas Metal Arc, gas tungsten arc, and shielded metal arc welding of plate and pipe.

Program Outcomes:

Upon successful completion of the Welding diploma, the graduate should be able to:

- Set up and safely operate all welding equipment;
- Identify metals and read drawings
- Perform miscellaneous welding activities
- Practice safety in the workplace
- Demonstrate effective communication

Fall Semester I			Credits
WLD	110	Cutting Processes	2
WLD	115	SMAW (Stick) Plate	5
WLD	121	GMAW (MIG) FCAW/Plate	4
ENG	102	Applied Communications II	3
Total			14

Spring Semester I			
WLD	131	GTAW (TIG) Plate	4
WLD	141	Symbols and Specifications	3
WLD	215	SMAW (Stick) Pipe	4
MAT	120	Geometry and Trigonometry	3
DFT	119	Basic CAD	2
Total			16

Summer Semester I			
WLD	261	Certification Practices	2
WLD	132	GTAW (TIG) Plate/Pipe	3
WLD	151	Fabrication I	4
Total			9

Total credit hours required for diploma: 39

Up to four cooperative work experience credits may be substituted for course work with Department Chair approval.

Welding Technology

D 50 42 0 C1

Certificate

The Welding Technology Certificate Program provides students with a practical 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.

The welding courses incorporate safety, welding, visual welding inspection and destructive testing. This program provides students with industry standard skills developed through classroom instruction and practical application.

Upon completion of the Welding Technology Certificate Program, students may be employed as entry level welders in manufacturing and/or the construction industry.

All courses included in the Welding Technology Certificate Program are core courses for the Diploma program.

Program Outcomes:

Upon successful completion of the Welding diploma, the graduate should be able to:

- Set up and safely operate all welding equipment
- Perform miscellaneous welding activities
- Practice safety in the workplace

Fall Semester I			Credits
WLD	115	SMAW (Stick) Plate	5
WLD	121	GMAW (MIG) FCAW/Plate	4
Total			9

Spring Semester I			
WLD	131	GTAW (TIG) Plate	4
WLD	215	SMAW (Stick) Pipe	4
Total			8

Total credit hours required for certificate: 17

CAREER AND COLLEGE PROMISE PROGRAMS

career and college promise

Contact: (336) 334-4822, ext. 50562

The purpose of Career and College Promise is to offer structured opportunities for qualified high school students to dually enroll in community college courses that provide pathways that lead to a certificate, diploma, or degree as well as provide entry-level jobs skills.

Career and College Promise offers North Carolina high school students a clear path to success in college or in a career. The program is free to all students who maintain a “B” average and meet other eligibility requirements. Through a partnership of the Department of Public Instruction, the N.C. Community College System, the University of North Carolina system and many independent colleges and universities, North Carolina is helping eligible high school students to begin earning college credit at a community college campus at no cost to them or their families.

The three pathways include:

Core 44 College Transfer Pathways (CTP) requires the completion of at least 30 semester hours of transfer courses including English and mathematics.

Career and Technical Education Pathways (CTE) lead to a certificate or diploma aligned with a high school career cluster.

Cooperative Innovative High School Programs (CIHSP) are located on college campuses (unless a waiver was provided) and provide opportunities for students to complete an associate degree program or earn up to two years of college credit within five years. Examples include Early and Middle College High Schools.

Core 44 College Transfer Pathway

The Career and College Promise Core 44 College Transfer Pathway requires the completion of at least thirty semester hours of transfer courses, including English and mathematics.

To be eligible for enrollment, a high school student must meet the following criteria:

- Be a high school junior or senior;
- Have a weighted GPA of 3.0 on high school courses; and
- Demonstrate college readiness on an assessment or placement test (see attachment A). A student must demonstrate college readiness in English, reading and mathematics to be eligible for enrollment in a Core 44 College Transfer Pathway.

A high school junior or senior who does not demonstrate college-readiness on an approved assessment or placement test may be provisionally enrolled in a College Transfer Pathway. To qualify for Provisional Status, a student must meet the following criteria:

- Have a cumulative weighted GPA of 3.5;
- Have completed two years of high school English with a grade of 'C' or higher;
- Have completed high school Algebra II (or a higher level math class) with a grade of 'C' or higher;
- Obtain the written approval of the high school principal or his/her designee; and,
- Obtain the written approval of the community college president or his/her designee.

A Provisional Status student may register only for college mathematics (MAT) and college English (ENG) courses within the chosen Pathway. To be eligible to register for other courses in the Pathway, the student must first successfully complete mathematics and English courses with a grade of 'C' or higher.

To maintain eligibility for continued enrollment, a student must Continue to make progress toward high school graduation, and Maintain a 2.0 GPA in college coursework after completing two courses.

A student must enroll in one Core 44 College Transfer Pathway program of study and may not substitute courses in one program for courses in another.

A student may change his or her program of study major with approval of the high school principal or his/her designee and the college's chief student development administrator.

With approval of the high school principal or his/her designee and the college's chief student development administrator, a student who

completes a Core 44 College Transfer Pathway while still enrolled in high school may continue to earn college transfer credits leading to the completion of the 44-hour general education transfer core.

With approval of the high school principal or his/her designee and the college's chief student development administrator, a student may enroll in both a Core 44 College Transfer Pathway program of study and a Career Technical Education program of study.

Career Technical Education Pathway

The Career and College Promise Career Technical Education Pathway leads to a certificate or diploma aligned with a high school Career Cluster.

To be eligible for enrollment, a high school student must meet the following criteria:

- Be a high school junior or senior;
- Have a weighted GPA of 3.0 on high school courses or have the recommendation of the high school principal or his/her designee; and
- Meet the prerequisites for the career pathway.

High school counselors should consider students' PLAN scores in making pathway recommendations.

College Career Technical Education courses may be used to provide partial or full fulfillment of a four-unit career cluster. Where possible, students should be granted articulated credit based on the local or state North Carolina High School to Community College articulation agreement.

To maintain eligibility for continued enrollment, a student must

- Continue to make progress toward high school graduation, and
- Maintain a 2.0 in college coursework after completing two courses.
- A student must enroll in one program of study and may not substitute courses in one program for courses in another. The student may change his or her program of study major with approval of the high school principal or his/her designee and the college's chief student development administrator.

core 44 pathway options

Humanities and Social Science P1012A

Core 44 College Transfer Pathway

English Composition (6 hours/2 courses)Credits

ENG	111	Expository Writing	3
ENG	112	Argument-Based Research	3

Humanities/Fine Arts (6 hours / 2 courses)

ENG	131	Introduction to Literature	3
ART	111	Art Appreciation	3

Social Sciences (6 hours/2 courses)

PSY	150	General Psychology	3
HIS	121	Western Civilization I	3

Natural Sciences/Mathematics (8 hours/3 courses)

BIO	110	Principles of Biology	3
MAT	161	College Algebra	3
MAT	161A	College Algebra Lab	3

Other Required General Education (7 hours/3 courses)

COM	231	Public Speaking	3
SPA	111	Elementary Spanish I	3
ACA	122	College Transfer Success	1

Total credit hours to complete: 33

Business and Economics P1012B

Core 44 College Transfer Pathway

English Composition (6 hours/2 courses)Credits

ENG	111	Expository Writing	3
ENG	112	Argument-Based Research	3

Humanities/Fine Arts (3 hours/1 course)

ENG	131	Introduction to Literature	3

Social Sciences (9 hours/3 courses)

HIS	121	Western Civilization I	3
SOC	210	Introduction to Sociology	3
ECO	251	Principles of Microeconomics	3

Natural Sciences/Mathematics (8 hours/3 courses)

BIO	110	Principles of Biology	3
MAT	161	College Algebra	3
MAT	161A	College Algebra Lab	3

Other Required General Education (7 hours/3 courses)

COM	231	Public Speaking	3
CIS	110	Introduction to Computers	3
ACA	122	College Transfer Success	1

Total credit hours to complete: 33

Life and Health Sciences

P1042A

Core 44 College Transfer Pathway

English Composition (6 hours/2 courses)Credits

ENG	111	Expository Writing	3
ENG	112	Argument-Based Research	3

Humanities/Fine Arts (3 hours/1 course)

ENG	131	Introduction to Literature	3

Social Sciences (3 hours/1 course)

HIS	121	Western Civilization I	3

Natural Sciences/Mathematics (20 hours/6 courses)

BIO	111	General Biology I	4
BIO	112	General Biology II	4
CHM	151	General Chemistry I	4
CHM	152	General Chemistry II	4
MAT	171	Precalculus Algebra	3
MAT	171A	Precalculus Algebra Lab	1

Other Required General Education (1 hour/1 course)

ACA	122	College Transfer Success	1

Total credit hours to complete: 33

Engineering and Mathematics

P1042B

Core 44 College Transfer Pathway

English Composition (6 hours/2 courses)Credits

ENG	111	Expository Writing	3
ENG	112	Argument-Based Research	3

Humanities/Fine Arts (3 hours/1 course)

ENG	131	Introduction to Literature	3

Social Sciences (6 hours/2 courses)

HIS	121	Western Civilization I	3
ECO	251	Principles of Microeconomics	3

Natural Sciences (4 hours/1 course)

CHM	151	General Chemistry I	4

Mathematics (12 hours/5 courses)

MAT	171	Precalculus Algebra	3
MAT	171A	Precalculus Algebra Lab	1
MAT	172	Precalculus Trigonometry	3
MAT	171A	Precalculus Trigonometry Lab	1
MAT	271	Calculus I	4

Other Required General Education (1 hour/1 course)

ACA	122	College Transfer Success	1

Total credit hours to complete: 32

career technical pathway options

Air Conditioning, Heating and Refrigeration Technology

D 35 10 0 - H1

Diploma

Upon the completion of this diploma program, students should possess the essential knowledge to develop the skills necessary to work with residential and light commercial comfort systems. Topics include heating and air conditioning theory, heat pumps, electricity, HVAC controls, refrigeration, and safety.

Program Outcomes:

Upon successful completion of the Air Conditioning, Heating, and Refrigeration diploma, the graduate should be able to:

- Install residential heating and air conditioning systems
- Perform a preventive maintenance on heating and air conditioning systems
- Repair electrical components and controls in heating and air conditioning systems
- Demonstrate the ability to interpret and implement the NC HVAC Building Codes
- Demonstrate the personal and professional ethics and interpersonal skills that are expected in the workplace

Fall Semester I			Credits
AHR	110	Introduction to Refrigeration	5
AHR	111	HVACR Electricity	3
AHR	112	Heating Technology	4
AHR	213	HVACR Building Codes	2
MAT	110	Mathematical Measurement	3
Total			17

Spring Semester I

AHR	113	Comfort Cooling	4
AHR	114	Heat Pump Technology	4
AHR	160	Refrigerant Certification	1
ELC	117	Motors and Controls	4
AHR	211	Residential System Design	3
CIS	111	Basic PC Literacy	2
Total			18

Summer Semester I

ENG	111	Expository Writing	3
AHR	212	Advanced Comfort Systems	4
AHR	130	HVAC Controls	3
Total			10

Total credit hours required for diploma: 45

Architectural Technology

C 40 100 H1

Certificate

The Career and College Promise Initiative Certificate in Architectural Technology A40100 C3 is intended for students wanting to take college courses while in high school that can lead to credential to use for seeking employment or to earn college credits to apply toward the Architectural Technology AAS degree. To earn this CCPI certificate a student must complete in two semesters at least 16 hours of courses in a prescribed course of study.

Program Outcomes:

Upon successful completion of the Architectural Technology certificate, the graduate should be able to:

- Read and interpret construction drawings.
- Create residential design development drawings in AutoCAD 2013.
- Create a materials list for on-site construction assemblies.

Fall Semester I			Credits
ARC	111	Intro to Architectural Technology	3
ARC	114	Architectural CAD	2
ARC	114A	Architectural CAD Lab	1
Total			6

Spring Semester I			Credits
ARC	112	Construction Materials, Methods	4
ARC	113	Residential Architectural Technology	3
BPR	130	Print Reading/Construction	3
Total			10

Total credit hours required for certificate: 16

Aviation Management

C 60 180 H2

Certificate

This certificate is designed individuals interested in enrolling in the ground-school courses associated with the FAA Private Pilot, Instrument, and Commercial Pilot certificates. It is also geared for those students who already have a degree in another field and are interested in obtaining aviation knowledge for potential employment in the aviation industry.

Program Outcomes:

Upon successful completion of the Aviation Management certificate, the graduate should be able to:

- Operate within the regulatory standards of the aviation industry.
- Use critical thinking skills to solve aviation problems
- Relate well with various aviation customers in the execution of business enterprise

Fall Semester I			Credits
AER	110	Air Navigation	3
AER	150	Private Pilot Flight Theory	3
Total			6

Spring Semester I			Credits
AER	111	Aviation Meteorology	3
AER	160	Instrument Pilot Flight Theory	3
Total			6

Fall Semester II			Credits
AER	170	Commercial Flight Theory	3
Total			3

Total credit hours required for certificate: 15

Career Pilot

C 60 180 H1

Certificate

This certificate is designed for those individuals interested in attaining an FAA Private Pilot certificate and completing the ground school courses for Instrument and Commercial Pilot certificates. Students enrolled in this certificate program are required to attain FAA Private Pilot certificate as a requirement of the Career Pilot certificate. Flight training is done offsite at a flight training facility. Students will be responsible for all flight training and costs.

Upon successful completion of the Career Pilot certificate, the graduate should be able to:

- Pilot an aircraft
- Communicate effectively
- Operate within the regulatory standards of the aviation industry
- Use critical thinking skills to solve aviation problems
- Relate effectively to aviation customers
- Employ scientific and aerodynamic principles to safely and efficiently operate and aircraft

Fall Semester I			Credits
AER	110	Air Navigation	3
AER	150	Private Pilot Flight Theory	3
AER	151	Flight-Private Pilot	1
Total			7

Spring Semester I			Credits
AER	111	Aviation Meteorology	3
Total			3

Fall Semester II			Credits
AER	170	Commercial Flight Theory	3
AER	160	Instrument Pilot Flight Theory	3
Total			6

Total credit hours required for certificate: 16

Computer Information Technology-Basic

C 25 260 H1

Certificate

The Computer Information Technology--Basic certificate provides a student will prepared for the following external certification: CompTIA A+ Certification; Microsoft Office Specialist (MOS); Strata IT Fundamentals; and/or Certiport IC3.
CompTIA A+ Certification; CompTIA Linux; and Ubuntu Certified Professional. Job opportunities may include desktop support, help desk technician, and entry level IT or network support.

Upon completion of the Computer Information Technology--Basic certificate, students should be able to:

- Analyze the technical needs of end-users
- Use appropriate application software to fulfill business requirements
- Assess various network topologies
- Identify basic security threats
- Explain the difference between various common operating systems
- Examine various hardware components and their purpose

Courses			Credits
CIS	110	Introduction to Computers	3
CTS	120	Hardware/Software Support	3
NET	110	Networking Concepts	3
NOS	110	Operating System Concepts	3
Total			12

Total credit hours required for certificate: 12

Computer Integrated Machining

D 50 21 0 H1

Diploma

The Computer Integrated Machining Diploma program 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), blueprint interpretation, introductory computerized numeric control (CNC) equipment, and precision measurements. Graduates should qualify for employment as machining technicians in manufacturing, specialty machine shops, fabrication industries, and high-tech or emerging industries such as aerospace, aviation, medical, and renewable energy, and able to acquire machining certification examinations.

Program Outcomes:

Upon successful completion of the Computer Integrated Machining diploma, the graduate should be able to:

- Write CNC code for machined parts
- Apply CNC code to operate CNC lathes & CNC mills
- Complete projects using milling machines, bench grinders, power saws, lathes, drill presses, and surface grinders
- Produce rapid prototyping models
- Students completing this diploma will acquire a minimum of 2 (possibly 10) National Institute for Metalworking Skills (NIMS).

Fall Semester I			Credits
BPR	111	Print Reading	2
COM	120	Intro to Interpersonal Communication	3
MAC	111	Machining Technology I	6
MAC	114	Introduction to Metrology	2
DFT	119	Basic Cad	2
MAC	151	Machining Calculations	2
Total			17

Spring Semester I			Credits
MAC	112	Machining Technology II	6
MAC	121	Introduction to CNC	2
MAC	122	CNC Turning	2
MAC	124	CNC Milling	2
BPR	121	Blueprint Reading: Mechanical	2
MAT	120	Geometry & Trigonometry	3
Total			17

Summer Semester I			Credits
MAC	113	Machining Technology III	6
MAC	115	Grinding Operations	3
Total			9

Total credit hours required for diploma: 43

Criminal Justice Foundations

C 55 18 0 H1

Certificate

This certificate is designed to provide a base-level knowledge for those interested in the criminal justice field. This certificate alone does not meet financial aid requirements.

Upon successful completion of Criminal Justice Foundations certificate, the graduate should be able to:

- Explain goals, processes and organizational components of the American Justice System.
- Apply statutory and case law to various legal scenarios.
- Evaluate causes of adult and juvenile delinquent behavior and motivations for criminal activity.
- Analyze ethical dilemmas as they apply to victims, suspects, and the public.

Fall Semester I			Credits
CJC	111	Introduction to Criminal Justice	3
CJC	112	Criminology	3
Total			6

Spring Semester I			
CJC	212	Ethics and Community Relations	3
Total			3

Fall Semester II			
CJC	113	Juvenile Justice	3
CJC	131	Criminal Law	3
Total			6

Total credit hours required for certificate: 15

Culinary Arts

C 55 15 0 H1

Certificate

The Culinary Arts Certificate provides the student with specific training required to enter the foodservice industry in supporting roles. Students will learn the fundamental usage of kitchen equipment, tools, and basic cooking and baking. Students will be provided with theoretical knowledge and practical application that provide critical competencies to meet current industry demands. Graduates should qualify for entry-level positions such as prep cook, pantry cook, and kitchen assistance.

Program Outcomes:

Upon successful completion of the Culinary Arts certificate, the graduate should be able to:

- Demonstrate professional conduct and interpersonal communication skills with the public, vendors, and other culinary professionals.
- Apply principles and demonstrate proper food safety and sanitation procedures as well as personal hygiene by obtaining ServSafe Certification from National Restaurant Association.
- Understand foodservice equipment and technology effectively.
- Understand principles of cookery with emphasis on recipe conversion, measurements, terminology, classical knife cuts, food/equipment handling, soups, sauces and related topics.
- Apply dining room professionalism for guest relations and service.

Fall Semester I			Credits
CUL	110	Sanitation and Safety	2
CUL	110A	Sanitation and Safety Lab	1
CUL	140	Basic Culinary Skills	5
CUL	160	Baking	3
Total			11

Spring Semester I			
CUL	112	Nutrition for Foodservice	3
HRM	245	Human Resource Mgmt-Hosp	3
Total			6

Total credit hours required for certificate: 17

Early Childhood Education

C 55 22 0 H1

Certificate

The Early Childhood Education certificate introduces the student to the field of ECE through five classes of basic content and theory. Upon successful completion of EDU 119 the student earns the NC Child Care Credential and qualifies to be the lead teacher in a child care center. Additionally, all courses with EDU prefixes are used evaluate the educational level of each child care provider by the NC Division of Child Development and Early Education. Earning this ECE certificate will enable the student to be rated at five out of seven education points by the NC Star Rated License program and makes the student more employable.

Program Outcomes:

Upon successful the Early Childhood Education certificate, graduate should be able to:

- Promote child development and learning
- Use developmentally effective approaches to connect with children and families
- Become a professional by practicing professionalism and ethical conduct

Fall Semester I			Credits
EDU	119	Intro to Early Childhood Education	4
EDU	151	Creative Activities	3
Total			7

Spring Semester I			
EDU	146	Child Guidance	3
EDU	153	Health, Safety and Nutrition	3
Total			6

Fall Semester II			
EDU	144	Child Development I	3
Total			3

Total credit hours required for certificate: 16

Basic Electronics

C 40 20 0 H1

Certificate

The Electronics Engineering Technology Certificate is designed to equip students with a specialized skill set for immediate employment or to upgrade skills for job advancement. It can be completed in less than one year, and all the certificate courses can be applied toward the diploma or the AAS degree. In order to obtain a Basic Electronics Certificate, a student must complete at least 14 credit hours.

Program Outcomes:

Upon successful completion of the Basic Electronics Technology certificate, the graduate should be able to:

- Perform digital and analog circuit analysis;
- Use electronic test equipment to make appropriate measurements.

			Credits
EGR	131	Intro to Electronics Technology	2
ELC	131	Circuit Analysis I	4
ELN	131	Analog Electronics I	4
ELN	133	Digital Electronics	4
Total			14

Total credit hours required for certificate: 14

Emergency Management

C 55 46 0 H1

Certificate

The Emergency Management certificate is designed to provide technical and professional knowledge necessary to create a foundation of the emergency management field of study. The courses offered provide a full range of concepts for students to create a well-rounded knowledge base. Students will focus on an overview of emergency management, terrorism, phases of disaster management, and the national incident management system. No lab work is required to complete the certificate.

Program Outcome:

Upon successful completion of the Emergency Management Certificate, the graduate will be able to:

- Demonstrate a knowledge base in the field of emergency management and provide a foundation for future career decisions.

Fall Semester I			Credits
FIP	236	Emergency Management	3
EPT	220	Terrorism & Emergency Management	3
EPT	210	Response & Recovery	3
Total			9

Spring Semester I			
EPT	120	Sociology of Disaster	3
EPT	275	Emergency OPS Center Mgt.	3
Total			6

Summer Semester I			
EPT	150	EMS Incident Mgt.	3
Total			3

Total credit hours required for certificate: 18

Fire Protection Technology

C 55 24 0 H1

Certificate

The Fire Protection Technology certificate is designed to provide technical and professional knowledge necessary to create a foundation of the public/private fire protective services. The courses offered provide a full range of concepts for students to create a well-rounded knowledge base. Students will focus on an overview of the fire service, building construction, fire prevention, fire investigations, public fire safety education, and industry safety standards. No lab work is required to complete the certificate.

Program Outcome:

Upon successful completion the Fire Protection Technology certificate, graduate should be able to:

- Demonstrate a knowledge base of the fire service and provide a foundation for future career decisions.

Fall Semester I			Credits
FIP	120	Introduction to Fire Protection	3
FIP	132	Building Construction	3
Total			6

Spring Semester I			
FIP	124	Fire Prevention, Public Education	3
FIP	128	Fire Detection and Investigation	3
Total			6

Summer Semester I			
FIP	164	OSHA Standards	3
Total			3

Total credit hours required for certificate: 15

Geomatics Technology

C 40 42 0 H1

Certificate

The Geomatics Technology Certificate introduces students to the principles and fundamentals of Geomatics and related surveying concepts, use of computers for computations and drafting. Students are eligible to sit for the National Surveyor of Professional Surveyors-Level 1 Technician Certification Exam upon completion of the certificate. All credits can be transferred to the AAS degree in Geomatics.

Students can obtain employment as an entry level CAD technician/survey technician/rod man

Program Outcomes:

Upon successful completion of the Geomatics Technology certificate, the graduate should be able to:

- Use surveying instruments and surveying methods for land measurements and/or construction layout.
- Perform surveys and record data manually and electronically.
- Think critically about technical problems

Fall Semester I			Credits
EGR	115	Introduction to Technology	3
CEG	151	CAD for Engineering Technology	3
Total			6

Spring Semester I			
MAT	121	Algebra/Trigonometry I	3
SRV	110	Surveying I	4
Total			7

Summer Semester I			
SRV	111	Surveying II	4
Total			4

Total credit hours required for certificate: 17

Industrial Systems Technician-- Entry Level

C 50 24 0 H1

Certificate

The Industrial Systems Technology – Entry Level Industrial Systems Technician Certificate will provide a High School student the opportunity to apply what they learn right away. Students are required to take five introductory courses that are 40% Lecture and 60% Hands on labs. 14 credit hours are earned and can be transferred to the Industrial Systems Technology AAS degree.

Program Outcomes:

Upon successful completion of the Industrial Systems Technology Entry Level Technician certificate, the graduate should be able to:

- Demonstrate appropriate use of test equipment, evaluate performance and apply appropriate total preventative maintenance and troubleshooting techniques to electrical, mechanical, hydraulics and pneumatics systems.
- Interpret schematics and diagrams for electrical, mechanical, hydraulics and pneumatics systems.

Fall Semester I			Credits
BPR	135	Schematics & Diagrams	2
ELC	112	DC/AC Electricity	5
MNT	110	Intro to Maintenance Procedures	2
Total			9

Spring Semester I			
HYD	110	Hydraulics/Pneumatics	3
WLD	112	Basic Welding Processes	2
Total			5

Total credit hours required for certificate: 14

Mechatronics Engineering Technology Entry Level Technician

C 40 35 0 H1

Certificate

Inquisitive High School students needing to know how things work are great prospects for the Mechatronics Engineering Technology – Entry Level Mechatronics Technician Certificate. This program of study will force students to use their creative minds to analyze industrial automation processes and formulate corrective action to make the process better. Students will earn 17 transferable credit hours into the Mechatronics Engineering Technology AAS degree.

Program Outcomes:

Upon successful completion of the Mechatronics-Entry Level Technician certificate, the graduate should be able to:

- Demonstrate appropriate use of test equipment, evaluate performance and apply appropriate troubleshooting techniques to automation, electrical, motor and controls mechanical, hydraulics and pneumatics systems.
- Interpret schematics and diagrams for automation, motors and controls, electrical, mechanical, hydraulics and pneumatics systems.

Fall Semester I			Credits
DFT	119	CAD	2
ELC	112	DC/AC Electricity	5
Total			7

Spring Semester I			
ATR	112	Intro to Automation	3
ELC	117	Motors and Controls	4
HYD	110	Hydraulics/Pneu	3
Total			10

Total credit hours required for certificate: 17

Medical Office Administration

C 25 31 0 H1

Certificate

The Medical Office Administration Certificate will prepare the graduate to perform basic duties in a medical office.

Program Outcomes:

Upon successful completion of the Medical Office Administration certificate, the graduate should be able to:

- Apply knowledge of various software packages to a variety of work settings
- Analyze facts & circumstances in the medical office environment to make legal & ethical decisions.
- Apply office knowledge to produce professional documents
- Use medical terminology effectively

Fall Semester I			Credits
OST	136	Word Processing	3
OST	141	Medical Terminology I	3
OST	148	Medical Coding, Billing, & Insurance	3
Total			9

Spring Semester I			
OST	137	Office Software Applications	3
OST	142	Medical Terminology I	3
OST	149	Medical Legal Issues	3
Total			9

Total credit hours required for certificate: 18

Office Administration Receptionist

C 25 37 0 H1

Certificate

Upon successful completion of Software Applications certificate, the graduate will be qualified for a basic, entry-level position as a company receptionist.

Program Outcomes:

Apply office knowledge to produce simple office documents

Apply basic fiscal concepts in a personal and office setting.

Fall Semester I

			Credits
OST	131	Keyboarding	2
OST	137	Office Software Applications	3
OST	164	Text Editing Applications	3
Total			7

Spring Semester I

OST	136	Word Processing	3
OST	125	Personal Finance	3
OST	184	Records Management	3
Total			9

Total credit hours required for certificate: 17

Telecommunications and Network Engineering Technology

D 40 40 0 H1

Diploma

The Telecommunications and Network Engineering Technology Diploma program is for individuals wishing to quickly gain a basic foundation in telecommunications. The diploma's primary emphasis is on telecommunication systems such as computers, telephones, Internet hook-ups and local area networks. The TNET diploma is frequently used by individuals as a way of preparing for telecommunication and networking certification exams.

Students will obtain credits in basic telecommunications while in the TNET Diploma program which will apply towards an Associate in Applied Science degree. In order to obtain a TNET Diploma, a student must complete at least 36 credit hours.

Program Outcomes:

Upon successful completion of the Telecommunications and Network Engineering Technology diploma, the graduate should be able to:

- Practice successful employability skills
- Demonstrate an understanding of telecommunication and networking concepts
- Use and explain different operating systems and topologies
- Install and manage a local/wide area network

Fall Semester I

			Credits
EGR	131	Introduction to Electronic Technology	2
ELC	131	Circuit Analysis I	4
TNE	111	Campus Networks I	3
MAT	120	Geometry and Trigonometry	3
ENG	111	Expository Writing	3
Total			15

Spring Semester I

CET	111	Computer Upgrade/Repair I	3
ELN	131	Analog Electronics I	4
ELN	133	Digital Electronics	4
TNE	121	Campus Networks II	3
MAT	121	Algebra / Trigonometry I	3
Total			17

Summer Semester I

CET	125	Voice & Data Cabling	3
TNE	250	Introduction to Telecom Networks	3
Total			6

Total credit hours required for diploma: 38

MAT 175 MAT 271

Turfgrass Management Technology Certificate

C 15 42 0 H1

Certificate

The Career and College Promise Initiative Certificate in Turfgrass Management A15420 C4 is intended for students wanting to take college courses while in high school that can lead to credential to use for seeking employment or to earn college credits to apply toward the Turfgrass Management Technology AAS degree.

Program Outcomes:

Upon successful completion of the Turfgrass Management Technology certificate, the graduate should be able to:

- Identify common turfgrass species and their habitats.
- Irrigate sports fields according to turf requirements, soil types, and water resource regulations.
- Identify up to 80 common landscaping plant materials and their habitats.
- Perform routine maintenance on turfgrass equipment.
- Operate turfgrass equipment in safe and efficient manner

First Semester			Credits
TRF	110	Intro to Turfgrass Cult ID	4
TRF	120	Turfgrass Irrigation & Design	4
HOR	160	Plant Materials I	3
Total			11

Second Semester			Credits
TRF	210	Turfgrass Equipment Management	3
Total			3

Total credit hours required for certificate: 14

Web Technologies--Basic

C 25 29 0 H1

Certificate

The Web Technologies--Basic certificate prepares the student for the following external certification: Certified Internet Webmaster (CIW); W3Schools HTML Developer

Zend PHP; and Microsoft Certified Professional Developer: ASP.NET. Job Opportunities include Website Developer, Website Administrator, and Website Graphic Designer

Program Outcomes:

Upon completion of the Web Technologies--Basic certificate, the graduate should be able to:

- Evaluate the requirements of effective website design and development
- Analyze the technical needs of the client and end-users
- Design a complete website while completing all phases of the Software Development Life Cycle
- Design a website to meet end-user specifications
- Code a website to meet end-user specifications
- Develop a website that integrates with a relational database
- Develop a website that incorporates static and dynamic content with current industry standard software and techniques
- Identify inefficiencies in existing website designs
- Revise existing websites to enhance appearance, coding, and overall functionality
- Assess various tools utilized by website designers and developers
- Examine emerging technologies within the industry

Courses			Credits
CIS	110	Introduction to Computers	3
CIS	115	Intro to Prog & Logic	3
WEB	110	Internet/Web Fundamentals	3
WEB	120	Intro Internet Multimedia	3
WEB	140	Web Development Tools	3
Total			15

Total credit hours required for certificate: 15

Welding Technology

D 50 42 0 H1

Diploma

Contact: (336) 334-4822, ext. 50411

The Welding Technology curriculum provides students with a sound understanding of the science, technology and applications essential for successful employment in the welding and metalworking industry. Instruction includes consumable and non-consumable electrode welding and cutting processes. Courses in may include math, print reading, metallurgy, welding inspection, and destructive and non-destructive testing providing the student with industry-standard skills developed through classroom training and practical application.

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.

Emphasis is placed on developing the skills necessary to obtain certification in Gas Metal Arc, gas tungsten arc, and shielded metal arc welding of plate and pipe.

Program Outcomes:

Upon successful completion of the Welding diploma, the graduate should be able to:

- Set up and safe operation of all welding equipment;
- Identify metals and read drawings
- Perform miscellaneous welding activities
- Practice safety in the workplace
- Demonstrate effective communication

Fall Semester I			Credits
WLD	110	Cutting Processes	2
WLD	115	SMAW (Stick) Plate	5
WLD	121	GMAW (MIG) FCAW/Plate	4
ENG	102	Applied Communications II	3
Total			14

Spring Semester I			
WLD	131	GTAW (TIG) Plate	4
WLD	141	Symbols and Specifications	3
WLD	215	SMAW (Stick) Pipe	4
MAT	120	Geometry and Trigonometry	3
DFT	119	Basic CAD	2
Total			16

Summer Semester I			
WLD	261	Certification Practices	2
WLD	132	GTAW (TIG) Plate/Pipe	3
WLD	151	Fabrication I	4
Total			9

Total credit hours required for diploma: 39

Welding Technology

C 50 42 0 H1

Certificate

The Welding Technology Certificate Program provides students with a practical 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.

The welding courses incorporate safety, welding, visual welding inspection and destructive testing. This program provides students with industry standard skills developed through classroom instruction and practical application.

Upon completion of the Welding Technology Certificate Program, students may be employed as entry-level welders in manufacturing and/or the construction industry.

All courses included in the Welding Technology Certificate Program are core courses for the Diploma program.

Program Outcomes:

Upon successful completion of the Welding diploma, the graduate should be able to:

- Set up and safe operation of all welding equipment
- Perform miscellaneous welding activities
- Practice safety in the workplace

Fall Semester I			Credits
WLD	115	SMAW (Stick) Plate	5
WLD	121	GMAW (MIG) FCAW/Plate	4
Total			9

Spring Semester I			
WLD	131	GTAW (TIG) Plate	4
WLD	215	SMAW (Stick) Pipe	4
Total			8

Total credit hours required for certificate: 17

understanding course requirements

Guilford Technical Community College is committed to student success. The college offers courses for students who need additional academic preparation. GTCC requires that students are proficient in reading, writing, and math or a combination of these basic skills before they can enroll in most college courses.

Developmental Education

The Developmental Education division is the backbone of GTCC's open-door admissions policy. Some students seek admission to curriculum programs and find themselves under-prepared. Developmental education offers these students an opportunity to develop academic skills to enable them to enter their chosen program with an improved chance for success.

Nearly all students who apply to associate's degree programs and those who apply to some one-year diploma programs have their skills evaluated in reading, writing, and mathematics. Applicants whose scores fall below the minimum required by curriculum programs or for entry-level courses in English, reading intensive courses, and mathematics are referred to developmental education for course work. Developmental education courses may be taken prior to or with some curriculum courses, depending on guidelines of the chosen program of study.

Developmental education courses also may be selected by students who wish to improve their basic academic skills. The courses are offered in reading, English grammar and composition, academic skills, and mathematics. These courses allow students to concentrate on their individual academic needs and gain confidence in their abilities.

Developmental education courses in reading, writing, and mathematics are indicated with a zero as the first number in the course code. Students must complete specific developmental mathematics modules as required by their program of study. Students should consult with an advisor before registering for developmental math modules.

English As A Foreign Language

English as a Foreign Language courses are designed for students whose first language is not American English. These courses help students prepare for college level academic expectations in the areas of grammar, composition, reading, listening/speaking and cultural components. English as a Foreign Language courses are offered under the EFL prefix.

Outcomes of Developmental Education

Upon successful completion of the required developmental education sequence, students should be able to:

- Apply basic reading skills at the minimum level established by the curriculum
- Apply basic grammatical principles of standard written English at the minimum level established by the curriculum
- Apply basic writing skills at the minimum level established by the curriculum
- Apply basic mathematical skills at the minimum level required by the curriculum
- Apply targeted employability skills
- Apply basic life skills

course descriptions

The following is an alpha-numeric listing of course descriptions for all curriculum programs. A three-letter course prefix identifies the program area in which a course is offered. The three or four digit course number identifies a specific course within a program. The course title introduces the subject matter of a course. The group of numbers to the right of a course title gives, in order of information, the lecture hours per week, laboratory and/or shop hours per week, clinic and/or cooperative work hours per week, and the last digit gives the semester credit hours awarded for successful completion of the course.

Prefix	Course Number	Course Title	Hours per Week			Credit Hours
			Lecture	Lab / Shop	Clinic / Co-op	

Academic Related (ACA)

ACA 111	College Student Success	1	0	0	1

This course introduces the college's physical, academic, and social environment and promotes the personal development essential for success. Topics include campus facilities and resources; policies, procedures, and programs; study skills; and life management issues such as health, self-esteem, motivation, goal-setting, diversity, and communication. Upon completion, students should be able to function effectively within the college environment to meet their educational objectives.

ACA 112	Intro to Distance Learning	0	2	0	1

This course introduces the college's distance learning virtual, physical, academic, and global environments and develops skills and knowledge for successful distance learning. Topics include distance FAQs, course enrollment, study resources, learning formats, study completion tips, vocabulary and terminology, useful forms and guides, student logins, and online tutorials. Upon completion, students should be able to function effectively as learners in community college distance education environments.

ACA 115	Success and Study Skills	0	2	0	1

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 118	College Study Skills	1	2	0	2

This course covers skills and strategies designed to improve study behaviors. Topics include time management, note taking, test taking, memory techniques, active reading strategies, critical thinking, communication skills, learning styles, and other strategies for effective learning. Upon completion, students should be able to apply appropriate study strategies and techniques to the development of an effective study plan.

ACA 122	College Transfer Success	1	0	0	1

This course provides information and strategies necessary to develop clear academic and professional goals beyond the community college experience. Topics include the CAA, college culture, career exploration, gathering information on senior institutions, strategic planning, critical thinking, and communications skills for a successful academic transition. Upon completion, students should be able to develop an academic plan to transition successfully to senior institutions. *This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.*

Accounting (ACC)

ACC 115	College Accounting	3	2	0	4

This course introduces basic accounting principles for a business. Topics include the complete accounting cycle with end-of-period statements, bank reconciliation, payrolls, and petty cash. Upon completion, students should be able to demonstrate an understanding of accounting principles and apply those skills to a business organization. Pre-requisite: (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050).

ACC 120	Principles of Financial Accounting	3	2	0	4
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisites: [(RED 090 and ENG 090), ENG 095, or (EFL 074, EFL 084, and EFL 094)], and (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050).					
ACC 121	Principles of Managerial Accounting	3	2	0	4
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: ACC 120 .					
ACC 129	Individual Income Taxes	2	2	0	3
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	0	3
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. Pre-requisite: ACC 129 .					
ACC 140	Payroll Accounting	1	2	0	2
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. Pre-requisite: ACC 115 or ACC 120 .					
ACC 149	Intro to Accounting Spreadsheets	1	2	0	2
This course provides a working knowledge of computer spreadsheets and their use in accounting. Topics include pre-programmed problems, model-building problems, beginning-level macros, graphics, and what-if analysis enhancements of template problems. Upon completion, students should be able to use a computer spreadsheet to complete many of the tasks required in accounting. Pre-requisite: ACC 115 or ACC 120 .					
ACC 150	Accounting Software Applications	1	2	0	2
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. Pre-requisite: ACC 115 or ACC 120 .					
ACC 151	Accounting Spreadsheet Applications	1	2	0	2
This course is designed to facilitate the use of spreadsheet technology as applied to accounting principles. Emphasis is placed on using spreadsheet software as a problem-solving and decision-making tool. 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. Pre-requisite: ACC 149 .					
ACC 180	Practices in Bookkeeping	3	0	0	3
This course provides advanced instruction in bookkeeping and record-keeping functions. Emphasis is placed on mastering adjusting entries, correction of errors, depreciation, payroll, and inventory. Upon completion, students should be able to conduct all key bookkeeping functions for small business. This course can be taken by non-degree seeking individuals who wish to obtain the Certified Bookkeeper Credential. Pre-requisite: ACC 120 and ACC 140 .					
ACC 220	Intermediate Accounting I	3	2	0	4
This course is a continuation of the study of accounting principles with in-depth coverage of theoretical concepts and financial statements. Topics include generally accepted accounting principles and extensive 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. Pre-requisite: ACC 120 .					
ACC 221	Intermediate Accounting II	3	2	0	4
This course is a continuation of ACC 220 . Emphasis is placed on special problems which may include leases, bonds, investments, ratio analysis, present value applications, accounting changes, and corrections. 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. Pre-requisite: ACC 220 .					

ACC	225	Cost Accounting	3	0	0	3
This course introduces the nature and purposes of cost accounting as an information system for planning and control. Topics include direct materials, direct labor, factory overhead, process, job order, and standard cost systems. 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. Pre-requisite: ACC 121 .						
ACC	226	Managerial Accounting	3	0	0	3
This course is designed to develop an appreciation for the uses of cost information in the administration and control of business organizations. Emphasis is placed on how accounting data can be interpreted and used by management in planning and controlling business activities. Upon completion, students should be able to analyze and interpret cost information and present this information in a form that is usable by management.						
ACC	227	Practices in Accounting	3	0	0	3
This course provides an advanced in-depth study of selected topics in accounting using case studies and individual and group problem solving. Topics include cash flow, financial statement analysis, individual and group problem solving, practical approaches to dealing with clients, ethics, and critical thinking. Upon completion, students should be able to demonstrate competent analytical skills and effective communication of their analysis in written and/or oral presentations.						
ACC	240	Gov & Not-for-Profit Acct	3	0	0	3
This course introduces principles and procedures applicable to governmental and not-for-profit organizations. Emphasis is placed on various budgetary accounting procedures and fund accounting. Upon completion, students should be able to demonstrate an understanding of the principles involved and display an analytical problem-solving ability for the topics covered. Pre-requisite: ACC 121 .						
ACC	269	Audit & Assurance Services	3	0	0	3
This course introduces selected topics pertaining to the objectives, theory and practices in engagements providing auditing and other assurance services. Topics 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. Pre-requisite: ACC 220 .						

Aerospace and Flight Training (AER)

AER	110	Air Navigation	2	2	0	3
This course covers the basic elements of air navigation, fundamentals of pilotage and dead reckoning, and the use of a plotter, computer, and aerial charts. Topics include pilotage, dead reckoning, radio navigation, LORAN, Global Positioning Systems, and the use of FAA publications. Upon completion, students should be able to interpret aeronautical charts and apply navigational principles.						
AER	111	Aviation Meteorology	3	0	0	3
This course covers the atmosphere, interpretation and measurement of meteorological elements, and the effects of such on aircraft operations and performance. Topics include heat exchanges in the atmosphere; temperature, pressure, stability, clouds, air masses, fronts, and thunderstorms; and the use and interpretation of weather data. Upon completion, students should be able to analyze weather data for flight planning and safe flying.						
AER	112	Aviation Laws and Federal Aviation Regulations	2	0	0	2
This course provides an in-depth study of the state, federal, and international regulations forming the structure of aviation law. Emphasis is placed on Federal Aviation Regulations Parts 61, 91, and 135 with additional emphasis on legal issues in aviation law. Upon completion, students should be able to apply legal principles and interpret federal air regulations.						
AER	113	History of Aviation	2	0	0	2
This course provides a historical survey of the efforts of manned-flight. Topics include the development of aircraft, milestones in aviation, noted pioneers, and the socioeconomic impact of flight upon modern civilization. Upon completion, students should be able to demonstrate an understanding of the advancements that aviation has accrued for society and contemporary changes in aviation.						
AER	114	Aviation Management	3	0	0	3
This course covers operation of a flight department on a cost-effective basis and analysis of profit and loss statements. Topics include flight operations costs, aircraft acquisition analysis and cost comparisons, costs versus revenue, and break-even points. Upon completion, students should be able to calculate cost of flight operations and apply monthly and annual budget analysis.						

AER 119	Aircraft Structures	2	0	0	2
This course introduces aircraft airframes and associated appliances. Emphasis is placed on strength of materials, aircraft standards, type certificate data sheets, basic airframe construction, and weight and balance fundamentals. Upon completion, students should be able to analyze strength of materials data and apply their analysis to semi-monocoque, full-cantilever, and truss-type airframes.					
AER 150	Private Pilot Flight Theory	2	2	0	3
This course covers the aeronautical knowledge required to meet the Federal Aviation Administration regulations for private pilot certification. Topics include the principles of flight, the flight environment, basic aircraft systems and performance, basic meteorology and weather data interpretation, and FAA regulations. Upon completion, students should be able to demonstrate the competencies required for the FAA written examination for a private pilot certificate.					
AER 151	Flight-Private Pilot	0	3	0	1
This course provides the hands-on training needed to qualify for a Federal Aviation Administration private pilot certificate. Topics include flight maneuvers (ground procedures, take-offs, climbs, level flight, turns, glides, stalls, slow flight, descents, slips, landings, emergency procedures) and cross-country planning and navigation. Upon completion, students should be able to demonstrate the competencies required for the flight test practical exam for the private pilot certificate. Attainment of the FAA Private Pilot Certificate is required for course completion, which means that the student is responsible for obtaining all flight training at an offsite facility and will incur associated costs.					
AER 160	Instrument Flight Theory	2	2	0	3
This course covers the required aeronautical knowledge of the Federal Aviation Administration Regulation Instrument Ground School. Topics include a study of instruments, systems, instrument flight charts, instrument flight planning, approach procedures, and the IFR regulations. Upon completion, students should be able to demonstrate the competencies required to complete the FAA written examination for an instrument rating. Pre-requisite: AER 150.					
AER 161	Flight-Instrument Pilot	0	6	0	2
This course covers instruction and training in instrument flight planning including IFR navigation, VOR, ILS, ADF, and compliance with ATC procedures. Emphasis is placed on approach and navigation procedures, including holding and missed approaches, and development of skill in executing en route and approach procedures. Upon completion, students should be able to plan and execute an IFR flight and demonstrate competencies required for the FAA instrument pilot flight exam. Attainment of the FAA Instrument Rating is required for course completion, which means that the student is responsible for obtaining all flight training at an offsite facility and will incur associated costs. Pre-requisite: AER 151 .					
AER 170	Commercial Flight Theory	3	0	0	3
This course covers advanced aircraft control, cross-country operations, and other topics required for the FAA commercial pilot written exam. Emphasis is placed on the principles of aircraft performance and operation, take-off performance, cruise performance, descent and landing performance, and weight and balance computations. Upon completion, students should be able to demonstrate commercial pilot skills and competence in the materials required for the FAA written commercial pilot examination. Pre-requisite: AER 150.					
AER 171	Flight-Commercial Pilot	0	6	0	3
This course provides the hands-on training needed to qualify for a Federal Aviation Administration commercial pilot certificate. Topics include flight instruction in advanced precision maneuvers, maximum performance take-off and landings, emergency procedures, operation of complex aircraft, aircraft performance, and range and fuel planning. Upon completion, students should be able to demonstrate competence in the areas of the flight test practical exam for the commercial pilot certificate. Attainment of the FAA Commercial Pilot Certificate is required for course completion, which means that the student is responsible for obtaining all flight training at an offsite facility and will incur associated costs. Pre-requisite: AER 161 .					
AER 210	Flight Dynamics	3	0	0	3
This course covers basic and advanced principles of aerodynamic phenomena and fluid flow. Topics include airflow phenomena; lift/weight/thrust/drag; aircraft configuration characteristics, stability, and control; subsonic, transonic, and supersonic flight; critical Mach numbers; and the V-g Diagram. Upon completion, students should be able to explain the elements of applied aerodynamics and aeronautical engineering which relate directly to the problems of flight operations.					
AER 211	Air Traffic Control	2	0	0	2
This course provides a detailed analysis of all aspects of air traffic control. Emphasis is placed on an in-depth analysis of air traffic control, including utilization of the air traffic environment based on the pilot's and controller's perspective. Upon completion, students should be able to operate an aircraft within the national airspace system under FAA air traffic control. Co-requisite: AER 160.					

AER 212	Air Transport Pilot	3	0	0	3
This course provides advanced study for the professional pilot. Topics include an in-depth study of B-727/737 weight and balance, high altitude weather, Part 121 FARs, and performance considerations of large aircraft. Upon completion, students should be able to calculate weight and balance of large aircraft, determine performance data, and apply high altitude weather principles. Pre-requisites: AER 160 and AER 170 .					
AER 213	Avionics	2	0	0	2
This course covers standard navigational and communications equipment and theory. Emphasis is placed on aviation radio spectrum, VHF omnirange, ILS, ADF, transponders, weather radar, flight directors, and autopilots. Upon completion, students should be able to utilize VOR, ADF, ILS, GPS, flight directors, HSI's, and autopilots in the flight environment.					
AER 215	Flight Safety	3	0	0	3
This course covers the basic procedures and practices of aircraft accident prevention, accident investigation, and reporting. Topics include a comprehensive review of federal regulations pertinent to aviation safety and analysis of actual aviation accident cases and their causes. Upon completion, students should be able to demonstrate an understanding and respect for specific personal factors such as attitude, motivation, and skill related to flight safety.					
AER 216	Engines and Systems	2	2	0	3
This course introduces piston and turbine aircraft engines and associated systems. Topics include aircraft hydraulic, pneumatic, electrical, air conditioning, and pressurization systems along with the theory of engine operations, including power and thrust computations. Upon completion, students should be able to apply principles of engine and systems operation.					
AER 217	Air Transportation	3	0	0	3
This course covers the development and present status of the air transportation system. Topics include federal legislation, characteristics and classification of air carriers, development of the air traffic control system, and the organization and function of the FAA. Upon completion, students should be able to relate the knowledge acquired to career development.					
AER 218	Human Factors in Aviation	2	0	0	2
This course analyzes interpersonal relationships in the cockpit and related psychological factors that affect pilot performance and efficiency during flight operations. Topics include cockpit management, judgment, aircraft and flight crew coordination and control, physiological factors, responsibility, and decision-making capabilities. Upon completion, students should be able to apply work-proven routines to stress management, crew responsibility, and the team concept in the cockpit.					
AER 220	Airport Management	2	0	0	2
This course examines the major functions of airport management and the concepts underlying airport planning and construction. Topics include forecasting volumes and airport size and design, including master planning, location requirements, site selection, runway configuration, zoning laws, and other considerations. Upon completion, students should be able to demonstrate basic airport management skills including an understanding of the socioeconomic effect of airports on the community.					
AER 280	Instructor Pilot Flight Theory	3	0	0	3
This course covers flight instruction and the skills and knowledge necessary to work effectively as a flight instructor. Topics include fundamentals of instruction, lesson planning, instructor regulations and endorsements, and related aeronautical knowledge. Upon completion, students should be able to demonstrate competence necessary for the Federal Aviation Administration Fundamentals of Instructing Test and the appropriate instructor written examination. Pre-requisite: AER 170 .					
AER 281	Flight-CFI	0	3	0	1
This course provides experience in preparation for the flight instructor practical test. Emphasis is placed on the ability to transition to right seat flight while teaching performance maneuvers including operation of a complex aircraft. Upon completion, students should be able to demonstrate competence in right seat operation and CFI maneuvers as specified in the FAA Practical Test Standards. Pre-requisite: AER 171 .					
AER 285	Flight-Multi-Engine	0	3	0	1
This course provides the flight training required to obtain a multi-engine rating. Topics include multi-engine safety procedures, single-engine operations and performance, VMC, instrument approaches (single- and multi-engine), and emergency procedures. Upon completion, students should be able to demonstrate the competencies required for the flight test practical examination for a multi-engine rating. Pre-requisite: AER 171 .					

Aviation Electronics Technology - Avionics (AET)

AET 120 Sheet Metal Aircraft Structures 1 2 0 2

This course covers the methods and materials used in the construction, design, and repair of aircraft metallic structures. Topics include approved methods, processes, and procedures used in inspection, repair, manufacture, and fabrication of sheet metal structures. Upon completion, students should be able to inspect, construct, and repair sheet metal structures. Pre-requisite: **AVI 110**. Co-requisites: AET 122, AET124, and AET 126.

AET 122 Airframe Electrical 2 4 0 4

This course introduces the operation, installation, and repair of engine and airframe electrical components. Topics include wiring, controls, switches, protective devices, lighting systems, AC circuits, and related electrical accessories. Upon completion, students should be able to install or repair wiring, controls, circuit breakers, switches, electrical accessories, and interpret wire gauge charts. Pre-requisite: **AVI 110**. Co-requisites: AET 120, AET 124, and AET 126.

AET 124 Airframe Systems 2 6 0 4

This course introduces students to the study of various systems on modern aircraft, including atmosphere control systems, pressurization, heating, cooling, and oxygen systems. Topics include various pneumatic and electrically operated ice and rain, pneumatic, and atmospheric systems. Upon completion, students should be able to identify, disassemble, inspect, and reassemble heating, air conditioning and pressurization systems. Pre-requisite: **AVI 110**. Co-requisites: AET 120, AET 122, and AET 126.

AET 126 Electronics/Instruments 1 2 0 2

This course introduces students to the study of theory and application of electronic flight instruments and avionics systems as found in modern aircraft. Topics include the markings and operation of gyroscopic, temperature, direction, and pitot/static operated instruments systems. Upon completion, students should be able to perform pitot/static checks, bench test instruments and then perform tests on the entire system. Pre-requisite: **AVI 110**. Co-requisites: AET 120, AET 122, and AET 124.

AET 130 Aviation Engine Electrical 2 4 0 4

This course introduces students to the study of engine electrical systems and instruments used on turbine-powered and reciprocating engine-powered aircraft. Topics emphasize mechanical power generating and engine starting systems, including hands-on experience with removal, installation, disassembly, troubleshooting, and adjustment of starting, regulating, and monitoring devices. Upon completion, students should be able to evaluate a complete aircraft engine electrical system using provided schematics and determine corrective actions when necessary. Pre-requisite: **AVI 110** and AET 122.

AET 132 FAA Regulations 1 3 0 2

This course introduces students to the practical experience in the day-to-day operations of a Federal Aviation Administration Certified Repair Station. Topics include the completion of FAA forms and records, maintenance of technical data, and servicing equipment. Upon completion, students should be able to determine instances when FAA documentation is required and accurately document each case. Pre-requisite: **AVI 110**.

AET 210 Practical Wiring/Factors 1 3 0 2

This course introduces students to the concepts, practical application of aircraft wiring, and aviation system interconnection procedures. Topics include aircraft structural considerations, wiring harness construction, schematic design and reading, cockpit instrument panel design, and FAA regulatory considerations for electrical installations. Upon completion, students should be able to interpret schematics, and draw a GNS 430W pin-out including its interface with other related equipment. Pre-requisite: **AVI 110** and (AET 122 or AST Airframe Completion).

AET 212 Aviation Communication Systems 1 3 0 2

This course introduces students to the concepts and practical maintenance of VHF and UHF communications, as well as inter-cabin communication. Topics include VHF and UHF communications, inter-cabin communication systems, the associated wiring, antennas, bench and ramp testing of components. Upon completion, students should be able to identify and explain communication wiring, components, schematics, and troubleshooting techniques for aviation communication systems. Pre-requisite: **AVI 110** and AET 210

AET 214 Aviation Navigation Systems 1 3 0 2

This course introduces students to navigational systems including VOR, ILS, ADF, antennas, and equipment testing. Topics include manufacturer's schematics for identifying wiring and components, manufacturer's assembly specifications, wiring, and calibrating a course deviation indicator using IFR 4000 test equipment. Upon completion, students should be able to identify the navigational wiring, explain its function, and solve faults associated with navigation systems. Pre-requisite: **AVI 110** and AET 210.

AET	216	ATC Navigation Systems	1	3	0	2
This course introduces students to flight line testing of air traffic control transponders, ADS-B, TIS, TAS, traffic avoidance systems, and ELT systems. Topics include IFR 4000 ELT, IFR 6000 testing of common aviation navigation system components and associated antennas, and satellite navigational systems. Upon completion of this course the student will be able to design an instrument panel, upload the design, and test it with IFR test equipment. Pre-requisite: AVI 110 and AET 210.						
AET	218	Tactical Navigation Systems	1	3	0	2
This course introduces students to passive weather systems used on-board aircraft, weather radar, and radar altimeters with associated antennas. Topics include tactical navigation, passive weather detection, collision avoidance systems, and the roll of the FAA's reduced vertical separation minimums and terrain awareness systems. Upon completion, students should be able to identify weather radar, installation requirements, testing considerations and identify the requirements for collision avoidance. Pre-requisites: AVI 110 and AET 210.						
AET	220	Flight Management	1	2	0	2
This course introduces students to the theoretical concepts and maintenance of autopilots, integrated flight control systems, and flight management systems. Topics include interaction with area navigation systems, including, land-based area navigation (VOR/DME R-NAV), GPS, and interfacing with autopilot. Upon completion, students should be able to create a flight plan and GPS approaches to determine the proficiency of an avionics system. Pre-requisite: AVI 110 and AET 210.						
AET	222	Aviation System Interconnect	1	2	0	2
This course introduces students to the study of databus communications in avionics systems, flight data recorders, and entertainments systems. Topics include databus architectures, protocols, industry standardized busses including RS, ARINC and AFDX (Ethernet), flight data recorders, entertainment, DVD, and moving maps. Upon completion, students should be able to explain the design and differences between digital and analog systems being utilized in modern avionics systems. Pre-requisite: AVI 110 and AET 210.						
AET	224	Advanced Wire/Troubleshooting	2	6	0	4
This course introduces students to the study of advanced electronics applied to aviation and the study of component level troubleshooting. Topics include wiring, programming, aligning, and troubleshooting a G900 or similar integrated avionics stack and similar navigation systems in a repair station environment. Upon completion, students should be able to interpret schematics, configure, and troubleshoot a G900 Integrated Avionics or similar package assembly. Pre-requisite: AVI 110 and AET 210.						
AET	226	Flight Line Testing	1	2	0	2
This course introduces students to the study of avionics systems found onboard modern aircraft focusing on flight line testing of communications and navigation systems. Topics include flight line testing to troubleshoot and configure using IFR 6000, IFR 4000 test equipment in conjunction with a pitot/static test set. Upon completion, students should be able to test with the IFR 4000 test set to complete certifications for an IFR aircraft. Pre-requisite: AVI 110 and AET 210.						
AET	228	Avionics FCC Preparation	1	2	0	2
This course introduces students to the study of preparing for the Federal Communications Commission General Radio Telephone License examination. Topics covered include avionics circuits, troubleshooting techniques, aviation transmitters and receivers, antennas, Federal Communications Commission rules, and a review of test taking techniques. Upon completion, students should be prepared for the Federal Communications Commission General Radio Telephone License or similar examination.						

Air Conditioning, Heating and Refrigeration (AHR)

AHR	110	Introduction to Refrigeration	2	6	0	5
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	0	3
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. Pre-requisites: [RED 080, ENG 085, or (EFL 074, EFL 084, and EFL 094)] and (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050).						
AHR	112	Heating Technology	2	4	0	4
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. Pre-requisites: [RED 080, ENG 085, or (EFL 074, EFL 084, and EFL 094)] and (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050).						
AHR	113	Comfort Cooling	2	4	0	4
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 psychrometrics, manufacturer specifications, and test instruments to determine proper system operation. Pre-requisites: [RED 080, ENG 085, or (EFL 074, EFL 084, and EFL 094)] and (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050) and AHR 110.						
AHR	114	Heat Pump Technology	2	4	0	4
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. Pre-requisite: AHR 110 or AHR 113 .						
AHR	120	HVACR Maintenance	1	3	0	2
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. Pre-requisites: [RED 080, ENG 085, or (EFL 074, EFL 084, and EFL 094)] and (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050).						
AHR	130	HVAC Controls	2	2	0	3
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 system controls. Pre-requisites: (Take one: AHR 111 , ELC 111 , or ELC 112) and [RED 080, ENG 085, or (EFL 074, EFL 084, and EFL 094)] and (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050).						
AHR	160	Refrigerant Certification	1	0	0	1
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. Pre-requisite: CIS 111. Co-requisite: AHR 110.						
AHR	180	HVACR Customer Relations	1	0	0	1
This course introduces common business and customer relation practices that may be encountered in HVACR. Topics include business practices, appearance of self and vehicle, ways of handling customer complaints, invoices, telephone communications, and warranties. Upon completion, students should be able to present themselves to customers in a professional manner, understand how the business operates, complete invoices, and handle complaints.						
AHR	210	Residential Building Code	1	2	0	2
This course covers the residential building codes that are applicable to the design and installation of HVAC systems. Topics include current residential codes as applied to HVAC design, service, and installation. Upon completion, students should be able to demonstrate the correct usage of residential building codes that apply to specific areas of the HVAC trade. Pre-requisites: [RED 080, ENG 085, or (EFL 074, EFL 084, and EFL 094)], and (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050), and CIS 111. Co-requisite: AHR 110.						

AHR 211	Residential System Design	2	2	0	3
This course introduces the principles and concepts of conventional residential heating and cooling system design. Topics include heating and cooling load estimating, basic psychrometrics, 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	0	4
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. Pre-requisite: AHR 114 .					
AHR 213	HVACR Building Code	1	2	0	2
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.					
AHR 215	Commercial HVAC Controls	1	3	0	2
This course introduces HVAC control systems used in commercial applications. Topics include electric/electronic control systems, pneumatic control systems, DDC temperature sensors, humidity sensors, pressure sensors, wiring, controllers, actuators, and controlled devices. Upon completion, students should be able to verify or correct the performance of common control systems with regard to sequence of operation and safety. Pre-requisite: Take one: AHR 111 , ELC 111 , or ELC 112 .					
AHR 220	Commercial Building Codes	2	0	0	2
This course covers the appropriate sections of the North Carolina State Building Code that govern the installation of commercial comfort, refrigeration, and mechanical systems. Emphasis is placed on using and understanding applications sections of the North Carolina State Building Code. Upon completion, students should be able to use the North Carolina State Building Code to locate information regarding the installation of commercial systems.					
AHR 225	Commercial System Design	2	3	0	3
This course covers the principles of designing heating and cooling systems for commercial buildings. Emphasis is placed on commercial heat loss/gain calculations, applied psychrometrics, air-flow calculations, air distribution system design, and equipment selection. Upon completion, students should be able to calculate heat loss/gain, design and size air and water distribution systems, and select equipment. Pre-requisite: AHR 211 .					
AHR 235	Refrigeration Design	2	2	0	3
This course covers the principles of commercial refrigeration system operation and design. Topics include walk-in coolers, walk-in freezers, system components, load calculations, equipment selection, defrost systems, refrigerant line sizing, and electric controls. Upon completion, students should be able to design, adjust, and perform routine service procedures on a commercial refrigeration system. Pre-requisite: AHR 110 .					
AHR 240	Hydronic Heating	1	3	0	2
This course covers the accepted procedures for proper design, installation, and balance of hydronic heating systems for residential or commercial buildings. Topics include heating equipment; pump, terminal unit, and accessory selection; piping system selection and design; and pipe sizing and troubleshooting. Upon completion, students should be able to assist with the proper design, installation, and balance of typical hydronic systems. Pre-requisite: AHR 112 .					
AHR 250	HVAC System Diagnostics	0	4	0	2
This course is a comprehensive study of air conditioning, heating, and refrigeration system diagnostics and corrective measures. Topics include advanced system analysis, measurement of operating efficiency, and inspection and correction of all major system components. Upon completion, students should be able to restore a residential or commercial AHR system so that it operates at or near manufacturers' specifications. Co-requisite: AHR 212 .					
AHR 255	Indoor Air Quality	1	2	0	2
This course introduces the techniques of assessing and maintaining the quality of the indoor environment in residential and commercial structures. Topics include handling and investigating complaints, filter selection, humidity control, testing for sources of carbon monoxide, impact of mechanical ventilation, and building and duct pressures. Upon completion, students should be able to assist in investigating and solving common indoor air quality problems.					

AHR	263	Energy Management	1	3	0	2

This course covers building automation computer programming as currently used in energy management. Topics include night setback, duty cycling, synchronization, schedule optimization, and anticipatory temperature control. Upon completion, students should be able to write programs utilizing the above topics and connect computer systems to HVAC systems. Pre-requisite: **AHR 125** or **AHR 215**.

Anthropology (ANT)

ANT	210	General Anthropology	3	0	0	3

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 for transfer under the CAA as a general education course in Social/Behavioral Sciences.* Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).

ANT	220	Cultural Anthropology	3	0	0	3

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 ethology, 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 for transfer under the CAA as a general education course in Social/Behavioral Sciences.* Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).

Architecture (ARC)

ARC	111	Intro to Arch Technology	1	6	0	3

This course introduces basic architectural drafting techniques, lettering, use of architectural and engineer scales, and sketching. Topics include orthographic, axonometric, and oblique drawing techniques using architectural plans, elevations, sections, and details; reprographic techniques; and other related topics. Upon completion, students should be able to prepare and print scaled drawings within minimum architectural standards. Co-requisite: ARC 114. Pre-requisites: [(ENG 080 and RED 080), ENG 085, or (EFL 074, EFL 084, and EFL 094)] and (DMA 010, DMA 020, DMA 030, and DMA 040).

ARC	112	Construction Materials and Methods	3	2	0	4

This course introduces construction materials and methodologies. Topics include construction terminology, traditional and alternative 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. Pre-requisites: [(ENG 080 and RED 080), ENG 085, or (EFL 074, EFL 084, and EFL 094)] and (DMA 010, DMA 020, DMA 030, and DMA 040).

ARC	113	Residential Architectural Technology	1	6	0	3

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. Pre-requisites: C or better in **ARC 111** and ARC 114. Co-requisite: **ARC 112**.

ARC	114	Architectural CAD	1	3	0	2

This course introduces basic architectural CAD techniques. Topics include basic commands and system hardware and software. Upon completion, students should be able to prepare and plot architectural drawings to scale within accepted architectural standards. Co-requisite: ARC 114A.

ARC	114A	Architectural CAD Lab	0	3	0	1

This course provides a laboratory setting to enhance architectural CAD skills. Emphasis is placed on further development of commands and system operation. Upon completion, students should be able to prepare and plot scaled architectural drawings. Co-requisite: **ARC 114**.

ARC 160	Residential Design	1	6	0	3
This course introduces the methodology of basic residential design. Topics include residential site design, space organization and layout, residential styles, and the development of schematic design. Upon completion, students should be able to design a residence. Pre-requisites: C or better in ARC 111 and ARC 114 . Co-requisite: ARC 112 .					
ARC 210	Intro to Sustain Design	1	3	0	2
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. Pre-requisites: C or better in ARC 111 , ARC 114 , and ARC 114A .					
ARC 211	Light Construction Technology	1	6	0	3
This course covers working drawings for light construction. Topics include plans, elevations, sections, and details; schedules; and other related topics. Upon completion, students should be able to prepare a set of working drawings which are within accepted architectural standards. Pre-requisites: C or better in ARC 111 , ARC 112 , ARC 114 , and ARC 113 . Co-requisites: ARC 221 .					
ARC 213	Design Project	2	6	0	4
This course provides the opportunity to design and prepare a set of contract documents within an architectural setting. Topics include schematic design, design development, construction documents, and other related topics. Upon completion, students should be able to prepare a set of commercial contract documents. Pre-requisites: C or better in ARC 111 , ARC 112 , ARC 114 , ARC 211 , and ARC 221 .					
ARC 220	Advanced Architect CAD	1	3	0	2
This course provides file management, productivity, and CAD customization skills. Emphasis is placed on developing advanced proficiency techniques. Upon completion, students should be able to create prototype drawings and symbol libraries, compose sheets with multiple details, and use advanced drawing and editing commands. Pre-requisite: C or better in ARC 114 .					
ARC 221	Architectural 3-D CAD	1	4	0	3
This course introduces architectural three-dimensional CAD applications. Topics include three-dimensional drawing, coordinate systems, viewing, rendering, modeling, and output options. Upon completion, students should be able to prepare architectural three-dimensional drawings and renderings. Pre-requisite: C or better in ARC 114 .					
ARC 225	Architectural BIM I	1	3	0	2
This course is an introduction to the fundamentals of Building Information Modeling (BIM) as a construction documentation system. Topics include basic parametric modeling, creating new types and families of components, and using 3D models to create design drawings. Upon completion, students should be able to use BIM software to create, edit, and print rudimentary architectural 3D computer models. Pre-requisite: ARC 114 .					
ARC 226	Architectural BIM II	1	3	0	2
This course covers advanced concepts of Building Information Modeling (BIM) including complex drawing generation and inter-disciplinary collaboration. Topics include advanced parametric modeling and model analysis, inter-disciplinary coordination, design web format models, material take-off, schedules, and rendering. Upon completion, students should be able to apply BIM software to create full 3D project models and convert them to scaled working or presentation drawings. Pre-requisite: ARC 225 .					
ARC 230	Environmental Systems	3	3	0	4
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 develop schematic drawings for plumbing, mechanical, and electrical systems and perform related calculations. Pre-requisites: C or better in ARC 111 , ARC 114 , and (MAT 121 , MAT 151 , MAT 161 , MAT 171 , or MAT 175).					
ARC 235	Architectural Portfolio	2	3	0	3
This course covers the methodology for the creation of an architectural portfolio. Topics include preparation of marketing materials and a presentation strategy using conventional and/or digital design media. Upon completion students should be able to produce an architectural portfolio of selected projects. Pre-requisites: C or better in ARC 113 , ARC 114 , ARC 220 , and ARC 221 .					

ARC	240	Site Planning	2	2	0	3
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. Pre-requisites: C or better in ARC 114 and (ARC 111 or LAR 111). Co-requisite: ARC 213.						
ARC	250	Survey of Architecture	3	0	0	3
This course introduces the historical trends in architectural form. Topics include historical and current trends in architecture. Upon completion, students should be able to demonstrate an understanding of significant historical and current architectural styles. Pre-requisite: C or better in (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).						
ARC	264	Digital Architecture	1	3	0	2
This course covers multiple digital architectural techniques. Topics include spreadsheets and word processing procedures, on-line resources, modems, e-mail, image capture, multimedia, and other related topics. Upon completion, students should be able to transmit/receive electronic data, create multimedia presentations, and produce a desktop publishing document. Pre-requisites: ARC 114, ARC 114A, and ARC 220. Co-requisite: ARC 112.						

Art (ART)

ART	111	Art Appreciation	3	0	0	3
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. <i>This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.</i> Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).						
ART	114	Art History Survey I	3	0	0	3
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. <i>This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.</i> Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).						
ART	115	Art History Survey II	3	0	0	3
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. <i>This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.</i> Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).						
ART	121	Two-Dimensional Design	0	6	0	3
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i>						
ART	122	Three-Dimensional Design	0	6	0	3
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: C or better in ART 121.						
ART	131	Drawing I	0	6	0	3
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i>						

ART	132	Drawing II	0	6	0	3
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: C or better in ART 131 .						

Astronomy (AST)

AST	111	Descriptive Astronomy	3	0	0	3
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. <i>This course has been approved for transfer under the CAA as a general education course in Natural Science.</i> Co-requisite: AST 111A .						

AST	111A	Descriptive Astronomy Lab	0	2	0	1
This 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. <i>This course has been approved for transfer under the CAA as a general education course in Natural Science.</i> Co-requisite: AST 111 .						

AST	151	General Astronomy I	3	0	0	3
This course introduces the science of modern astronomy with a concentration on the solar system. Emphasis is placed on the history and physics of astronomy and an introduction to the solar system, including the planets, comets, and meteors. Upon completion, students should be able to demonstrate a general understanding of the solar system. <i>This course has been approved for transfer under the CAA as a general education course in Natural Science.</i> Co-requisite: AST 151A .						

AST	151A	General Astronomy I Lab	0	2	0	1
This course is a laboratory to accompany AST 151. Emphasis is placed on laboratory experiences which enhance the materials presented in AST 151 and which provide practical experience. Upon completion, students should be able to demonstrate a general understanding of the solar system. <i>This course has been approved for transfer under the CAA as a general education course in Natural Science.</i> Co- requisite: AST 151 .						

AST	152	General Astronomy II	3	0	0	3
This course is a continuation of AST 151 with primary emphasis beyond the solar system. Topics include the sun, stars, galaxies, and the larger universe, including cosmology. Upon completion, students should be able to demonstrate a working knowledge of astronomy. <i>This course has been approved for transfer under the CAA as a general education course in Natural Science.</i> Pre-requisite: AST 151 . Co-requisite: AST 152A .						

AST	152A	General Astronomy II Lab	0	2	0	1
This course is a laboratory to accompany AST 152. Emphasis is placed on laboratory experiences which enhance the materials presented in AST 152 and which provide practical experience. Upon completion, students should be able to demonstrate a working knowledge of astronomy. <i>This course has been approved for transfer under the CAA as a general education course in Natural Science.</i> Pre-requisite: AST 151 . Co-requisite: AST 152 .						

AST	251	Observational Astronomy	1	3	0	2
This course covers the operation of the telescope and related observatory equipment. Emphasis is placed on the use of the telescope and related observatory equipment, including techniques of data collection, measurements, and data analysis. Upon completion, students should be able to set up a telescope and use the coordinate system to locate objects, collect data, and make measurements with the telescope. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: AST 111 or AST 152 .						

Automation and Robotics (ATR)

ATR	112	Intro to Automation	2	3	0	3

This course introduces the basic principles of automated systems 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	211	Robot Programming	2	3	0	3

This course provides the operational characteristics of robots and programming in their respective languages. Topics include robot programming, teach pendants, PLC integration, operator interfaces, the interaction of external sensors, machine vision, network systems, and other related devices. Upon completion, students should be able to program and demonstrate the operation of various robots. Pre-requisite: ATR 112.

ATR	212	Industrial Robots	2	3	0	3

This course covers the operation of 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. Pre-requisite: ATR 112.

ATR	280	Robotic Fundamentals	3	2	0	4

This course covers application, programming, and maintenance fundamentals for robotic devices. Emphasis is placed on terminology, problem solving, robotic systems controls, and hands-on projects. Upon completion, students should be able to apply basic concepts in application, programming, and robotic control systems.

Automotive Body Repair (AUB)

AUB	111	Painting and Refinishing I	2	6	0	4

This course introduces the proper procedures for using automotive refinishing equipment and materials in surface preparation and application. Topics include federal, state, and local regulations, personal safety, refinishing equipment and materials, surface preparation, masking, application techniques, and other related topics. Upon completion, students should be able to identify and use proper equipment and materials in refinishing following accepted industry standards. Pre-requisite: Enrollment in the Collision Repair & Refinishing Program and [RED 080, ENG 085, or (EFL 074, EFL 084, and EFL 094)]. Co-requisite: AUB 121.

AUB	112	Painting and Refinishing II	2	6	0	4

This course covers advanced painting techniques and technologies with an emphasis on identifying problems encountered by the refinishing technician. Topics include materials application, color matching, correction of refinishing problems, and other related topics. Upon completion, students should be able to perform spot, panel, and overall refinishing repairs and identify and correct refinish problems. Pre-requisite: **AUB 111**.

AUB	114	Special Finishes	1	2	0	2

This course introduces multistage finishes, custom painting, and protective coatings. Topics include base coats, advanced intermediate coats, clear coats, and other related topics. Upon completion, students should be able to identify and apply specialized finishes based on accepted industry standards. Pre-requisite: **AUB 111**.

AUB	121	Non-Structural Damage I	1	4	0	3

This course introduces safety, tools, and the basic fundamentals of body repair. Topics include shop safety, damage analysis, tools and equipment, repair techniques, materials selection, materials usage, and other related topics. Upon completion, students should be able to identify and repair minor direct and indirect damage including removal/repairing/replacing of body panels to accepted standards. Pre-requisite: Enrollment in the Collision Repair & Refinishing Program and [RED 080, ENG 085, or (EFL 074, EFL 084, and EFL 094)].

AUB	122	Non-Structural Damage II	2	6	0	4

This course covers safety, tools, and advanced body repair. Topics include shop safety, damage analysis, tools and equipment, advanced repair techniques, materials selection, materials usage, movable glass, and other related topics. Upon completion, students should be able to identify and repair or replace direct and indirect damage to accepted standards including movable glass and hardware. Pre-requisite: AUB 121.

AUB	131	Structural Damage I	2	4	0	4
This course introduces safety, equipment, structural damage analysis, and damage repairs. Topics include shop safety, design and construction, structural analysis and measurement, equipment, structural glass, repair techniques, and other related topics. Upon completion, students should be able to analyze and perform repairs to a vehicle which has received light/moderate structural damage. Pre-requisite: Enrollment in the Collision Repair & Refinishing Program and [RED 080, ENG 085, or (EFL 074, EFL 084, and EFL 094)].						
AUB	132	Structural Damage II	2	6	0	4
This course provides an in-depth study of structural damage analysis and repairs to vehicles that have received moderate to heavy structural damage. Topics include shop safety, structural analysis and measurement, equipment, structural glass, advanced repair techniques, structural component replacement and alignment, and other related topics. Upon completion, students should be able to analyze and perform repairs according to industry standards. Pre-requisite: AUB 131 .						
AUB	134	Autobody MIG Welding	1	4	0	3
This course covers the terms and procedures for welding the various metals found in today's autobody repair industry with an emphasis on personal/environmental safety. Topics include safety and precautionary measures, setup/operation of MIG equipment, metal identification methods, types of welds/joints, techniques, inspection methods, and other related topics. Upon completion, students should be able to demonstrate a basic knowledge of welding operations and safety procedures according to industry standards.						
AUB	136	Plastics and Adhesives	1	4	0	3
This course covers safety, plastic and adhesive identification, and the various repair methods of automotive plastic components. Topics include safety, identification, preparation, material selection, and the various repair procedures including refinishing. Upon completion, students should be able to identify, remove, repair, and/or replace automotive plastic components in accordance with industry standards. Pre-requisite: AUB 121.						
AUB	162	Autobody Estimating	1	2	0	2
This course provides a comprehensive study of autobody estimating. Topics include collision damage analysis, industry regulations, flat-rate and estimated time, and collision estimating manuals. Upon completion, students should be able to prepare and interpret a damage report.						

Automotive (AUT)

AUT	110	Introduction to Auto Technology	2	2	0	3
This course covers workplace safety, hazardous material and environmental regulations, use of hand tools, service information resources, basic concepts, systems, and terms of automotive technology. Topics include familiarization with vehicle systems along with identification and proper use of various automotive hand and power tools. Upon completion, students should be able to describe safety and environmental procedures, terms associated with automobiles, identify and use basic tools and shop equipment. Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).						
AUT	113	Automotive Servicing I	0	6	0	2
This course is a lab used as an alternative to co-op placement. Emphasis is placed on shop operations, troubleshooting, testing, adjusting, repairing, and replacing components using appropriate test equipment and service information. Upon completion, students should be able to perform a variety of automotive repairs using proper service procedures and to operate appropriate equipment. Pre-requisite: AUT 110.						
AUT	116	Engine Repair	2	3	0	3
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. Pre-requisite: AUT 110.						
AUT	116A	Engine Repair Lab	0	3	0	1
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. Co-requisite: AUT 116 .						

AUT 123	Powertrain Diagnosis & Service	1	3	0	2

This course covers the diagnosis, repair and service of the vehicle powertrain and related systems. Topics include fundamental operating principles of engines and transmissions and use of proper service procedures for diagnosis, service and removal and replacement of major components. Upon completion, students should be able to perform basic service and diagnosis of the powertrain and related systems, and to perform in vehicle repairs and remove and replace components. Pre-requisite: AUT 110.

AUT 141	Suspension & Steering Systems	2	3	0	3

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. Pre-requisite: AUT 110.

AUT 141A	Suspension & Steering Lab	0	3	0	1

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 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. Co-requisite: AUT 141.

AUT 151	Brake Systems	2	3	0	3

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. Pre-requisite: AUT 110.

AUT 151A	Brakes Systems Lab	0	3	0	1

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 emerging brake systems technologies. Upon completion, students should be able to diagnose, service, and repair various automotive braking systems. Co-requisite: AUT 151.

AUT 161	Basic Automotive Electricity	4	3	0	5

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. Pre-requisite: AUT 110.

AUT 163	Advanced Automotive Electricity	2	3	0	3

This course covers electronic theory, wiring diagrams, test equipment, and diagnosis, repair, and replacement of electronics, lighting, gauges, horn, wiper, accessories, and body modules. Topics include networking and module communication, circuit construction, wiring diagrams, circuit testing, and troubleshooting. Upon completion, students should be able to properly use wiring diagrams, diagnose, test, and repair wiring, lighting, gauges, accessories, modules, and electronic concerns. Pre-requisite: AUT 161.

AUT 163A	Advanced Automotive Electricity Lab	0	3	0	1

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 networking and module communication, circuit construction, wiring diagrams, circuit testing, troubleshooting and emerging electrical/electronic systems technologies. Upon completion, students should be able to properly use wiring diagrams, diagnose, test, and repair wiring, lighting, gauges, accessories, modules, and electronic concerns. Co-requisite: AUT 163.

AUT 171	Automotive Climate Control	2	4	0	4

This course covers the theory of refrigeration and heating, electrical/electronic/pneumatic controls, and diagnosis/repair of climate control systems. Topics include diagnosis and repair of climate control components and systems, recovery/recycling of refrigerants, and safety and environmental regulations. Upon completion, students should be able to describe the operation, diagnose, and safely service climate control systems using appropriate tools, equipment, and service information. Pre-requisite: AUT 110.

AUT	181	Engine Performance I	2	3	0	3
This course covers the introduction, theory of operation, and basic diagnostic procedures required to restore engine performance to 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 and diagnose/repair basic ignition, fuel and emission related driveability problems using appropriate test equipment/service information. Pre-requisite: AUT 161.						
AUT	181A	Engine Performance I Lab	0	3	0	1
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 overviews of engine operation, ignition components and systems, fuel delivery, injection components and systems and emission control devices and emerging engine performance technologies. Upon completion, students should be able to describe operation and diagnose/repair basic ignition, fuel and emission related driveability problems using appropriate test equipment/service information. Co-requisite: AUT 181 .						
AUT	183	Engine Performance II	2	6	0	4
This course covers study of the electronic engine control systems, the diagnostic process used to locate engine performance concerns, and procedures used to restore normal operation. Topics will include currently used fuels and fuel systems, exhaust gas analysis, emission control components and systems, OBD II (on-board diagnostics) and inter-related electrical/electronic systems. Upon completion, students should be able to diagnose and repair complex engine performance concerns using appropriate test equipment and service information. Pre-requisite: AUT 181 .						
AUT	186	PC Skills for Auto Techs	2	2	0	3
This course introduces students to personal computer literacy and Internet literacy with an emphasis on the automotive service industry. Topics include service information systems, management systems, computer-based systems, and PC based diagnostic equipment. Upon completion, students should be able to access information pertaining to automotive technology and perform word processing. Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).						
AUT	213	Automotive Servicing 2	1	3	0	2
This course is a lab used as an alternative to co-op placement. Emphasis is placed on shop operations, troubleshooting, testing, adjusting, repairing, and replacing components using appropriate test equipment and service information. Upon completion, students should be able to perform a variety of automotive repairs using proper service procedures and to operate appropriate equipment. Pre-requisite: AUT 113.						
AUT	221	Auto Transmissions/Transaxles	2	3	0	3
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. Pre-requisite: AUT 161.						
AUT	221A	Auto Transmissions/Transaxles Lab	0	3	0	1
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. Co-requisite: AUT 221 .						
AUT	231	Man Trans/Axles/Drivetrains	2	3	0	3
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. Pre-requisite: AUT 110.						
AUT	231A	Man Trans/Axles/Drivetrains Lab	0	3	0	1
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. Co-requisite: AUT 231 .						
AUT	285	Intro to Alternative Fuels	2	2	0	3
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.						

Aviation (AVI)

AVI	110	Aviation Maintenance-General	10	15	0	15

This course introduces general subjects related to all aspects of aircraft maintenance. Topics include mechanic privileges/limitations; math and physics; basic electricity; aircraft drawings; maintenance forms; fluid lines/fittings; weight and balance; corrosion control; and ground operations. Upon completion, students should be prepared to pass the FAA knowledge, oral, and practical exams for the general portion of the mechanic's certificate with either the airframe or powerplant ratings. Pre-requisite: [RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094)] and (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050).

AVI	120	Airframe Maintenance I	6	18	0	12

This course covers airframe structures, systems, and components with an emphasis on the different types of aircraft construction and repair methods. Topics include aircraft non-metallic (composite), sheet metal, and wood structures; welding; covering and finishes (dope and fabric); assembly and rigging; and communication and navigation systems. Students should gain the knowledge and skills in these areas to prepare them for the airframe rating for the FAA mechanic's certificate. Pre-requisite: **AVI 110**.

AVI	130	Airframe Maintenance II	6	9	0	9

This course deals entirely with airframe systems and components. Topics include aircraft electrical, hydraulic, pneumatic, landing gear, position, warning, and fuel systems. Upon completion of the course, the student should be prepared to pass the applicable portions of the knowledge, oral, and practical tests of the airframe rating for the FAA mechanic's certificate. Pre-requisite: **AVI 110**.

AVI	230	Airframe Maintenance III	4	9	0	7

In this final course of the airframe series, the emphasis is on systems and components, culminating with the airframe inspection portion of the course. In addition to the inspection aspects, instrument, cabin environmental control, fire protection, and ice and rain control systems are covered. The student should be prepared to take the applicable portions of the written, oral, and practical examination for the airframe rating on the FAA mechanic's certificate. Pre-requisite: **AVI 110**.

AVI	240	Powerplant Maintenance I	3	9	0	6

This first course in the powerplant series covers theoretical and practical aspects of the two major types of aircraft propulsion systems, piston and jet engines. Auxiliary power units are also covered, including their relationship to the systems they operate. Upon completion, the student should be knowledgeable of aircraft engines to include maintenance and operation at the level required by the FAA to qualify for a powerplant rating on a mechanic's certificate. Pre-requisite: **AVI 110**.

AVI	250	Powerplant Maintenance II	10	15	0	15

This course emphasizes engine systems and components. Topics include engine instruments and fire protection, electrical, lubrication, fuel, ignition, starting, and fuel metering systems. Students completing this course should be capable of passing appropriate portions of the FAA knowledge, oral, and practical tests for the powerplant rating. Pre-requisite: **AVI 110**.

AVI	260	Powerplant Maintenance III	5	12	0	9

This final course of the powerplant series covers engine systems and components; propellers and unducted fans; and induction, airflow, cooling, exhaust, and reverser systems. The course culminates with engine inspections. The student should be prepared to pass the applicable portions of the knowledge, oral, and practical exams for the powerplant rating at the completion of this course. Pre-requisite: **AVI 110**.

Biology (BIO)

BIO	094	Concepts of Human Biology	3	2	0	4
This course focuses on fundamental concepts of human biology. Topics include terminology, biochemistry, cell biology, tissues, body systems, and other related topics. Upon completion, students should be able to demonstrate preparedness for college-level anatomy and physiology courses. Co-requisite: RED 090 or ENG 095 .						
BIO	106	Introduction to Anatomy/ Physiology/Microbiology	2	2	0	3
This course covers the fundamental and principle concepts of human anatomy and physiology and microbiology. Topics include an introduction to the structure and function of cells, tissues, and human organ systems, and an overview of microbiology, epidemiology, and control of microorganisms. Upon completion, students should be able to identify structures and functions of the human body and describe microorganisms and their significance in health and disease. This is a certificate and diploma level course.						
BIO	110	Principles of Biology	3	3	0	4
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. <i>Under the CAA, 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.</i> Student will not receive credit for both BIO 110 and BIO 111. Pre-requisite: C or better in RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).						
BIO	111	General Biology I	3	3	0	4
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. A recent high school or college chemistry class or CHM 092 is advised. <i>This course has been approved for transfer under the CAA as a general education course in Natural Science.</i> Student will not receive credit for both BIO 110 and BIO 111. Pre-requisite: C or better in RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).						
BIO	112	General Biology II	3	3	0	4
This course is a continuation of BIO 111. Emphasis is placed on organisms, biodiversity, plant and animal systems, ecology, and other selected topics. Upon completion, students should be able to demonstrate comprehension of life at the organismal and ecological levels. <i>This course has been approved for transfer under the CAA as a general education course in Natural Science.</i> The laboratory component of this course includes cutting up preserved animal specimens. Pre-requisite: BIO 111 .						
BIO	140	Environmental Biology	3	0	0	3
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. <i>This course has been approved for transfer under the CAA as a general education course in Natural Science.</i>						
BIO	140A	Environmental Biology Lab	0	3	0	1
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. <i>This course has been approved for transfer under the CAA as a general education course in Natural Science.</i> Co-requisite: BIO 140 .						
BIO	163	Basic Anatomy and Physiology	4	2	0	5
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: C or better in RED 090, ENG 095, (EFL 074, EFL 084, and EFL 094), or BIO 094.						

BIO	165	Anatomy and Physiology I	3	3	0	4

This course is the first of a two-course sequence which provides a comprehensive study of the anatomy and physiology of the human body. Topics include the structure, function, and interrelationship of organ systems with emphasis on the processes which maintain homeostasis. Upon completion, students should be able to demonstrate an in-depth understanding of principles of anatomy and physiology and their interrelationships. BIO 165 and BIO 166 should be completed in the same college to receive transfer credit. *This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.* Pre-requisites: C or better in RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).

BIO	166	Anatomy and Physiology II	3	3	0	4

This course is the second in a two-course sequence which provides a comprehensive study of the anatomy and physiology of the human body. Topics include the structure, function, and interrelationship of organ systems with emphasis on the processes which maintain homeostasis. Upon completion, students should be able to demonstrate an in-depth understanding of principles of anatomy and physiology and the interrelationships of all body systems. BIO 165 and BIO 166 should be completed in the same college to receive transfer credit. *This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.* Pre-requisite: C or better in **BIO 165**.

BIO	175	General Microbiology	2	2	0	3

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 CAA as a premajor and/or elective course requirement.* Pre-requisite: **BIO 110, BIO 111, BIO 163, BIO 165 or BIO 168**.

BIO	250	Genetics	3	3	0	4

This course covers principles of prokaryotic and eukaryotic cell genetics. Emphasis is placed on the molecular basis of heredity, chromosome structure, patterns of Mendelian and non-Mendelian inheritance, evolution, and biotechnological applications. Upon completion, students should be able to recognize and describe genetic phenomena and demonstrate knowledge of important genetic principles. *This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.* Pre-requisite: **BIO 112**.

BIO	265	Cell Biology	3	3	0	4

This course provides an in-depth study of cellular organization and communication, biochemical cell processes, and cellular growth, replication and death. Topics include organelle structure and function, nucleic acid and protein synthesis, gene organization and regulation, cell signaling mechanisms, bioenergetics, cell motility and apoptosis. Upon completion, students should be able to demonstrate knowledge of cell structure and function and lab skills including microscopy, cell culture, and molecular biology techniques. *This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.* Pre-requisite: **BIO 111, BIO 275, or BIO 280**.

BIO	275	Microbiology	3	3	0	4

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 CAA as a premajor and/or elective course requirement.* Pre-requisite: **BIO 110, BIO 111, BIO 163, BIO 165, or BIO 168**.

BIO	280	Biotechnology	2	3	0	3

This course provides experience in selected laboratory procedures. Topics include proper laboratory techniques in biology and chemistry. Upon completion, students should be able to identify laboratory techniques and instrumentation in basic biotechnology. *This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.* Pre-requisite: **BIO 111, CHM 131, or CHM 151**.

Blueprint Reading (BPR)

BPR	111	Print Reading	1	2	0	2

This course introduces the basic principles of print reading. Topics include line types, orthographic projections, dimensioning methods, and notes. Upon completion, students should be able to interpret basic prints and visualize the features of a part or system. Pre-requisites: (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050) and [RED 080, ENG 085, or (EFL 074, EFL 084, and EFL 094)].

BPR	121	Blueprint Reading-Mechanical	1	2	0	2

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. Pre-requisite: **BPR 111** or **MAC 131**.

BPR	130	Print Reading-Construction	3	0	0	3

This course covers the interpretation of prints and specifications that are associated with design and construction projects. Topics include interpretation of documents for foundations, floor plans, elevations, and related topics. Upon completion, students should be able to read and interpret construction prints and documents.

BPR	135	Schematics & Diagrams	2	0	0	2

This course introduces schematics and diagrams used in a variety of occupations. Topics include interpretation of wiring diagrams, assembly drawings, exploded views, sectional drawings, and service manuals, specifications, and charts. Upon completion, students should be able to research and locate components and assemblies denoting factory specifications and requirements from service and repair manuals.

BPR	221	Interpretation of GD&T	2	0	0	2

This course introduces dimensioning and tolerancing standards as established by ANSI and ISO 9000. Topics include dimensioning, symbols and terms, application of tolerances and limits, tolerances of position and form, and the advantages of geometric concepts. Upon completion, students should be able to interpret blueprints that utilize the GD&T system. Pre-requisite: **BPR 121** or **MAC 132**.

Business (BUS)

BUS	110	Introduction to Business	3	0	0	3

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 for transfer under the CAA as a premajor and/or elective course requirement.* Pre-requisites: (RED 090 and ENG 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).

BUS	115	Business Law I	3	0	0	3

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 for transfer under the CAA as a premajor and/or elective course requirement.* Pre-requisites: [(RED 090 and ENG 090), ENG 095, or (EFL 074, EFL 084, and EFL 094)] and (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050).

BUS	121	Business Math	2	2	0	3

This course covers fundamental mathematical operations and their application to business problems. Topics include payroll, pricing, interest and discount, commission, taxes, and other pertinent uses of mathematics in the field of business. Upon completion, students should be able to apply mathematical concepts to business. Pre-requisite: (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050).

BUS	125	Personal Finance	3	0	0	3

This course provides a study of individual and family financial decisions. Emphasis is placed on building useful skills in buying, managing finances, increasing resources, and coping with current economic conditions. Upon completion, students should be able to develop a personal financial plan.

BUS	137	Principles of Management	3	0	0	3

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 for transfer under the CAA as a premajor and/or elective course requirement.* Prerequisite: (RED 090 and ENG 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).

BUS	151	People Skills	3	0	0	3

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	0	3

This course introduces the functions of personnel/human resource management within an organization. Topics include equal opportunity and the legal environment, recruitment and selection, performance appraisal, employee development, compensation planning, and employee relations. Upon completion, students should be able to anticipate and resolve human resource concerns.

BUS 217	Employment Laws and Regulations	3	0	0	3

This course introduces the principle laws and regulations affecting public and private organizations and their employees or prospective employees. Topics include fair employment practices, EEO, affirmative action, and employee rights and protections. Upon completion, students should be able to evaluate organizational policy for compliance and assure that decisions are not contrary to law.

BUS 225	Business Finance	2	2	0	3

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. Pre-requisite: **ACC 120**.

BUS 228	Business Statistics	2	2	0	3

This course introduces the use of statistical methods and tools in evaluating research data for business applications. Emphasis is placed on basic probability, measures of spread and dispersion, central tendency, sampling, regression analysis, and inductive inference. Upon completion, students should be able to apply statistical problem solving to business. *This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.* Pre-requisites: (CIS 110 or OST 137) and (MAT 115, MAT 140, or MAT 161).

BUS 234	Training and Development	3	0	0	3

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 240	Business Ethics	3	0	0	3

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 256	Recruit Selection & Personnel Planning	3	0	0	3

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. *This course is a unique concentration requirement of the Human Resources Management concentration in the Business Administration program and is restricted to students in that program.*

BUS 258	Compensation and Benefits	3	0	0	3

This course is designed to study the basic concepts of pay and its role in rewarding performance. Topics include wage and salary surveys, job analysis, job evaluation techniques, benefits, and pay-for-performance programs. Upon completion, students should be able to develop and manage a basic compensation system to attract, motivate and retain employees. *This course is a unique concentration requirement of the Human Resources Management concentration in the Business Administration program and is restricted to students in that program.*

BUS 259	Human Resource Management Applications	3	0	0	3

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 and is restricted to students in that program.* Pre-requisites: **BUS 217**, **BUS 234**, **BUS 256**, and **BUS 258**.

BUS 260	Business Communication	3	0	0	3

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 work place. Pre-requisite: **ENG 111**.

BUS	280	REAL Small Business	4	0	0	4

This course introduces hands-on techniques and procedure 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.

Carpentry (CAR)

CAR	110	Introduction to Carpentry	2	0	0	2

This course introduces the student to the carpentry trade. Topics include duties of a carpenter, hand and power tools, building materials, construction methods, and safety. Upon completion, students should be able to identify hand and power tools, common building materials, and basic construction methods.

CAR	111	Carpentry I	3	15	0	8

This course introduces the theory and construction methods associated with the building industry, including framing, materials, tools, and equipment. Topics include safety, hand/power tool use, site preparation, measurement and layout, footings and foundations, construction framing, and other related topics. Upon completion, students should be able to safely lay out and perform basic framing skills with supervision. This is a diploma-level course.

CAR	112	Carpentry II	3	15	0	8

This course covers the advanced theory and construction methods associated with the building industry including framing and exterior finishes. Topics include safety, hand/power tool use, measurement and layout, construction framing, exterior trim and finish, and other related topics. Upon completion, students should be able to safely frame and apply exterior finishes to a residential building with supervision. Pre-requisite: **CAR 111**.

CAR	113	Carpentry III	3	9	0	6

This course covers interior trim and finishes. Topics include safety, hand/power tool use, measurement and layout, specialty framing, interior trim and finishes, cabinetry, and other related topics. Upon completion, students should be able to safely install various interior trim and finishes in a residential building with supervision. Pre-requisite: **CAR 111**.

CAR	114	Residential Building Codes	3	0	0	3

This course covers building codes and the requirements of state and local construction regulations. Emphasis is placed on the minimum requirements of the North Carolina building codes related to residential structures. Upon completion, students should be able to determine if a structure is in compliance with North Carolina building codes.

CAR	115	Residential Planning/Estimating	3	0	0	3

This course covers project planning, management, and estimating for residential or light commercial buildings. Topics include planning and scheduling, interpretation of working drawings and specifications, estimating practices, and other related topics. Upon completion, students should be able to perform quantity takeoffs and cost estimates. Pre-requisite: **BPR 130**.

Cyber Crime (CCT)

CCT	110	Introduction to Cyber Crime	3	0	0	3

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. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).

CCT	112	Ethics & High Technology	3	0	0	3

This course covers ethical considerations and accepted standard practices applicable to technological investigations and computer privacy issues relative to the cyber crime investigator. Topics include illegal and unethical investigative activities, end-justifying-the-means issues, and privacy issues of massive personal database information gathered by governmental sources. Upon completion, students should be able to examine their own value system and apply ethical considerations in identifiable cyber crime investigations. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).

CCT 121	Computer Crime Investigation	3	2	0	4
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. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).					
CCT 231	Technology Crimes & Law	3	0	0	3
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. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).					
CCT 240	Data Recovery Techniques	2	3	0	3
This course introduces the unique skills and methodologies necessary to assist in the investigation and prosecution of cyber crimes. Topics include hardware and software issues, recovering erased files, overcoming encryption, advanced imaging, transient data, Internet issues and testimony considerations. Upon completion, students should be able to recover digital evidence, extract information for criminal investigation and legally seize criminal evidence.					
CCT 250	Network Vulnerabilities I	2	2	0	3
This course introduces students to penetration testing, network vulnerabilities, and hacking. Topics include an overview of traditional network security, system hardening, and known weaknesses. Upon completion, students should be able to evaluate weaknesses of traditional and wireless networks for the purpose of incident response, reconstruction, and forensic investigation. Pre-requisite: NET 110 and [(ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094)].					
CCT 251	Network Vulnerabilities II	2	2	0	3
This course advances students' knowledge of penetration testing, network vulnerabilities, and hacking. Topics include analyzing advanced techniques for circumventing network security hardware and software. Upon completion, students should be able to assemble test kits for multiple operating systems, scan and footprint networks, and perform advanced forensic investigation. Pre-requisite: CCT 250 .					
CCT 271	Mac Digital Forensics	1	4	0	3
This course provides students with the unique knowledge and skills necessary to analyze Macintosh operating system artifacts and file system mechanics. Topics include Macintosh architecture, HFS (+) based file systems, Macintosh decryption, address book and chat archives, Internet artifacts related to Safari and Firefox. Upon completion, students will be able to use the course processes and methodologies to forensically analyze a Mac computer.					
CCT 272	Forensic Password Recovery	1	4	0	3
This course introduces the unique skills and methodologies necessary to assist in the investigation and prosecution of cyber crimes involving decryption. Topics include decryption of PGP key rings, private keys, EFS hard drives, and encrypted containers. Upon completion, students will be able to use the course processes and methodologies to obtain forensic evidence from encrypted files, folders, and systems.					
CCT 285	Trends in Cyber Crime	2	2	0	3
This course covers and explores advances and developments in cyber crime technologies. Emphasis is placed on computer forensics tools, information protection and security, threat response, and professional development. Upon completion, students should be able to articulate understanding of the current state of the industry as well as emerging technologies for cyber crime technology. Pre-requisite: CCT 110 .					
CCT 289	Capstone Project	1	6	0	3
This course provides experience in cyber crime investigations or technology security audits in either the public or private domain. Emphasis is placed on student involvement with businesses or agencies dealing with technology security issues or computer crime activities. Upon completion, students should be able to successfully analyze, retrieve erased evidence and testify in mock proceedings against these criminal entrepreneurs. Pre-requisite: CCT 231 or CCT 220 .					

Civil Engineering and Geomatic (CEG)

CEG	111	Introduction to GIS and GNSS	2	4	0	4
This course introduces the methods and techniques used in the Geographic Information Systems (GIS) and Global Navigation Satellite Systems (GNSS) professions. Emphasis is placed on data collection and mapping using GIS software. Upon completion, students should be able to use GNSS technologies to collect field data and create GIS maps.						
CEG	151	CAD for Engineering Technology	2	3	0	3
This course introduces computer-aided drafting (CAD) software. Topics include file and data management, drawing, editing, dimensioning commands, plotting, and related topics. Upon completion, students should be able to create and plot basic drawings and maps using CAD software.						
CEG	210	Construction Materials and Methods	2	3	0	3
This course covers the behavior and properties of Portland cement, asphaltic concretes, and other construction materials, including construction methods and equipment. Topics include cementing agents, aggregates, water and admixture materials with their proportions, production, placement, consolidation, curing, and their inspection. Upon completion, students should be able to proportion Portland concrete mixes to attain predetermined strengths, perform standard control tests on Portland cement concrete, identify inspection criteria for concretes, identify construction equipment and applications.						
CEG	211	Hydrology & Erosion Control	2	3	0	3
This course introduces basic engineering principles and characteristics of hydrology, erosion and sediment control. Topics include stormwater runoff, gravity pipe flow, open channel flow, low impact development (LID), erosion control devices and practices. Upon completion, students should be able to analyze and design gravitational drainage structures, identify LID and erosion control elements, and prepare a stormwater drainage plan. Pre-requisite: Take 3 credits from (DMA 010, DMA 020, DMA 030, DMA 040, DMA 050, DMA 060, DMA 070, and DMA 080), MAT 120, MAT 121, MAT 161, or MAT 171.						
CEG	212	Introduction to Environmental Technology	2	3	0	3
This course introduces basic engineering principles of hydraulics, and water and wastewater technologies. Topics include fluid statics, fluid dynamics, flow measurement, the collection, treatment, and distribution of water and wastewater. Upon completion, students should be able to identify water and wastewater system elements, describe water and wastewater system processes and perform basic hydraulics and treatment computations. Pre-requisite: Take one: EGR 250, EGR 251, or MEC 210.						
CEG	230	Subdivision Planing & Design	1	6	0	3
This course covers the planning and design concepts related to subdivisions including analysis of development standards, engineering, and the creation of CAD drawings. Topics include applicable codes, lot creation, roadway system layout, stormwater drainage, low impact development (LID) concepts, and related topics. Upon completion, students should be able to prepare a set of subdivision plans. Pre-requisites: Take 3 credits from CEG 151, DFT 151, or EGR 120.						

Computer Engineering Technology (CET)

CET	111	Computer Upgrade/Repair I	2	3	0	3
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	0	3
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	130	Operating System Principles	2	3	0	3

This course introduces the concepts, usage, internals and applications of operating systems used in engineering technology. Topics include resource management, shells, schedulers, file systems, networking, software considerations and other related topics. Upon completion, students should be able to choose and evaluate an operating system for engineering applications.

CET	222	Computer Architecture	2	0	0	2

This course introduces the organization and design philosophy of computer systems with respect to resource management, throughput, and operating system interaction. Topics include instruction sets, registers, data types, memory management, virtual memory, cache, storage management, multi-processing, and pipelining. Upon completion, students should be able to evaluate system hardware and resources for installation and configuration purposes. Pre-requisite: CET 111 or ELN 133.

Chemistry (CHM)

CHM	092	Fundamentals of Chemistry	3	2	0	4

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	131	Introduction to Chemistry	3	0	0	3

This course introduces the fundamental concepts of inorganic chemistry. Topics include measurement, matter and energy, atomic and molecular structure, nuclear chemistry, stoichiometry, chemical formulas and reactions, chemical bonding, gas laws, solutions, and acids and bases. Upon completion, students should be able to demonstrate a basic understanding of chemistry as it applies to other fields. A recent high school or college Chemistry class or CHM 092 is advised. *This course has been approved for transfer under the CAA as a general education course in Natural Science.* Co-requisite: CHM 131A.

CHM	131A	Introduction to Chemistry Lab	0	3	0	1

This course is a laboratory to accompany CHM 131. Emphasis is placed on laboratory experiences that enhance materials presented in CHM 131. Upon completion, students should be able to utilize basic laboratory procedures and apply them to chemical principles presented in CHM 131. *This course has been approved for transfer under the CAA as a general education course in Natural Science.* Co-requisite: **CHM 131**.

CHM	132	Organic and Biochemistry	3	3	0	4

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 for transfer under the CAA as a general education course in Natural Science.* Pre-requisite: (**CHM 131** and **CHM 131A**) or **CHM 151**.

CHM	151	General Chemistry I	3	3	0	4

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. A recent high school or college Chemistry class or CHM 092 is advised. *This course has been approved for transfer under the CAA as a general education course in Natural Science.* Pre-requisite: (DMA 010, DMA 020, DMA 030, DMA 040, DMA 050, DMA 060, DMA 070, and DMA 080).

CHM	152	General Chemistry II	3	3	0	4

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 for transfer under the CAA as a general education course in Natural Science.* Pre-requisite: C or better in **CHM 151**.

CHM	251	Organic Chemistry I	3	3	0	4

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 for transfer under the CAA as a premajor and/or elective course requirement.* Pre-requisite: C or better in **CHM 152**.

CHM	252	Organic Chemistry II	3	3	0	4

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 for transfer under the CAA as a premajor and/or elective course requirement.* Pre-requisite: C or better in **CHM 251**.

Information Systems (CIS)

CIS	110	Introduction to Computers	2	2	0	3

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. *This course has been approved for transfer under the CAA as a general education course in Mathematics (Quantitative).* Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).

CIS	111	Basic PC Literacy	1	2	0	2

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. Pre-requisite: RED 080, ENG 085, or (EFL 074, EFL 084, and EFL 094).

CIS	115	Intro to Programming & Logic	2	3	0	3

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 CAA as a general education course in Mathematics (Quantitative).* Pre-requisites: [(DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050), MAT 120, MAT 121, MAT 161, MAT 171, or MAT 175] and [RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094)].

CIS	155	Database Theory/Analysis	2	2	0	3

This course introduces database design theories and analyses. Emphasis is placed on data dictionaries, normalization, data integrity, and data modeling. Upon completion, students should be able to design normalized database structures which exhibit data integrity. Pre-requisite: **DBA 110 or DBA 120**.

Civil Engineering (CIV)

CIV	111	Soils and Foundations	2	4	0	4

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. Pre-requisite: **Take one: EGR 250, EGR 251 or MEC 210**.

CIV	125	Civil/Surveying CAD	1	6	0	3

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. Pre-requisite: EGR 115 or ARC 114.

CIV	215	Highway Technology	2	3	0	3
This course introduces the essential elements of roadway components and design. Topics include subgrade and pavement construction, roadway drawings and details, traffic analysis, geometric design and other related topics. Upon completion, students should be able to interpret roadway details and specifications, and produce street and highway construction drawings. Pre-requisites: (CEG 115 or EGR 115) and (MAT 121, MAT 161, or MAT 171) .						
CIV	220	Basic Structural Concepts	1	3	0	2
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. Pre-requisite: Take one: EGR 250, EGR 251, or MEC 210.						
CIV	221	Steel and Timber Design	2	3	0	3
This course introduces the basic elements of steel and timber structures. Topics include strength of materials applications, the analysis and design of steel and timber beams, columns, and connections and concepts of structural detailing. Upon completion, students should be able to analyze, design, and draw simple plans using Computer Aided Drafting and Design software (CADD).Pre-requisite: EGR 250, EGR 251, or MEC 210.						
CIV	222	Reinforced Concrete	2	3	0	3
This course introduces the basic elements of reinforced concrete structures. Topics include analysis and design of reinforced concrete beams, slabs, columns, footings, and retaining walls. Upon completion, students should be able to analyze and design components of a structure using reinforced concrete and draw simple plans using Computer Aided Drafting and Design software (CADD). Pre-requisite: EGR 250, EGR 251, or MEC 210.						
CIV	230	Construction Estimating	2	3	0	3
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. Pre-requisite: Take one: ARC 111, CIS 110, CIS 111, or EGR 115.						
CIV	240	Project Management	2	3	0	3
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	0	2
This course includes an integrated team approach to civil engineering technology projects. Emphasis is placed on project proposal, site selection, analysis/design of structures, construction material selection, time and cost estimating, planning, and management of a project. Up on completion, students should be able to apply team concepts, prepare estimates, submit bid proposals, and manage projects. Pre-requisites: Successful completion of three semesters of the Civil Engineering Technology program.						

Criminal Justice (CJC)

CJC	100	Basic Law Enforcement Training	9	30	0	19
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. This is a certificate-level course.						
CJC	111	Introduction to Criminal Justice	3	0	0	3
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).						

CJC	112	Criminology	3	0	0	3
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. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).						
CJC	113	Juvenile Justice	3	0	0	3
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. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).						
CJC	114	Investigative Photography	1	2	0	2
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 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. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).						
CJC	120	Interviews/Interrogations	1	2	0	2
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. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).						
CJC	121	Law Enforcement Operations	3	0	0	3
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisites: Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).						
CJC	122	Community Policing	3	0	0	3
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. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).						
CJC	131	Criminal Law	3	0	0	3
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. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).						
CJC	132	Court Procedure and Evidence	3	0	0	3
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. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).						
CJC	141	Corrections	3	0	0	3
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).						

CJC	161	Intro Homeland Security	3	0	0	3
This course introduces the historical, organizational and practical aspects of Homeland Security. Topics include a historic overview, definitions and concepts, organizational structure, communications, technology, mitigation, prevention and preparedness, response and recovery, and the future of Homeland Security. Upon completion, students should be able to explain essential characteristics of terrorism and Homeland Security, and define roles, functions and interdependency between agencies. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).						
CJC	162	Intel Analysis & Sec Mgmt	3	0	0	3
This course examines intelligence analysis and its relationship to the security management of terrorist attacks and other threats to national security of the United States. Topics include a historic overview, definitions and concepts, intelligence evolution-politicization-operations-strategies, surveillance, analysis perspectives, covert action, and ethics. Upon completion, students should be able to outline intelligence policies, evaluate source information, implement intelligence techniques and analysis, identify threats, and apply ethical behaviors. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).						
CJC	163	Trans and Border Security	3	0	0	3
This course provides an in-depth view of modern border and transportation security including the technologies used for detecting potential threats from terrorists and weapons. Topics include an overview of security challenges, detection devices and equipment, transportation systems, facilities, threats and counter-measures, and security procedures, policies and agencies. Upon completion, students should be able to describe border security, the technologies used to enforce it, and the considerations and strategies of border security agencies. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).						
CJC	211	Counseling	3	0	0	3
This course introduces the basic elements of counseling and specific techniques applicable to the criminal justice setting. Topics include observation, listening, recording, interviewing, and problem exploration necessary to form effective helping relationships. Upon completion, students should be able to discuss and demonstrate the basic techniques of counseling. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).						
CJC	212	Ethics and Community Relations	3	0	0	3
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. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).						
CJC	213	Substance Abuse	3	0	0	3
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. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).						
CJC	214	Victimology	3	0	0	3
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. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).						
CJC	215	Organization and Administration	3	0	0	3
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. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).						
CJC	221	Investigative Principles	3	2	0	4
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. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).						

CJC	222	Criminalistics	3	0	0	3

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. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).

CJC	223	Organized Crime	3	0	0	3

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. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).

CJC	225	Crisis Intervention	3	0	0	3

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. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).

CJC	231	Constitutional Law	3	0	0	3

This course covers the impact of the Constitution of the United States and its amendments on the criminal justice system. Topics include the structure of the Constitution and its amendments, court decisions pertinent to contemporary criminal justice issues, and other related topics. Upon completion, students should be able to identify/discuss the basic structure of the United States Constitution and the rights/procedures as interpreted by the courts. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).

CJC	232	Civil Liability	3	0	0	3

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. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).

CJC	233	Correctional Law	3	0	0	3

This course introduces statutory/case law pertinent to correctional concepts, facilities, and related practices. Topics include examination of major legal issues encompassing incarceration, probation, parole, restitution, pardon, restoration of rights, and other related topics. Upon completion, students should be able to identify/discuss legal issues which directly affect correctional systems and personnel. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).

Construction Management (CMT)

CMT	120	Codes and Inspections	3	0	0	3

This course covers building codes and the code inspections process used in the design and construction of residential and commercial buildings. Emphasis is placed on commercial, residential, and accessibility (ADA) building codes. Upon completion, students should understand the building code inspections process and apply building code principals and requirements to construction projects.

CMT	210	Construction Management Fundamentals	3	0	0	3

This course introduces the student to the fundamentals of effective supervision emphasizing professionalism through knowledge and applied skills. Topics include safety, planning and scheduling, contracts, 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	0	3
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 jobsite and qualify for the OSHA Training Certification. Co-requisite: CMT 210 .						
CMT	214	Planning and Scheduling	3	0	0	3
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. Pre-requisites: CMT 210 and BPR 130 .						
CMT	216	Costs and Productivity	3	0	0	3
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. Pre-requisite: CMT 210 .						
CMT	218	Human Relations Issues	3	0	0	3
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. Pre-requisite: CMT 210 .						

Cooperative Education (COE)

COE	111	Co-op Work Experience I	0	0	10	1
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
This course provides work experience with a college approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.						
COE	113	Co-op Work Experience I	0	0	30	3
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
This course description may vary depending on individual program requirements. Contact your program's department for more information. Co-requisite: Take one: COE 111, COE 112, COE 113, or COE 114.						
COE	121	Co-op Work Experience II	0	0	10	1
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
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 124	Co-op Work Experience II	0	0	40	4
This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.					
COE 125	Work Experience Seminar II	1	0	0	1
This course description may vary depending on individual program requirements. Contact your program's department for more information. Co-requisite: Take one: COE 121, COE 122, COE 123, or COE 124.					
COE 131	Co-op Work Experience III	0	0	10	1
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 132	Co-op Work Experience III	0	0	20	2
This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.					
COE 135	Work Experience Seminar III	1	0	0	1
This course description may vary depending on individual program requirements. Contact your program's department for more information. Co-requisite: Take one: COE 131, COE 132, COE 133, or COE 134.					
COE 211	Co-op Work Experience IV	0	0	10	1
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	Co-op Work Experience IV	0	0	20	2
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
This course description may vary depending on individual program requirements. Contact your program's department for more information. Co-requisite: Take one: COE 211, COE 212, COE 213, or COE 214.					
COE 221	Co-op Work Experience V	0	0	10	1
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 222	Co-op Work Experience V	0	0	20	2
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 231	Co-op Work Experience VI	0	0	10	1
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.					

Communication (COM)

For AA, AS, and AFA programs, three credit hours in Speech/Communication may be substituted for three credit hours in Humanities/Fine Arts. Speech/Communication may not substitute for the literature requirement.

COM	110	Introduction to Communication	3	0	0	3

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)*. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).

COM	111	Voice and Diction I	3	0	0	3

This course provides guided practice in the proper production of speech. Emphasis is placed on improving speech, including breathing, articulation, pronunciation, and other vocal variables. Upon completion, students should be able to demonstrate effective natural speech in various contexts. *This course has been approved for transfer under the CAA as a premajor and/or elective course requirement*. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).

COM	120	Introduction to Interpersonal Communication	3	0	0	3

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)*. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).

COM	130	Nonverbal Communication	3	0	0	3

This course introduces the contemporary study of nonverbal communication in daily life. Topics include haptics, kinesics, proxemics, facial displays, and appearance. Upon completion, students should be able to analyze/interpret nonverbal communication and demonstrate greater awareness of their own nonverbal communication habits. *This course has been approved for transfer under the CAA as a premajor and/or elective course requirement*. Pre-requisite: C or better in **COM 110** or **COM 120**.

COM	140	Intro to Intercultural Communication	3	0	0	3

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 for transfer under the CAA as a general education course in Humanities/Fine Arts (Substitute)*. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).

COM	150	Introduction to Mass Communication	3	0	0	3

This course introduces print and electronic media and the new information technologies in terms of communication theory and as economic, political, and social institutions. Emphasis is on the nature, history, functions, and responsibilities of mass communication industries in a global environment and their role and impact in American society. Upon completion, students should 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*. Pre-requisite: C or better in **ENG 111**.

COM	231	Public Speaking	3	0	0	3

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 for transfer under the CAA as a general education course in Humanities/Fine Arts (Substitute)*. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).

Cosmetology (COS)

COS 111	Cosmetology Concepts I	4	0	0	4
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. Co-requisite: COS 112 .					
COS 112	Salon I	0	24	0	8
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. Co-requisite: COS 111 .					
COS 113	Cosmetology Concepts II	4	0	0	4
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. Pre-requisite: COS 111. Co-requisite: COS 114 .					
COS 114	Salon II	0	24	0	8
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. Pre-requisite: COS 112. Co-requisite: COS 113 .					
COS 115	Cosmetology Concepts III	4	0	0	4
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. Pre-requisite: COS 111. Co-requisite: COS 116 .					
COS 116	Salon III	0	12	0	4
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. Pre-requisite: COS 112. Co-requisite: COS 115 .					
COS 117	Cosmetology Concepts IV	2	0	0	2
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. Pre-requisite: COS 115. Co-requisite: COS 118 .					
COS 118	Salon IV	0	21	0	7
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. Pre-requisite: COS 116. Co-requisite: COS 117 .					
COS 223	Contemporary Hair Coloring	1	3	0	2
This course covers basic color concepts, hair coloring problems, and application techniques. Topics include color theory, terminology, contemporary techniques, product knowledge, and other related topics. Upon completion, students should be able to identify a client's color needs and safely and competently perform color applications and correct problems. Pre-requisites: COS 111 and COS 112 .					
COS 224	Trichology and Chemistry	1	3	0	2
This course is a study of hair and the interaction of applied chemicals. Emphasis is placed on pH actions and the reactions and effects of chemical ingredients. Upon completion, students should be able to demonstrate an understanding of chemical terminology, pH testing, and chemical reactions on hair.					

COS	240	Contemporary Design	1	3	0	2
This course covers methods and techniques for contemporary designs. Emphasis is placed on contemporary designs and other related topics. Upon completion, students should be able to demonstrate and apply techniques associated with contemporary design. Pre-requisites: COS 111 and COS 112 .						
COS	250	Computerized Salon Operations	1	0	0	1
This course introduces computer and salon software. Emphasis is placed on various computer and salon software applications. Upon completion, students should be able to utilize computer skills and software applications in the salon setting.						

Computer Science (CSC)

CSC	119	Programming Orient	1	2	0	2
This course provides students with an opportunity to develop the knowledge and skills required to succeed in the programming program. Emphasis is placed on introducing students to the tools and resources available to them in programming. Upon completion, students should be able to demonstrate knowledge of programming tools, resources, and services available.						
CSC	120	Computing Fundamentals I	3	2	0	4
This course provides the essential foundation for the discipline of computing and a program of study in computer science, including the role of the professional. Topics include algorithm design, data abstraction, searching and sorting algorithms, and procedural programming techniques. Upon completion, students should be able to solve problems, develop algorithms, specify data types, perform sorts and searches, and use an operating system. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: Take one: (DMA 010, DMA 020, DMA 030, DMA 040, DMA 050), MAT 120, MAT 121, MAT 161, MAT 171, or MAT 175.						
CSC	134	C++ Programming	2	3	0	3
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: CIS 115.						
CSC	139	Visual Basic Programming	2	3	0	3
This course introduces computer programming using the Visual BASIC programming language with object-oriented programming principles. Emphasis is placed on event-driven programming methods, including creating and manipulating objects, classes, and using object-oriented tools such as the class debugger. Upon completion, students should be able to design, code, test and debug at a beginning level. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: CIS 115 or ELN 232.						
CSC	143	Object-Oriented Programming	2	3	0	3
This course introduces the concepts of object-oriented programming. 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, test, debug, and implement objects at the application level using the appropriate environment.						
CSC	151	JAVA Programming	2	3	0	3
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: CIS 115.						
CSC	153	C# Programming	2	3	0	3
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, debug, and implement objects using the appropriate environment at the beginning level. Pre-requisite: CIS 115.						

CSC	234	Advanced C++	2	3	0	3
This course is a continuation of CSC 134 using the C++ programming language with standard programming principles. Emphasis is placed on advanced arrays/tables, file management/processing techniques, data structures, sub-programs, interactive processing, sort/merge routines, and libraries. Upon completion, students should be able to design, code, test, debug and document programming solutions. Pre-requisite: CSC 134 .						
CSC	239	Advanced Visual BASIC Prog	2	3	0	3
This course is a continuation of CSC 139 using the Visual BASIC programming language with object-oriented programming principles. Emphasis is placed on event-driven programming methods, including creating and manipulating objects, classes, and using object-oriented tools such as the class debugger. Upon completion, students should be able to design, code, test, debug, and implement objects using the appropriate environment. This course has been approved for transfer under the CAA as a premajor and/or elective course requirement. Pre-requisite: CSC 139 .						
CSC	249	Data Structure & Algorithms	2	3	0	3
This course introduces the data structures and algorithms frequently used in programming applications. Topics include lists, stacks, queues, dequeues, heaps, sorting, searching, mathematical operations, recursion, encryption, random numbers, algorithm testing, and standards. Upon completion, students should be able to design data structures and implement algorithms to solve various problems. Pre-requisite: Take one: CSC 133, CSC 134, CSC 135, CSC 136, CSC 138, CSC 139, CSC 140, CSC 141, or CSC 142 .						
CSC	251	Advanced JAVA Programming	2	3	0	3
This course is a continuation of CSC 151 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, and implement objects using the appropriate environment. Pre-requisite: CSC 151 .						
CSC	253	Advanced C# Programming	2	3	0	3
This course is a continuation of CSC 153 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, debug, and implement objects using the appropriate environment. Pre-requisite: CSC 153 .						
CSC	258	JAVA Enterprise Programs	2	3	0	3
This course provides a continuation to CSC 151 using the Java Enterprise Edition (JEE) programming architecture. Topics include distributed network applications, database connectivity, Enterprise Java Beans, servlets, collection frameworks, JNDI, RMI, JSP, multithreading XML and multimedia development. Upon completion, students should be able to program a client/server enterprise application using the JEE framework. Pre-requisite: CSC 151 .						
CSC	289	Programming Capstone Project	1	4	0	3
This course provides an opportunity to complete a significant programming project from the design phase through implementation with minimal instructor support. Emphasis is placed on project definition, testing, presentation, and implementation. Upon completion, students should be able to complete a project from the definition phase through implementation. Pre-requisite: CTS 285 .						

Computer Tech Integration (CTI)

CTI	110	Web, Pgm, & Db Foundation	2	2	0	3
This course covers the introduction of the tools and resources available to students in programming, mark-up language and services on the Internet. Topics include standard mark-up language Internet services, creating web pages, using search engines, file transfer programs; and database design and creation with DBMS products. Upon completion students should be able to demonstrate knowledge of programming tools, deploy a web-site with mark-up tools, and create a simple database table.						
CTI	120	Network & Security Fundamentals	2	2	0	3
This course introduces students to the Network concepts, including networking terminology and protocols, local and wide area networks, and network standards. Emphasis is placed on securing information systems and the various implementation policies. Upon completion, students should be able to perform basic tasks related to networking mathematics, terminology, media and protocols.						

CTI	140	Virtualization Concepts	1	4	0	3
This course introduces operating system virtualization. Emphasis is placed on virtualization terminology, virtual machine storage, virtual networking and access control. Upon completion, students should be able to perform tasks related to installation, configuration and management of virtual machines.						
CTI	141	Cloud & Storage Concepts	1	4	0	3
This course introduces cloud computing and storage concepts. Emphasis is placed on cloud terminology, virtualization, storage networking and access control. Upon completion, students should be able to perform tasks related to installation, configuration and management of cloud storage systems.						
CTI	150	Mobile Computing Devices	2	2	0	3
This course introduces mobile computing devices, including topics related to their selection, usage, deployment, and support in enterprise environments. Emphasis is placed on the evaluation, usage, deployment, security, and support of mobile devices, applications (apps), and peripherals. Upon completion, students should be able to select, deploy, and support mobile devices in an enterprise environment.						
CTI	240	Virtualization Admin I	1	4	0	3
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.						
CTI	241	Virtualization Admin II	1	4	0	3
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. Pre-requisite: CTI 240.						

Computer Information Technology (CTS)

CTS	112	Windows™	1	2	0	2
This course includes the fundamentals of the Windows™ software. Topics include graphical user interface, icons, directories, file management, accessories, and other applications. Upon completion, students should be able to use Windows™ software in an office environment.						
CTS	115	Info Sys Business Concepts	3	0	0	3
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i>						
CTS	120	Hardware/Software Support	2	3	0	3
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. Pre-requisite: CIS 110 or CIS 111 .						
CTS	130	Spreadsheet	2	2	0	3
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. Pre-requisite: Take one: CIS 110, CIS 111, or OST 137 .						
CTS	210	Computer Ethics	3	0	0	3
This course introduces the student to current legal and ethical issues in the computer/engineering field. Topics include moral reasoning, ethical standards, intellectual property, social issues, encryption, software piracy, constitutional issues, and public policy in related matters. Upon completion, students should be able to demonstrate an understanding of the moral and social responsibilities and public policy issues facing an industry. Pre-requisites: (Take one: CIS 110, CIS 111, NET 110, or TNE 111) and [RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094)].						

CTS	230	Advanced Spreadsheet	2	2	0	3
This course covers advanced spreadsheet design and development. Topics include advanced functions and statistics, charting, macros, databases, and linking. Upon completion, students should be able to demonstrate competence in designing complex spreadsheets. Pre-requisite: CTS 130 .						
CTS	285	Systems Analysis & Design	3	0	0	3
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. Pre-requisites: CIS 115 , NET 110 , and NOS 110 .						
CTS	287	Emerging Technologies	3	0	0	3
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	0	3
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. Pre-requisite: CTS 285 .						

Culinary (CUL)

CUL	110	Sanitation and Safety	2	0	0	2
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. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094). Co-requisite: CUL 110A						
CUL	110A	Sanitation and Safety Lab	0	2	0	1
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. Co-requisite: CUL 110 .						
CUL	112	Nutrition for Foodservice	3	0	0	3
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. Pre-requisite: [(ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094)] and (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050).						
CUL	120	Purchasing	2	0	0	2
This course covers purchasing for foodservice operations. Emphasis is placed on yield tests, procurement, negotiating, inventory control, product specification, purchasing ethics, vendor relationships, food product specifications and software applications. Upon completion, students should be able to apply effective purchasing techniques based on the end-use of the product. Pre-requisites: [(ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094)] and (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050).						
CUL	135	Food and Beverage Service	2	0	0	2
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. Pre-requisite: (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050). Co-requisites: CUL 110 and CUL 135A.						

CUL 135A	Food and Beverage Service Lab	0	2	0	1
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. Co-requisite: CUL 135 .					
CUL 140	Basic Culinary Skills	2	6	0	5
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 foodservice industry. Pre-requisites: (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050). Co-requisites: C or better in CUL 110 , CUL 110A .					
CUL 150	Food Science	1	2	0	2
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. Pre-requisites: [(ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094)], and (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050). Co-requisite: CUL 110 , CUL 110A , and CUL 150A .					
CUL 150A	Food Science	0	2	0	1
This course provides a laboratory experience for enhancing student skills with the chemical and physical changes that occur in food when cooking, handling and processing. Emphasis is placed on practical applications 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. Co-requisite: CUL 150 .					
CUL 160	Baking I	1	4	0	3
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. Pre-requisite: (RED 090 and ENG 090), ENG 095, or (EFL 074, EFL 084, and EFL 094). Co-requisites: CUL 110 , CUL 110A , and (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050).					
CUL 170	Garde-Manger I	1	4	0	3
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. Co-requisite: CUL 110 . Pre-requisite: C or higher in CUL 140 .					
CUL 230	Global Cuisines	1	8	0	5
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. Pre-requisites: CUL 110 , CUL 110A , CUL 140 , CUL 160 , CUL 250 , and CUL 270 .					
CUL 240	Culinary Skills II	1	8	0	5
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. Pre-requisites: CUL 110 , CUL 110A , CUL 140 , and CUL 160 .					
CUL 250	Classical Cuisine	1	8	0	5
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. Pre-requisites: Take all: CUL 110 , CUL 140 , and CUL 240 .					

CUL	260	Baking II	1	4	0	3

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. Pre-requisites: **CUL 110** and **CUL 160**.

CUL	270	Garde-Manger II	1	4	0	3

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. Pre-requisites: **Take all: CUL 110, CUL 140, and CUL 170**.

Database Management (DBA)

DBA	110	Database Concepts	2	3	0	3

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. Co-requisite: CIS 110 or CIS 111.

DBA	115	Database Applications	2	2	0	3

This course applies concepts learned in DBA 110 to a specific DBMS. Topics include manipulating multiple tables, advanced queries, screens and reports, linking, and command files. Upon completion, students should be able to create multiple table systems that demonstrate updates, screens, and reports representative of industry requirements. Pre-requisite: **DBA 110**.

DBA	120	Database Programming I	2	2	0	3

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. Pre-requisites: CIS 115 and DBA 110.

DBA	210	Database Administration	2	3	0	3

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. Pre-requisite: CIS 155.

DBA	230	Database in Corp Environs	3	0	0	3

This course covers database systems as they relate to the corporate environment. Topics include knowledge-based, decision-support, and expert systems; database choices; data warehousing; and corporate structure. Upon completion, students should be able to analyze and recommend database systems needed by a corporation. Pre-requisite: DBA 210.

DBA	240	Database Analysis & Design	2	3	0	3

This course is an exploration of the established and evolving methodologies for the analysis, design, and development of a database system. Emphasis is placed on business data characteristics and usage, managing database projects, prototyping and modeling, and CASE tools. Upon completion, students should be able to analyze, develop, and validate a database implementation plan. Pre-requisite: DBA 210.

Design Drafting (DDF)

DDF	211	Design Process I	1	6	0	4
This course emphasizes design processes for finished products. Topics include data collection from manuals and handbooks, efficient use of materials, design sketching, specifications, and vendor selection. Upon completion, students should be able to research and plan the design process for a finished product. Pre-requisite: DFT 111.						
DDF	212	Design Process II	1	6	0	4
This course stresses the integration of various design practices. Emphasis is placed on the creation of an original design. Upon completion, students should be able to apply engineering graphics and design procedures to a design project. Pre-requisite: DDF 211 .						
DDF	213	Design Process III	1	6	0	4
This course provides an opportunity to produce a complete design project. Topics include materials, production means, analysis, documentation, calculations, and specifications. Upon completion, students should be able to produce a completed design project. Pre-requisite: DDF 212 .						

Dental (DEN)

DEN	101	Preclinical Procedures	4	6	0	7
This course provides instruction in procedures for the clinical dental assistant as specified by the North Carolina Dental Practice Act. Emphasis is placed on orientation to the profession, infection control techniques, instruments, related expanded functions, and diagnostic, operative, and specialty procedures. Upon completion, students should be able to demonstrate proficiency in clinical dental assisting procedures. <i>This is a diploma-level course.</i>						
DEN	102	Dental Materials	3	4	0	5
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. <i>This is a diploma-level course.</i>						
DEN	103	Dental Sciences	2	0	0	2
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. <i>This is a diploma-level course.</i>						
DEN	104	Dental Health Education	2	2	0	3
This course covers the study of preventive dentistry to prepare dental assisting students for the role of dental health educator. Topics include etiology of dental diseases, preventive 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. <i>This is a diploma-level course.</i> Pre-requisites: DEN 101 and DEN 111.						
DEN	105	Practice Management	2	0	0	2
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. <i>This is a diploma-level course.</i>						
DEN	106	Clinical Practice I	1	0	12	5
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 and laboratory and clinical skills in a dental setting. <i>This is a diploma-level course.</i> Pre-requisites: DEN 101 and DEN 111.						

DEN	107	Clinical Practice II	1	0	12	5
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. Pre-requisite: DEN 106 .						
DEN	110	Orofacial Anatomy	2	2	0	3
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. Core course: Dental Hygiene & Dental Assisting.						
DEN	111	Infection/Hazard Control	2	0	0	2
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. Core course: Dental Hygiene & Dental Assisting.						
DEN	112	Dental Radiography	2	3	0	3
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. Core course: Dental Hygiene & Dental Assisting.						
DEN	120	Dental Hygiene Preclinic Lecture	2	0	0	2
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. Co-requisite: DEN 121 .						
DEN	121	Dental Hygiene Pre-clinic Laboratory	0	6	0	2
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. Co-requisite: DEN 120 .						
DEN	123	Nutrition/Dental Health	2	0	0	2
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
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. Pre-requisite: DEN 110 .						
DEN	125	Dental Office Emergencies	0	2	0	1
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, the student 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
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. Pre-requisite: DEN 120 . Co-requisite: DEN 131 .						

DEN 131	Dental Hygiene Clinic I	0	0	9	3
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. Pre-requisite: DEN 121 . Co-requisite: DEN 130 .					
DEN 140	Dental Hygiene Theory II	1	0	0	1
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. Pre-requisite: DEN 130 . Co-requisite: DEN 141 .					
DEN 141	Dental Hygiene Clinic II	0	0	6	2
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. Pre-requisite: DEN 131 . Co-requisite: DEN 140 .					
DEN 220	Dental Hygiene Theory III	2	0	0	2
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. Pre-requisite: DEN 140 . Co-requisite: DEN 221 .					
DEN 221	Dental Hygiene Clinic III	0	0	12	4
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. Pre-requisite: DEN 141 . Co-requisite: DEN 220 .					
DEN 222	General and Oral Pathology	2	0	0	2
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. Pre-requisite: Take one: BIO 163, BIO 165, or BIO 168 .					
DEN 223	Dental Pharmacology	2	0	0	2
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. Co-requisite: Take one: BIO 163, BIO 165, or BIO 168 .					
DEN 224	Materials and Procedures	1	3	0	2
This course introduces the physical properties of materials and related procedures used in dentistry. Topics include restorative and preventive materials, fabrication of casts and appliances, and chairside 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 chairside functions. Pre-requisite: DEN 111 .					
DEN 230	Dental Hygiene Theory IV	1	0	0	1
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. Pre-requisite: DEN 220 . Co-requisite: DEN 231 .					
DEN 231	Dental Hygiene Clinic IV	0	0	12	4
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. Pre-requisite: DEN 221 . Co-requisite: DEN 230 .					

DEN	232	Community Dental Health	2	0	3	3

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, preventive 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

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.

Design: Creative (DES)

DES	225	Textiles/Fabrics	2	2	0	3

This course includes the study of woven and non-woven fabrics for interiors. Topics include characteristics of fibers, yarns, weaving, felting, and knitting; processing of leather; and adorning and finishing of interior fabrics. Upon completion, students should be able to recognize and use correct terminology for upholstery, window treatments, and rugs/carpets with regard to flammability, performance, and durability.

DES	255	History/Int & Furn I	3	0	0	3

This course covers interiors, exteriors, and furnishings from ancient Egypt through French Neo-Classicism. Emphasis is placed on vocabulary, chronology, and style recognition. Upon completion, students should be able to classify and date interior and exterior architecture and furnishings and be conversant with pertinent vocabulary.

DES	275	Furniture Design & Construction	2	2	0	3

This course introduces contemporary furniture design and construction techniques used in custom and handmade furniture building. Topics include design and manufacturing processes and materials selection for handmade and production, case goods, and upholstery manufacturing. Upon completion, students should be able to design and describe manufacturing processes used in both case goods and upholstered furniture manufacturing.

Drafting (DFT)

DFT	111	Technical Drafting I	1	3	0	2

This course introduces basic drafting skills, equipment, and applications. Topics include sketching, measurements, lettering, dimensioning, geometric construction, orthographic projections and pictorials drawings, sections, and auxiliary views. Upon completion, students should be able to understand and apply basic drawing principles and practices. Co-requisites: DFT 151.

DFT	111A	Technical Drafting I Lab	0	3	0	1

This course provides a laboratory setting to enhance basic drafting skills. Emphasis is placed on practical experiences that enhance the topics presented in DFT 111. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in DFT 111. Co-requisite: **DFT 111**.

DFT	112	Technical Drafting II	1	3	0	2

This course provides for advanced drafting practices and procedures. Topics include detailed working drawings, hardware, fits and tolerances, assembly and sub-assembly, geometric dimensioning and tolerancing, intersections, and developments. Upon completion, students should be able to produce detailed working drawings. Pre-requisite: **DFT 111**.

DFT	112A	Technical Drafting II Lab	0	3	0	1

This course provides a laboratory setting to enhance advance drafting skills. Emphasis is placed on practical experiences that enhance the topics presented in DFT 112. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in DFT 112. Co-requisite: **DFT 112**.

DFT	119	Basic CAD	1	2	0	2

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	0	3

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	0	3

This course introduces extended CAD applications. Emphasis is placed upon intermediate applications of CAD skills. Upon completion, students should be able to use extended CAD applications to generate and manage drawings. Pre-requisite: DFT 151.

DFT	154	Intro Solid Modeling	2	3	0	3

This course is an introduction to basic three-dimensional solid modeling and design software. Topics include basic design, creation, editing, rendering and analysis of solid models, and creation of multiview drawings. Upon completion, students should be able to use design techniques to create, edit, render and generate a multiview drawing. Pre-requisite: DFT 151.

DFT	170	Engineering Graphics	2	2	0	3

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 for transfer under the CAA as a premajor and/or elective course requirement.*

DFT	253	CAD Data Management	2	2	0	3

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. Pre-requisite: **DFT 151**.

DFT	254	Intermediate Solid Model/Render	2	3	0	3

This course presents a continuation of basic three-dimensional solid modeling and design software. Topics include advanced study of parametric design, creation, editing, rendering and analysis of solid model assemblies, and multiview drawing generation. Upon completion, students should be able to use parametric design techniques to create and analyze the engineering design properties of a model assembly. Pre-requisite: **DFT 154**.

DFT	259	CAD Project	1	4	0	3

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, Bills of Material, annotations, and spreadsheets. Pre-requisite: DFT 154 or ARC 114.

Digital Media Technology (DME)

DME	110	Intro to Digital Media	2	2	0	3

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	0	3

This course provides students with an introduction to creative expression and art/design techniques in a digital environment. Emphasis is placed on designing, creating, editing and integrating visual components consisting of bit-mapped and vector-based images, drawings, banners, text, simple animations, and multiple layers. Upon completion, students should be able to design and produce a range of visual products using digital processing techniques.

DME 120	Intro to Multimedia Applications	2	2	0	3
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. Pre-requisite: DME 110 .					
DME 130	Digital Animation I	2	2	0	3
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. Pre-requisite: DME 110 .					
DME 140	Intro to Audio/Video Media	2	2	0	3
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. Pre-requisite: DME 110 .					
DME 210	User Interface Design	2	2	0	3
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. Pre-requisite: DME 110 .					
DME 220	Interactive Multimedia Programming	2	2	0	3
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. Pre-requisite: DME 120 .					
DME 230	Digital Animation II	2	2	0	3
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. Pre-requisite: DME 130 .					
DME 260	Emerging Tech Digital Media	2	2	0	3
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. Pre-requisites: DME 120 and DME 130 .					
DME 270	Prof Pract Digital Media	2	2	0	3
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. Pre-requisites: DME 120 and DME 130 .					
DME 285	Systems Project	2	2	0	3
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. Pre-requisites: DME 120 and DME 130 .					

Developmental Mathematics (DMS)

Developmental Math Shell Courses:

DMS 001	Developmental Math Shell 1	.75	.5	0	1
This shell course is designed to hold the last one module needed in the Developmental Math sequence. This course provides an opportunity to customize developmental math content in specific developmental math areas. Content will be one DMA module appropriate to the required level of the student. Upon completion, students should be able to demonstrate an understanding of their specific developmental math area of content.					

DMS	002	Developmental Math Shell 2	1.5	1	0	2

This shell course is designed to hold the last two modules in a Developmental Math sequence. This course provides an opportunity to customize developmental math content in specific developmental math areas. Content will be two DMA modules appropriate to the required level of the student. Upon completion, students should be able to demonstrate an understanding of their specific developmental math area of content.

DMS	003	Developmental Math Shell 3	2.25	1.5	0	3

This shell course is designed to hold three modules in a Developmental Math sequence. This course provides an opportunity to customize developmental math content in specific developmental math areas. Content will be three DMA modules appropriate to the required level of the student. Upon completion, students should be able to demonstrate an understanding of their specific developmental math area of content.

DMS	004	Developmental Math Shell 4	3	2	0	4

This shell course is designed to hold four modules in a Developmental Math sequence. This course provides an opportunity to customize developmental math content in specific developmental math areas. Content will be four DMA modules appropriate to the required level of the student. Upon completion, students should be able to demonstrate an understanding of their specific developmental math area of content.

Description of the Developmental Math Module Curriculum:

DMA	010	Operation with Integers	.75	.5	0	1

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	.75	.5	0	1

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. Pre-requisite: **DMA 010**.

DMA	030	Proportion/Ratio/Rate/Percent	.75	.5	0	1

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. Pre-requisite: (**DMA 010** and **DMA 020**).

DMA	040	Express/Lin Equat/Inequal	.75	.5	0	1

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. Pre-requisite: (**DMA 010**, **DMA 020**, and **DMA 030**).

DMA	050	Graphs/Equations of Lines	.75	.5	0	1

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. Pre-requisite: (**DMA 010**, **DMA 020**, **DMA 030**, and **DMA 040**).

DMA	060	Polynomial/Quadratic Applications	.75	.5	0	1

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. Pre-requisite: (**DMA 010**, **DMA 020**, **DMA 030**, **DMA 040**, and **DMA 050**).

DMA	070	Rational Expressions/Equations	.75	.5	0	1

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. Pre-requisite: (**DMA 010**, **DMA 020**, **DMA 030**, **DMA 040**, **DMA 050**, and **DMA 060**).

DMA 080	Radical Expressions/Equations	.75	.5	0	1
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. Pre-requisite: (DMA 010, DMA 020, DMA 030, DMA 040, DMA 050, DMA 060, and DMA 070).					

Drama/Theatre (DRA)

DRA 111	Theatre Appreciation	3	0	0	3
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. <i>This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.</i> Pre-requisite: ENG 095, RED 090, or (EFL 074, EFL 084, and EFL 094).					
DRA 112	Literature of the Theatre	3	0	0	3
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. <i>This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.</i> Co-requisite: ENG 111.					
DRA 120	Voice for Performance	3	0	0	3
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Co-requisite: DRA 111.					
DRA 126	Storytelling	3	0	0	3
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. <i>This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.</i> Pre-requisite: ENG 095, RED 090, or (EFL 074, EFL 084, and EFL 094).					
DRA 130	Acting I	0	6	0	3
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Co-requisite: DRA 111.					
DRA 131	Acting II	0	6	0	3
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: C or better in DRA 130 .					
DRA 132	Stage Movement	2	2	0	3
This course provides an applied study of selected principles of stage movement for actors. Topics include improvisation, mime, stage combat, clowning, choreography, and masks. Upon completion, students should be able to focus properly on stage, to create characters, and to improvise scenes, perform mimes, fight, clown, juggle, and waltz. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Co-requisite: DRA 111 .					
DRA 140	Stagecraft I	0	6	0	3
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Co-requisite: DRA 111.					

DRA	142	Costuming	2	2	0	3
This course covers the techniques of costume construction and crafts processes. Emphasis is placed on learning costuming techniques, using equipment and materials, and finishing production-appropriate costumes. Upon completion, students should be able to demonstrate an understanding of pattern drafting, construction techniques, and costume fitting procedures. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i>						
DRA	143	Costume Design	2	2	0	3
This course covers the analysis, research, design, and problem solving related to costume design. Emphasis is placed on director/designer communication, conceiving, research, and rendering of designs. Upon completion, students should be able to demonstrate skills in communication, design process, and rendering. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i>						
DRA	145	Stage Make-up	1	2	0	2
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 makeup. Upon completion, students should be able to create and apply make-up, prosthetics, and hairpieces. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i>						
DRA	170	Play Production I	0	9	0	3
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i>						
DRA	171	Play Production II	0	9	0	3
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: C or better in DRA 170 .						
DRA	240	Lighting for the Theatre	2	2	0	3
This course is an applied study of theatre lighting and is designed to train theatre technicians. Emphasis is placed on lighting technology including the mechanics of lighting and light control equipment by practical work with lighting equipment. Upon completion, students should be able to demonstrate competence with lighting equipment. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: C or better in DRA 111 .						
DRA	270	Play Production III	0	9	0	3
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: C or better in DRA 171 .						
DRA	271	Play Production IV	0	9	0	3
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: C or better in DRA 270 .						

Economics (ECO)

ECO 251 Principles of Microeconomics 3 0 0 3

This course introduces economic analysis of individual, business, and industry 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 for transfer under the CAA as a general education course in Social/Behavioral Sciences.* Pre-requisites: [(RED 080 and ENG 080), ENG 085, or (EFL 074, EFL 084, and EFL 094)], and (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050).

ECO 252 Principles of Macroeconomics 3 0 0 3

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. Sections of this course may also be offered at the honors level for students who are members of the GTCC Honors Program. *This course has been approved for transfer under the CAA as a general education course in Social/Behavioral Sciences.* Pre-requisites: [(RED 080 and ENG 080), ENG 085, or (EFL 074, EFL 084, and EFL 094)] and (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050).

Education (EDU)

EDU 119 Intro to Early Child Education 4 0 0 4

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 that are responsive to the needs of all children and families. Upon completion, students should be able design career plans and develop schedules, environments and activity plans appropriate for all children. This course is a unique requirement of the Early Childhood Education program. Pre-requisite: RED 070 or (EFL 074, EFL 084, and EFL 094).

EDU 131 Child, Family and Community 3 0 0 3

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. Pre-requisite: (ENG 080 and RED 080) or ENG 085.

EDU 144 Child Development I 3 0 0 3

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 is a unique requirement of the Early Childhood Education program. *This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.* Pre-requisite: (ENG 090 and RED 090) or ENG 095.

EDU 145 Child Development II 3 0 0 3

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 is a unique requirement of the Early Childhood Education program. *This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.* Pre-requisite: (ENG 090 and RED 090) or ENG 095.

EDU 146	Child Guidance	3	0	0	3
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 is a unique requirement of the Early Childhood Education program. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: (ENG 090 and RED 090) or ENG 095.					
EDU 151	Creative Activities	3	0	0	3
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. This course is a unique requirement of the Early Childhood Education program. Pre-requisite: (ENG 080 and RED 080) or ENG 085.					
EDU 153	Health, Safety and Nutrition	3	0	0	3
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, recognizing and reporting of abuse and neglect and state regulations. Upon completion, students should be able to demonstrate knowledge of health, safety, and nutritional needs, implement safe learning environments, and adhere to state regulations. Pre-requisite: (ENG 080 and RED 080) or ENG 085.					
EDU 154	Social/Emotion/Behav Dev	3	0	0	3
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. This course is a unique elective of the Early Childhood Education program. Pre-requisite: [(ENG 080 and RED 080) or ENG 085], EDU 144, and EDU 145.					
EDU 157	Active Play	2	2	0	3
This course introduces the use of indoor and outdoor physical activities to promote the physical, cognitive, and social/emotional development of children. Topics include the role of active play, development of play skills, playground design, selection of safe equipment and materials, and surfacing for active play. Upon completion, students should be able to discuss the stages of play, the role of teachers in play, and the design of appropriate active play areas and activities. This course is a unique elective of the Early Childhood Education program. Pre-requisite: (ENG 080 and RED 080) or ENG 085.					
EDU 214	Early Child Interm Pract	1	9	0	4
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. Pre-requisites: [(ENG 090 and RED 090) or ENG 095], EDU 119, EDU 144, and EDU 146.					
EDU 216	Foundations of Education	4	0	0	4
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 for transfer under the CAA as a premajor and/or elective course requirement at select institutions. Pre-requisite: (ENG 090 and RED 090) or ENG 095.					
EDU 221	Children with Exceptionalities	3	0	0	3
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 is a unique requirement of the Early Childhood Education program. Pre-requisites: [(ENG 090 and RED 090) or ENG 095], EDU 144, and EDU 145.					

EDU 234	Infants, Toddlers, & Twos	3	0	0	3
This course covers the skills needed to effectively implement group care for infants, toddlers, and two-year olds. Emphasis is placed on child development and developmentally appropriate practices. Upon completion, students should be able to identify, plan, select materials and equipment, and implement and evaluate a developmentally appropriate curriculum. This course is a unique elective of the Early Childhood Education program. Pre-requisites: [(ENG 090 and RED 090) or ENG 095], EDU 119 , and EDU 144 .					
EDU 235	School-Age Development & Program	3	0	0	3
This course includes developmentally appropriate practices in group settings for school-age children. Emphasis is placed on principles of development, environmental planning, and positive guidance techniques. Upon completion, students should be able to discuss developmental principles for all children ages five to twelve and plan and implement developmentally-appropriate activities. This course is a unique elective of the Early Childhood Education program. Pre-requisite: (ENG 090 and RED 090) or ENG 095 .					
EDU 251	Exploration Activities	3	0	0	3
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. This course is a unique requirement of the Early Childhood Education program. Pre-requisites: [(ENG 090 and RED 090) or ENG 095] and (EDU 144 or EDU 145). Co-requisite: EDU 251A .					
EDU 251A	Exploration Activities Lab	0	2	0	1
This course provides a laboratory component to complement EDU 251 . Emphasis is placed on practical experiences that enhance concepts introduced in the classroom. Upon completion, students should be able to demonstrate a practical understanding of the development and implementation of appropriate science, math, and social studies activities for children. This course is a unique requirement of the Early Childhood Education program. Pre-requisite: (ENG 090 and RED 090) or ENG 095 . Co-requisite: EDU 251 .					
EDU 259	Curriculum Planning	3	0	0	3
This course is designed to focus on curriculum planning for three to five year olds. Topics include philosophy, curriculum models, indoor and outdoor environments, scheduling, authentic assessment, and planning developmentally appropriate experiences. Upon completion, students should be able to evaluate children's development, critique curriculum, plan for individual and group needs, and assess and create quality environments. This course is a unique requirement of the Early Childhood Education program. Pre-requisites: [(ENG 090 and RED 090) or ENG 095], EDU 119 , EDU 144 , EDU 145 , and EDU 151 .					
EDU 261	Early Childhood Administration I	3	0	0	3
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. This course is a unique requirement of the Early Childhood Education program. Pre-requisite: (ENG 090 and RED 090) or ENG 095 . Co-requisite: EDU 119 .					
EDU 262	Early Childhood Administration II	3	0	0	3
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. This course is a unique elective of the Early Childhood Education program. Pre-requisites: [(ENG 090 and RED 090) or ENG 095] and EDU 261 . Co-requisite: EDU 119 .					
EDU 271	Educational Technology	2	2	0	3
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. Pre-requisite: (ENG 090 and RED 090) or ENG 095 .					

EDU	280	Language & Literacy Experiences	3	0	0	3
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. This course is a unique requirement of the Early Childhood Education program. Pre-requisites: [(ENG 090 and RED 090) or ENG 095] and (EDU 144 or EDU 145). Co-requisite: EDU 280A.						
EDU	280A	Literacy Experiences Lab	0	2	0	1
This course provides a laboratory component to complement EDU 280. Emphasis is placed on practical experiences that enhance concepts introduced in the classroom. Upon completion, students should be able to demonstrate a practical understanding of the development and implementation of appropriate early literacy experiences. This course is a unique requirement of the Early Childhood Education program. Pre-requisite: (ENG 090 and RED 090) or ENG 095 . Co-requisite: EDU 280 .						
EDU	284	Early Childhood Capstone Prac	1	9	0	4
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. Pre-requisites: [(ENG 090 and RED 090) or ENG 095], EDU 119 , EDU 144 , EDU 145 , EDU 146 , EDU 151 , and (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050).						

English As A Foreign Language (EFL)

Initial student placement in developmental courses is based on individual college placement testing policies and procedures. Students should begin developmental course work at the appropriate level indicated by the college's placement test.

EFL	061	Listening/Speaking I	5	0	0	5
This course is designed to provide the basic oral/aural language skills needed for essential daily conversation on campus and in the community. Emphasis is placed on vocabulary building, communication in various social and academic situations, and various spoken grammatical skills. Upon completion, students should be able to produce and understand English dealing with routine topics using basic syntax and vocabulary skills.						
EFL	062	Listening/Speaking II	5	0	0	5
This course is designed to enhance intermediate listening and speaking skills of non-native speakers of English. Emphasis is placed on the ability to hold extended conversation and on the ability to understand extended spoken discourse. Upon completion, students should be able to demonstrate improved listening skills and strategies in a variety of settings. Pre-requisite: EFL 061 .						
EFL	063	Listening/Speaking III	5	0	0	5
This course is designed to increase the ability and confidence of high intermediate-level non-native speakers of English in verbal expression and listening comprehension. Emphasis is placed on listening/speaking skills which would be appropriate for group discussions, oral presentations, and note taking. Upon completion, students should be able to successfully participate in high intermediate-level listening and speaking activities. Pre-requisite: EFL 062 .						
EFL	064	Listening/Speaking IV	5	0	0	5
This course is designed to prepare advanced-level non-native speakers of English for academic and professional speaking and listening activities. Emphasis is placed on learning and practicing strategies of effective oral expression and comprehension of spoken discourse in informal and formal settings. Upon completion, students should be able to effectively participate in activities appropriate to academic and professional settings. Pre-requisite: EFL 063 .						
EFL	071	Reading I	5	0	0	5
This course is designed to help those literacy skills achieve reading fluency in English at the beginning level. Emphasis is placed on basic academic and cultural vocabulary and reading strategies which include self-monitoring, and recognizing organizational styles and context clues. Upon completion, students should be able to use these strategies to read and comprehend basic academic, narrative, and expository texts.						

EFL	072	Reading II	5	0	0	5
This course provides preparation in academic and general purpose reading in order to achieve reading fluency at the low-intermediate level. Emphasis is placed on expanding academic and cultural vocabulary and developing effective reading strategies to improve comprehension and speed. Upon completion, students should be able to read and comprehend narrative and expository texts at the low-intermediate instructional level. Pre-requisite: EFL 071 .						
EFL	073	Reading III	5	0	0	5
This course is designed to develop fundamental reading and study strategies at the intermediate level needed for curriculum programs. Emphasis is placed on building vocabulary and cultural knowledge, improving comprehension, and developing study strategies on basic-level college materials and literary works. Upon completion, students should be able to read and comprehend narrative and expository texts at the intermediate instructional level. Pre-requisite: EFL 072 .						
EFL	074	Reading IV	5	0	0	5
This course is designed to enhance the academic reading skills for successful reading ability as required in college-level courses. Emphasis is placed on strategies for effective reading and the utilization of these strategies to improve comprehension, analytical skills, recall, and overall reading speed. Upon completion, students should be able to comprehend, synthesize, and critique multi-disciplinary college-level reading/textbook materials. Pre-requisite: EFL 073 .						
EFL	081	Grammar I	5	0	0	5
This course provides non-native speakers of English with a variety of fundamental grammatical concepts which enrich language skills and comprehension. Emphasis is on key basic grammatical structures and opportunities for practice which incorporate grammatical knowledge into various skills areas. Upon completion, students should be able to demonstrate comprehension and correct usage of specified grammatical concepts.						
EFL	082	Grammar II	5	0	0	5
This course provides non-native speakers of English with a variety of basic grammatical concepts which enrich language skills and comprehension. Emphasis is on key low-intermediate grammatical structures and opportunities for practice which incorporate grammatical knowledge into various skills areas. Upon completion, students should be able to demonstrate by written and oral means the comprehension and correct usage of specified grammatical concepts. Pre-requisite: EFL 081 .						
EFL	083	Grammar III	5	0	0	5
This course is designed to provide high-intermediate non-native speakers of English with a knowledge of grammatical structures that improves academic communication. Emphasis is placed on using high-intermediate grammatical structures in meaningful contexts through exercises integrating the use of newly acquired structures with previously learned structures. Upon completion, students should be able to demonstrate improved proficiency, comprehension, and grammatical accuracy. Pre-requisite: EFL 082 .						
EFL	084	Grammar IV	5	0	0	5
This course is designed to give non-native speakers of English a full understanding of advanced grammatical structures and techniques. Emphasis is placed on oral and written communicative fluency through the study of advanced grammatical forms. Upon completion, students should be able to incorporate the structures covered in both spoken and written form, demonstrating improved proficiency, comprehension, and grammatical accuracy. Pre-requisite: EFL 083 .						
EFL	091	Composition I	5	0	0	5
This course introduces basic sentence structure and writing paragraphs. Emphasis is placed on word order, verb tense-aspect system, auxiliaries, word forms, and simple organization and basic transitions in writing paragraphs. Upon completion, students should be able to demonstrate a basic understanding of grammar and ability to write English paragraphs using appropriate vocabulary, organization, and transitions.						
EFL	092	Composition II	5	0	0	5
This course provides preparation in low-intermediate academic and general-purpose writing. Emphasis is placed on writing as a process, paragraph development, and basic essay organization. Upon completion, students should be able to write and independently edit and understand the major elements of the writing process, sentence, paragraph and essay. Pre-requisite: EFL 091 .						
EFL	093	Composition III	5	0	0	5
This course covers intermediate-level academic and general-purpose writing. Emphasis is placed on the writing process, content, organization, and language use in formal academic compositions in differing rhetorical modes. Upon completion, students should be able to effectively use the writing process in a variety of rhetorical modes. Pre-requisite: EFL 092 .						

EFL	094	Composition IV	5	0	0	5

This course prepares low-advanced non-native speakers of English to determine the purpose of their writing and to write paragraphs and essays to fulfill that purpose. Emphasis is placed on unity, coherence, completeness, audience, the writing process, and the grammatical forms and punctuation appropriate for each kind of writing. Upon completion, students should be able to write unified, coherent, and complete paragraphs and essays which are grammatical and appropriate for the intended audience. Pre-requisite: **EFL 093**.

EFL	095	Composition V	5	0	0	5

This course is designed to prepare advanced non-native speakers of English for college-level composition courses. Emphasis is placed on the study and process of writing formal essays and research papers and the analysis of literary, expository, and descriptive writings. Upon completion, students should be able to write and analyze professional and peer compositions and apply basic research principles. Pre-requisite: **EFL 094**.

Engineering (EGR)

EGR	115	Introduction to Technology	2	3	0	3

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. Co-requisite: (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050).

EGR	125	Appl Software for Tech	1	2	0	2

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 results in text and graphical formats.

EGR	131	Intro to Electronics Technology	1	2	0	2

This course introduces the basic skills required for electrical/electronics technicians. Topics include soldering/desoldering, safety and sustainability practices, test equipment, scientific calculators, AWG wire table, the resistor color code, electronic devices, problem solving, and use of hand tools. Upon completion, students should be able to solder/desolder, operate test equipment, apply problem-solving techniques, and use a scientific calculator.

EGR	250	Statics and Strength of Materials	4	3	0	5

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. Pre-requisite: **Take one: MAT 121, MAT 161, MAT 171, or MAT 175**.

EGR	285	Design Project	0	4	0	2

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. Pre-requisites: ELN 232 and ELN 234.

Electricity (ELC)

ELC	111	Introduction to Electricity	2	2	0	3

This course introduces the fundamental concepts of electricity and test equipment to non-electrical/electronics 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	0	5
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, and analyze simple DC/AC circuits. Co-requisite: ELC 126 or (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050).						
ELC	113	Residential Wiring	2	6	0	4
This course introduces the care/usage of tools and materials used in residential electrical installations and the requirements of the National Electrical Code. Topics include NEC, electrical safety, and electrical print 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 residential electrical installations.						
ELC	114	Commercial Wiring	2	6	0	4
This course provides instruction in the application of electrical tools, materials, and test equipment associated with commercial electrical installations. Topics include the NEC; safety; electrical blueprints; planning, layout, and installation of equipment and conduits; and wiring devices such as panels and overcurrent devices. Upon completion, students should be able to properly install equipment and conduit associated with commercial electrical installations. Pre-requisite: ELC 113.						
ELC	115	Industrial Wiring	2	6	0	4
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	0	4
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. Pre-requisite: AHR 111, ELC 111, or ELC 112						
ELC	118	National Electrical Code	1	2	0	2
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	119	NEC Calculations	1	2	0	2
This course covers branch circuit, feeder, and service calculations. Emphasis is placed on sections of the National Electrical Code related to calculations. Upon completion, students should be able to use appropriate code sections to size wire, conduit, and overcurrent devices for branch circuits, feeders, and service. Pre-requisite: ELC 118.						
ELC	125	Diagrams and Schematics	1	2	0	2
This course covers the interpretation of electrical diagrams, schematics, and drawings common to electrical applications. Emphasis is placed on reading and interpreting electrical diagrams and schematics. Upon completion, students should be able to read and interpret electrical diagrams and schematics.						
ELC	126	Electrical Computations	2	2	0	3
This course introduces the fundamental applications of mathematics which are used by an electrical/electronics technician. Topics include whole numbers, fractions, decimals, powers, roots, simple electrical formulas, and usage of a scientific calculator. Upon completion, students should be able to solve simple electrical mathematical problems.						
ELC	127	Software for Technicians	1	3	0	2
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	0	3
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 understand basic PLC systems and create simple programs.						

ELC	130	Advanced Motors/Controls	2	2	0	3

This course covers motors concepts, construction and characteristics and provides a foundation in motor controls. Topics include motor control ladder logic, starters, timers, overload protection, braking, reduced voltage starting, SCR control, AC/DC drives, system and component level troubleshooting. Upon completion, students should be able to specify, connect, control, troubleshoot, and maintain motors and motor control systems. Pre-requisite: **(Take one: ELC 111, ELC 112, or ELC 138) and ELC 117.**

ELC	131	Circuit Analysis I	3	3	0	4

This course introduces DC and AC electricity with an emphasis on circuit analysis, measurements, and operation of test equipment. Topics include DC and AC principles, circuit analysis laws and theorems, components, test equipment operation, circuit simulation, and other related topics. Upon completion, students should be able to interpret circuit schematics; design, construct, verify, and analyze DC/AC circuits; and properly use test equipment. Co-requisite: (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050).

ELC	213	Instrumentation	3	2	0	4

This course covers the fundamentals of instrumentation used in industry. Emphasis is placed on electric, electronic, and other instruments. Upon completion, students should be able to install, maintain, and calibrate instrumentation.

ELC	220	Photovoltaic Systems Tech	2	3	0	3

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. Pre-requisite: ELC 113.

ELC	221	Adv PV Sys Design	2	3	0	3

This course introduces specific elements in photovoltaic (pv) systems technologies including efficiency, modules, inverters, charge controllers, batteries, and system installation. Topics include National Electrical Code (NEC), electrical specifications, photovoltaic system components, array design and power integration requirements that combine to form a unified structure. Upon completion, students should be able to demonstrate an understanding of various photovoltaic designs and proper installation of NEC compliant solar electric power systems. Pre-requisite: **ELC 220.**

ELC	228	PLC Applications	2	6	0	4

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. Pre-requisite: ELC 128.

ELC	229	Applications Project	1	3	0	2

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. Pre-requisite: ELC 228.

Electronics (ELN)

ELN	131	Analog Electronics I	3	3	0	4

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. Pre-requisite: ELC 131.

ELN	132	Analog Electronics II	3	3	0	4

This course covers additional applications of analog electronic circuits with an emphasis on analog and mixed signal integrated circuits (IC). Topics include amplification, filtering, oscillation, voltage regulation, and other analog circuits. Upon completion, students should be able to construct, analyze, verify, and troubleshoot analog electronic circuits using appropriate techniques and test equipment. Pre-requisite: ELC 131.

ELN	133	Digital Electronics	3	3	0	4

This course covers combinational and sequential logic circuits. Topics include number systems, Boolean algebra, logic families, medium scale integration (MSI) and large scale integration (LSI) circuits, analog to digital (AD) and digital to analog (DA) conversion, and other related topics. Upon completion, students should be able to construct, analyze, verify, and troubleshoot digital circuits using appropriate techniques and test equipment. Pre-requisite: ELC 111, ELC 112, ELC 131 or ELC 140.

ELN	229	Industrial Electronics	3	3	0	4
This course covers semiconductor devices used in industrial applications. Topics include the basic theory, application, and operating characteristics of semiconductor devices. Upon completion, students should be able to install and/or troubleshoot these devices for proper operation in an industrial electronic circuit. Pre-requisite: ELC 112, ELC 131 or ELC 140.						
ELN	232	Introduction to Microprocessors	3	3	0	4
This course introduces microprocessor architecture and microcomputer systems including memory and input/output interfacing. Topics include low-level language programming, bus architecture, 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. Pre-requisite: ELN 133.						
ELN	234	Communication Systems	3	3	0	4
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. Pre-requisite: ELC 131.						
ELN	236	Fiber Optics and Lasers	3	2	0	4
This course introduces the fundamentals of fiber optics and lasers. Topics include the transmission of light; characteristics of fiber optic and lasers and their systems; fiber optic production; types of lasers; and laser safety. Upon completion, students should be able to understand fiber optic communications and basic laser fundamentals. Pre-requisite: ELC 131.						
ELN	249	Digital Communication	2	3	0	3
This course covers the core processes and applications associated with digital communication techniques. Topics include the characteristics of RF circuits, modulation, transmitters and receivers, electromagnetic transmission, antennas, and related applications. Upon completion, students should be able to demonstrate knowledge of the concepts associated with digital communication systems. Pre-requisite: ELN 133.						
ELN	271	RF Circuit Components I	1	3	0	2
This course introduces the core processes and applications associated with the analysis of RF circuit components. Topics include the characteristics of RF circuits, testing, analysis, optimization, tuning, and test fixtures. Upon completion, students should be able to demonstrate basic skills associated with RF circuit component testing and analysis. Pre-requisites: ELN 132 and ELN 133.						
ELN	272	RF Circuit Components II	1	3	0	2
This course provides the study of core processes and applications associated with the analysis and optimization of RF circuit components. Topics include the characteristics of RF circuits, testing, analysis, optimization, tuning, and test fixtures. Upon completion, students should be able to demonstrate more advanced skills associated with RF circuit component testing and analysis. Pre-requisite: ELN 271.						

Emergency Medical Science (EMS)

EMS	110	EMT - Basic	5	6	0	7
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 to achieve North Carolina State or National Registry EMT-Basic certification. Pre-requisites: [(RED 090 and ENG 090), ENG 095, or (EFL 074, EFL 084, and EFL 094)] and (DMA 010, DMA 020, and DMA 030).						
EMS	120	Intermediate Intervention	2	3	0	3
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. Pre-requisite: EMS 110 . Co-requisites: (EMS 121 or EMS 122), EMS 130 , and EMS 131 .						

EMS 121	EMS Clinical Practicum I	0	0	6	2
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. Pre-requisite: EMS 110 . Co-requisites: EMS 120 , EMS 130 , and EMS 131 .					
EMS 130	Pharmacology I for EMS	1	3	0	2
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. Pre-requisites: EMS 110 and (BIO 163 or BIO 165). Co-requisites: EMS 120 and EMS 131 .					
EMS 131	Advanced Airway Management	1	2	0	2
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. Pre-requisite: EMS 110 . Co-requisites: EMS 120 and EMS 130 .					
EMS 140	Rescue Scene Management	1	3	0	2
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. Pre-requisite: Permission of department chair and enrollment in the EMS program.					
EMS 150	Emerg Vehicles & EMS Comm	1	3	0	2
This course examines the principles governing emergency vehicles, 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. Pre-requisite: Permission from Department Chair and enrollment in the EMS program.					
EMS 210	Advanced Patient Assessment	1	3	0	2
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. Pre-requisites: EMS 120 , (EMS 121 or EMS 122), EMS 130 , and EMS 131 .					
EMS 220	Cardiology	2	6	0	4
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. Pre-requisites: EMS 120 , EMS 130 , and EMS 131 .					
EMS 221	EMS Clinical Practicum II	0	0	9	3
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. Pre-requisite: EMS 121 or (EMS 122 and COE 111).					
EMS 230	Pharmacology II for EMS	1	3	0	2
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. Pre-requisites: EMS 130 .					
EMS 231	EMS Clinical Pract III	0	0	9	3
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. Pre-requisite: EMS 221 or (EMS 222 and COE 121).					
EMS 240	Special Needs Patients	1	2	0	2
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. Pre-requisites: EMS 120 , (EMS 121 or EMS 122), EMS 130 , and EMS 131 .					

EMS	241	EMS Clinical Practicum IV	0	0	9	3

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. Pre-requisite: **EMS 231** or (**EMS 232** and **COE 131**).

EMS	250	Advanced Medical Emergencies	2	3	0	3

This course provides 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. Pre-requisites: **EMS 120**, (**EMS 121** or **EMS 122**), **EMS 130**, and **EMS 131**.

EMS	260	Advanced Trauma Emergencies	1	3	0	2

This course provides 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. Pre-requisites: **EMS 120**, (**EMS 121** or **EMS 122**), **EMS 130**, **EMS 131**, and **EMS 221**.

EMS	270	Life Span Emergencies	2	2	0	3

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. Pre-requisites: **EMS 120**, **EMS 130**, and **EMS 131**.

EMS	285	EMS Capstone	1	3	0	2

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. Pre-requisites: **EMS 220**, **EMS 250**, and **EMS 260**.

English (ENG)

Initial student placement in developmental courses is based on individual college placement testing policies and procedures. Students should begin developmental course work at the appropriate level indicated by the college's placement test.

ENG	070	Basic Language Skills	2	2	0	3

This course introduces the fundamentals of standard written English. Emphasis is placed on effective word choice, recognition of sentences and sentence parts, and basic usage. Upon completion, students should be able to generate sentences that clearly express ideas. This course does not satisfy the development reading and writing pre-requisite for **ENG 111** or **ENG 111A**.

ENG	080	Writing Foundations	3	2	0	4

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 pre-requisite for **ENG 111** or **ENG 111A**. Pre-requisite: C or better in **ENG 070** or **ENG 075**.

ENG	085	Reading & Writing Foundations	5	0	0	5

This course uses whole language to develop proficiency in reading and writing for college. Emphasis is placed on applying analytical and critical reading skills to a variety of texts and on introducing the writing process. Upon completion, students should be able to recognize and use various patterns of text organization and compose effective paragraphs. This course does not satisfy the developmental writing pre-requisite for **ENG 111** or **ENG 111A**. Pre-requisite: C or better in (**ENG 070** and **RED 070**) or **ENG 075**.

ENG 085A	Reading & Writing Foundations Lab	0	2	0	1
This laboratory provides the opportunity to practice the skills introduced in ENG 085. Emphasis is placed on practical skills for applying analytical and critical reading skills to a variety of texts and on the writing process. Upon completion, students should be able to apply those skills in the production of effective paragraphs. Pre-requisite: C or better in (ENG 070 and RED 070) or ENG 075. Co-requisite: ENG 085.					
ENG 090	Composition Strategies	3	0	0	3
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 satisfies the developmental writing requirement for ENG 111 and ENG 111A. Pre-requisite: C or better in ENG 080 or ENG 085. Co-requisite: ENG 090A.					
ENG 090A	Composition Strategies Lab	0	2	0	1
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. Pre-requisite: ENG 080 or ENG 085. Co-requisite: ENG 090.					
ENG 095	Reading & Composition Strategies	5	0	0	5
This course uses whole language to strengthen proficiency in reading and writing for college. Emphasis is placed on applying critical reading skills to narrative and expository texts and on using the writing process. Upon completion, students should be able to comprehend, analyze, and evaluate college texts and to compose essays in preparation for college writing. Pre-requisite: C or better in (ENG 080 and RED 080) or ENG 085.					
ENG 095A	Reading & Comp Strat Lab	0	2	0	1
This laboratory provides the opportunity to practice the skills introduced in ENG 095. Emphasis is placed on practical skills for applying critical reading skills to narrative and expository texts and on the writing process. Upon completion, students should be able to apply those skills in the production of effective essays in preparation for college writing. Pre-requisite: C or better in (ENG 080 and RED 080) or ENG 085. Co-requisite: ENG 095.					
ENG 102	Applied Communications II	3	0	0	3
This course is designed to enhance writing and speaking skills for the workplace. Emphasis is placed on generating short writings such as job application documents, memoranda, and reports and developing interpersonal communication skills with employees and the public. Upon completion, students should be able to prepare effective, short, and job-related written and oral communications. This is a diploma-level course.					
ENG 111	Expository Writing	3	0	0	3
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, that requires the use of computer software and Moodle, may also be offered at the honors level for students who are members of the GTCC Honors Program. <i>This course has been approved for transfer under the CAA as a general education course in English Composition.</i> Pre-requisite: (ENG 090 and RED 090) or ENG 095.					
ENG 111A	Expository Writing Lab	0	2	0	1
This writing laboratory is designed to apply the skills introduced in ENG 111. Emphasis is placed on the editing and revision components of the writing process. Upon completion, students should be able to apply those skills in the production of final drafts in ENG 111. Pre-requisite: (ENG 090 and RED 090) or ENG 095. Co-requisite: ENG 111.					
ENG 112	Argument-Based Research	3	0	0	3
This course, the second in a series of two, introduces research techniques, documentation styles, and argumentative strategies. Emphasis is placed on analyzing information and ideas 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, that requires the use of computer software and Moodle, may also be offered at the honors level for students who are members of the GTCC Honors Program. <i>This course has been approved for transfer under the CAA as a general education course in English Composition.</i> Pre-requisite: C or better in ENG 111.					
ENG 114	Professional Research and Reporting	3	0	0	3
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. Assignments will require use of word processing and presentation software. <i>This course has been approved for transfer under the CAA as a general education course in English Composition.</i> Pre-requisite: C or better in ENG 111.					

ENG 125	Creative Writing I	3	0	0	3
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. Assignments will require use of word processing presentation software application. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: C or better in ENG 111 . Co-requisite: ENG 112 , ENG 113 , or ENG 114 .					
ENG 126	Creative Writing II	3	0	0	3
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: ENG 125 .					
ENG 131	Introduction to Literature	3	0	0	3
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. Assignments will require use of word processing presentation software application. <i>This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.</i> Pre-requisite: C or better in ENG 111 . Co-requisite: ENG 112 , ENG 113 , or ENG 114 .					
ENG 231	American Literature I	3	0	0	3
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. Sections of this course may also be offered at the honors level for students who are members of the GTCC Honors Program. <i>This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.</i> Pre-requisite: C or better in ENG 112 , ENG 113 , or ENG 114 .					
ENG 232	American Literature II	3	0	0	3
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. <i>This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.</i> Pre-requisite: C or better in ENG 112 , ENG 113 , or ENG 114 .					
ENG 241	British Literature I	3	0	0	3
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. <i>This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.</i> Pre-requisite: C or better in ENG 112 , ENG 113 , or ENG 114 .					
ENG 242	British Literature II	3	0	0	3
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. <i>This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.</i> Pre-requisite: C or better in ENG 112 , ENG 113 , or ENG 114 .					
ENG 251	Western World Literature I	3	0	0	3
This course provides a survey of selected European works from the Classical period through the Renaissance. 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. <i>This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.</i> Pre-requisite: C or better in ENG 112 , ENG 113 , or ENG 114 .					
ENG 252	Western World Literature II	3	0	0	3
This course provides a survey of selected European works from the Neoclassical 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 selected works. <i>This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.</i> Pre-requisite: C or better in ENG 112 , ENG 113 , or ENG 114 .					

ENG	261	World Literature I	3	0	0	3
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. <i>This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.</i> Pre-requisite: C or better in ENG 112 , ENG 113 , or ENG 114 .						
ENG	262	World Literature II	3	0	0	3
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. <i>This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.</i> Pre-requisite: C or better in ENG 112 , ENG 113 , or ENG 114 .						
ENG	273	African-American Literature	3	0	0	3
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: C or better in ENG 112 , ENG 113 , or ENG 114 .						

Entertainment Technologies (ENT)

ENT	111	Introduction to Entertainment	2	2	0	3
This course introduces concepts of the various technology systems involved with live entertainment events. Topics include components and the basic operation of these systems, technical requirements for events and venues, and a survey of industry job descriptions and employment opportunities. Upon completion, students should be able to describe the equipment required for live events, the technical requirements of touring performance events, and employment in the industry.						
ENT	114	Entertainment Law	3	0	0	3
This course provides an introduction to legal aspects of the entertainment industry. Topics include performance rights, songwriting and personal appearance contracts, copyright law, trademarks, and the like. Upon completion, students should be able to explain the basic elements of a contract, recognizing, explaining, and evaluating elements of law that pertain to entertainment.						
ENT	131	Live Sound Production I	1	4	0	3
This course introduces the concepts and technical skills required for live event sound reinforcement. Topics include the operation and inter-connection of components of a basic sound system, including consoles, amplifiers, speakers, processors and microphones. Upon completion, students should apply the concepts of live sound reinforcement and set up and operate a small to medium-scale sound system for a live event.						
ENT	134	Acoustics	2	2	0	3
This course covers the principles and basic concepts of acoustics in sound recording and reinforcement. Topics include various acoustical properties, waveforms, resonances, frequencies, and responses and real-life applications in recording studios and live performance facilities. Upon completion, students should be able to describe basic acoustical properties and concepts and apply them in sound productions in studios and live performance facilities.						
ENT	135	Recording Engineering I	2	2	0	3
This course covers basic topics in the operation of an audio recording studio. Topics include audio theory, console, tape machine, and processor operation, proper microphone placement, multi-track mixing techniques, and session procedures. At the completion of the course, students should be able to record, mix, and edit in recording sessions.						
ENT	151	Concert Lighting I	2	2	0	3
This course is an introduction to the technical aspects of concert lighting. Topics include basic design, color theory, types of instruments, power distribution, control, and safety, proper hanging, connection, focus, and control of instruments. Upon completion, students should be able to explain basic concert lighting, color theory, and instrumentation, and to properly set up a variety of instruments.						

ENT 211	Entertainment Promotion	3	0	0	3
This course examines the elements of marketing and promotion as specifically applicable to the entertainment business. Topics include the creation of publicity materials, understanding the process of developing media relations, developing a press kit, and creating a publicity campaign. Upon completion, students should be able to create a marketing and promotion campaign.					
ENT 231	Live Sound Production II	1	4	0	3
This course continues instruction in concepts and technical skills required for live event sound reinforcement. Topics include advanced sound system setup and operation, in-depth operation of program and monitor consoles, System E.Q., and flown speaker arrays. Upon completion, students will be able to design, set up, and operate large-scale sound systems in various venues. Pre-requisite: ENT 131 .					
ENT 235	Recording Engineering II	2	2	0	3
This course continues the study of recording studio procedures learned in Sound Recording Engineering I. Topics include advanced digital recording, special effects, production techniques, engineer's record keeping, studio maintenance, and analysis of current commercial products for engineering techniques. Upon completion, students should be able to set up and run complex recording sessions and mix down commercially viable recordings. Pre-requisite: ENT 135 .					
ENT 237	Recording Engineering III	2	2	0	3
This course continues the study of recording studio procedures learned in ENT 235. Topics include computer-assisted mixing, time code synchronization of various machines, album sequencing and editing, and commercial production. Upon completion, students should be able to conduct any type of recording session and demonstrate working procedures in a professional recording studio. Pre-requisites: ENT 235 and MUS 214 .					
ENT 241	Equipment Maintenance	2	2	0	3
This course is designed to introduce basic concepts and techniques for maintaining and repairing sound and lighting equipment. Topics include basic maintenance, troubleshooting, soldering, wiring standards, calibration, and testing. Upon completion, students should be able to perform preventative maintenance and minor repairs on a wide variety of sound, lighting, and performance-related equipment.					
ENT 251	Concert Lighting II	2	2	0	3
This course is a continuation of Concert Lighting I and introduces more advanced concert lighting operations. Topics include advanced lighting concepts, lighting plot reading, followspot theory and operation, computerized control consoles, and large-scale mobile lighting systems. Upon completion, students should be able to construct complex lighting rigs from plots, operate followspots, and program/operate computerized control consoles. Pre-requisite: ENT 151 .					
ENT 252	Concert Lighting III	2	2	0	3
This course is a continuation of Concert Lighting II and introduces the student to moving-light and large-scale concert lighting operations. Topics include an overview of moving-light instruments, their operation, and their programming, offering hands-on training on large-scale lighting rigs. Upon completion, students should be able to identify different moving-light instruments, operate and program moving-lights, and construct and operate large-scale lighting rigs. Pre-requisite: ENT 251 .					
ENT 260	Songwriting/Publishing	3	0	0	3
This course provides instruction in writing commercial songs and in fundamentals of intellectual property and its value. Topics include song structures, lyric writing, melody writing, co-writing, demoing songs, performance rights organizations, and publishing. Upon completion, students should be able to write a song, identify the traits of good commercial songs, and describe different performing licenses. Pre-requisite: MUS 121 .					
ENT 272	Live Performance	1	4	0	3
This course provides the student with knowledge and experience in professional stage presence. Topics include general stage presence concepts, emcee skills, microphone usage, showmanship, and audience involvement, these skills being developed in actual performance settings. Upon completion, students should be able to perform on-stage to an audience in a professional and entertaining manner.					
ENT 278	Artist Management	3	0	0	3
This course covers the responsibilities and relationships with performers and managers, as well as third party business associates. Topics include managing independent and contracted artists, the manager's role in touring, personal appearances, concert performance/recording, arranging bookings, maintaining contacts, setting up and monitoring budgets. Upon completion, students should be able to locate, initiate, and then manage performers.					

ENT	285	Capstone Project	2	2	0	3

This course provides a capstone experience for the entertainment professional. Topics include planning, preparing, and developing a specific entertainment project, including selecting materials, setting up and monitoring budget, and overseeing a complete project. Upon completion, students should be able to create an entertainment project such as a compact disc, project portfolio, or a full concert performance. Pre-requisites: ENT 131, ENT 135, and ENT 151

Emergency Preparedness (EPT)

EPT	120	Sociology of Disaster	3	0	0	3

This course is designed to overview sociological disaster research, disaster systems, and alternative research approaches. Topics include human and organizational behaviors, long term disaster impact on communities, disaster warning, and evacuation considerations. Upon completion, students should be able to assess and predict the impact of disaster-related human behavior. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).

EPT	124	EM Services Law & Ethics	3	0	0	3

This course covers federal and state laws that affect emergency service personnel in the event of a natural disaster or terrorist incident. Topics include initial response and long-term management strategies, with an emphasis on legal and ethical considerations and coordination between local, state, and federal agencies. Upon completion, students should have an understanding of the role of private industry, government agencies, public policies, and federal/state declarations of disasters in emergency situations. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).

EPT	130	Mitigation & Preparedness	3	0	0	3

This course introduces the mitigation and preparation techniques and methods necessary to minimize the impact of natural, technological, and man-made disasters. Topics include hazard identification and mapping, design and construction applications, financial incentives, insurance, structural controls, preparation, planning, assessment, implementation, and exercises. Upon completion students should be able to develop a mitigation and preparedness plan. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).

EPT	150	Incident Management	3	0	0	3

This course introduces the National Incident Management System (NIMS). Topics include integrating command and control systems, maintaining communication within command and control systems, and using NIMS procedures. Upon completion, students should be able to demonstrate knowledge of key concepts necessary for operating within the National Incident Management System. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).

EPT	210	Response & Recovery	3	0	0	3

This course introduces the basic concepts, operational procedures, and authorities involved in response and recovery efforts to major disasters. Topics include federal, state, and local roles and responsibilities in major disaster, response and recovery work, with an emphasis on governmental coordination. Upon completion, students should be able to implement a disaster response plan and assess the needs of those involved in a major disaster. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).

EPT	220	Terrorism & Emergency Management	3	0	0	3

This course covers preparing for, responding to, and safely mitigating terrorism incidents. Topics include the history of terrorism, scene hazards, evidence preservation, risk assessment, roles and responsibilities, explosive recognition, and terrorism planning. Upon completion, students should be able to recognize the threat of terrorism and operate within the emergency management framework at a terrorism incident. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).

EPT	225	Hazard Analysis/Risk Assessment	3	0	0	3

This course covers the probability and frequency of hazards, level of hazard exposure, and the effect or cost, both direct and indirect, of this exposure. Topics include identifying and characterizing hazards, evaluating hazard severity and frequency, estimating risks, and determining potential societal and economic effects. Upon completion, students should be able to identify the potential hazards and risks within a community. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).

EPT	230	Emergency Planning	3	0	0	3

This course covers the rationale for and methods related to a comprehensive approach to emergency planning. Topics include the emergency planning process, command arrangement, coordination, budgetary issues, environmental contamination issues, and public policy concerns. Upon completion, students should be able to develop an emergency plan for a community. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).

EPT	260	Business Continuity	3	0	0	3

This course covers emergency preparedness techniques necessary to maintain business continuity. Topics include critical processes, planning, risk assessment, impact analysis, mitigation strategies, response, recovery and resumption activities. Upon completion, students should be able to demonstrate a working knowledge of the partnership between business and emergency response. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).

EPT	275	Emergency OPS Center Management	3	0	0	3

This course provides students with the knowledge and skills to effectively manage and operate an EOC during crisis situations. Topics include properly locating and designing an EOC, staffing, training and briefing EOC personnel, and how to operate an EOC. Upon completion, students should be able to demonstrate how to set up and operate an effective emergency operations center. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).

EPT	280	Building Resilient Communities	3	0	0	3

This course covers concepts needed to design and implement strategies in protecting communities from disasters, including decreasing community vulnerability and increasing community resiliency. Topics include disclosure of hazards, lifeline systems, evacuation planning, infrastructure location, analysis of building codes, public policy, natural environmental proactive systems, and educational programs. Upon completion, students should be able to develop a basic disaster-resilient community plan. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).

Entrepreneurship (ETR)

ETR	270	Entrepreneurship Issues	3	0	0	3

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 (FIP)

FIP	120	Introduction to Fire Protection	3	0	0	3

This course provides an overview of the 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. Pre-requisite: (RED 090 and ENG 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).

FIP	124	Fire Prevention and Public Education	3	0	0	3

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, meeting NFPA 1021.

FIP	128	Detection and Investigation	3	0	0	3

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, meeting NFPA 1021.

FIP	132	Building Construction	3	0	0	3
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 as related to fire conditions, meeting NFPA 1021.						
FIP	136	Inspections and Codes	3	0	0	3
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, meeting NFPA 1021.						
FIP	140	Industrial Fire Protection	3	0	0	3
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 plan and evaluate an industrial facility's fire protection, which meet elements of NFPA 1021 for Fire Officer I and II						
FIP	144	Sprinklers and Automatic Alarms	2	2	0	3
This course introduces various types of automatic sprinklers, standpipes, and fire alarm systems. Topics include wet or dry systems, testing and maintenance, water supply requirements, fire detection and alarm systems, and other related topics. Upon completion, students should be able to demonstrate a working knowledge of various sprinkler and alarm systems and required inspection and maintenance.						
FIP	148	Fixed and Portable Extinguishing Systems	2	2	0	3
This course provides a study of various types of fixed and portable extinguishing systems, their operation, installation, and maintenance. Topics include applications, testing, and maintenance of Halon, carbon dioxide, dry chemical and special extinguishing agents in fixed and portable systems. Upon completion, students should be able to identify various types of fixed and portable systems, including their proper application and maintenance.						
FIP	152	Fire Protection Law	3	0	0	3
This course covers fire protection law. Topics include torts, legal terms, contracts, liability, review of case histories and other related topics. Upon completion, students should be able to discuss laws, codes and ordinances as they relate to fire protection.						
FIP	156	Computers in Fire Service	1	2	0	2
This course covers the use of computers by fire protection organizations. Topics include operating systems, networking concepts, fire incident reporting systems, and other software applications in fire protection. Upon completion, students should be able to demonstrate knowledge of computers and their applications to fire protection. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, or EFL 094).						
FIP	160	Fire Protection/Electrical	2	0	0	2
This course covers the methods and means of electrical installations and uses as related to fire. Topics include basic electrical theories, wiring methods, electrical components and circuitry, and an introduction to the National Electrical Code. Upon completion, students should be able to demonstrate a basic knowledge of electricity, including its uses, characteristics, and hazards.						
FIP	160A	Fire Protection/Electrical Lab	0	2	0	1
This course provides practical applications to support FIP 160. Topics include switching devices, basic circuits, electrical distribution, and other related topics. Upon completion, students should be able to demonstrate knowledge of basic electrical equipment and hazards as related to fire protection. Co-requisite: FIP 160 .						
FIP	164	OSHA Standards	3	0	0	3
This course covers public and private sector OSHA work site requirements. Emphasis is placed on accident prevention and reporting, personal safety, machine operations, and hazardous material handling. Upon completion, students should be able to analyze and interpret specific OSHA regulations and write workplace policies designed to achieve compliance.						
FIP	176	HazMat: Operations	4	0	0	4
This course is designed to increase first responder awareness of the type, nature, physiological effects of, and defensive techniques for mitigation of HazMat incidents. Topics include recognition, identification, regulations and standards, zoning, resource usage, defensive operations, and other related topics. Upon completion, students should be able to recognize and identify the presence of hazardous materials and use proper defensive techniques for incident mitigation.						

FIP	180	Wildland Fire Behavior	3	0	0	3
This course covers the principles of wildland fire behavior and meteorology. Emphasis is placed on fire calculations, fuels, and related weather effects. Upon completion, students should be able to demonstrate and apply fire behavior theories through written and performance evaluations.						
FIP	220	Fire Fighting Strategies	3	0	0	3
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 related to operations involving various emergencies in fire and non-fire situations, meeting NFPA 1021.						
FIP	221	Advanced Fire Fighting Strategies	3	0	0	3
This course covers command-level operations for multi-company/agency operations involving fire and non-fire emergencies. Topics include advanced ICS, advanced incident analysis, command-level fire operations, and control of both man-made and natural major disasters. Upon completion, students should be able to describe proper and accepted systems for the mitigation of emergencies at the level of overall scene command. Pre-requisite: FIP 220 .						
FIP	224	Fire Instructor I & II	4	0	0	4
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	0	3
This course introduces local governmental financial principles and practices. Topics include budget preparation and justification, revenue policies, statutory requirements, audits, and the economic climate. Upon completion, students should be able to comprehend the importance of finance as it applies to the operations of a department.						
FIP	229	Fire Dynamics and Combustion	3	0	0	3
This course covers the theories and fundamentals of how and why fires start and spread, and how they are safely controlled. Topics include components of fire, fire sources, fire behavior, properties of combustible solids, classification of hazards, and the use of fire extinguishing agents. Upon completion, students should be able to describe the properties of matter and dynamics of fire, identify fuel sources, and compare suppressants and extinguishment techniques.						
FIP	230	Chemistry of Hazardous Materials I	5	0	0	5
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	231	Chemistry of Hazardous Materials II	4	2	0	5
This course covers hazardous materials characterization, properties, location, handling and response guidelines, hazard survey principles, and other related topics. Topics include radiation hazards, instruments, inspections, and detection of the presence of hazardous materials in industrial/commercial occupancies. Upon completion, students should be able to inspect chemical/radioactive sites and use on-site visits to gasoline and/or LPG storage facilities/chemical plants to develop a pre-plan. Pre-requisite: FIP 230 .						
FIP	232	Hydraulics and Water Distribution	2	2	0	3
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. Pre-requisites: (Take one: MAT 115, MAT 120, MAT 121, MAT 140, MAT 151, MAT 161, MAT 171, or MAT 175).						
FIP	236	Emergency Management	3	0	0	3
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. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).						

FIP	240	Fire Service Supervision	3	0	0	3

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 safety. Upon completion, students should be able to demonstrate an understanding of the roles and responsibilities of effective fire service supervision, meeting elements of NFPA 1021.

FIP	244	Fire Protection Project	3	0	0	3

This course provides an opportunity to apply knowledge covered in previous courses to employment situations that the fire protection professional will encounter. Emphasis is placed on the development of comprehensive and professional practices. Upon completion, students should be able to demonstrate knowledge of the fire protection service through written and performance evaluations.

FIP	248	Fire Svc Personnel Adm	3	0	0	3

This course covers the basics of setting up and administering the personnel functions of fire protection organizations. Emphasis is placed on human resource planning, classification and job analysis, equal opportunity employment, affirmative action, recruitment, retention, development, performance evaluation, and assessment centers. Upon completion, students should be able to demonstrate knowledge of the personnel function as it relates to managing fire protection.

FIP	252	Apparatus Spec & Purch	3	0	0	3

This course covers the specification and purchase of fire apparatus. Emphasis is placed on NFPA's standards for apparatus, recommended types of fire apparatus, purchase, and bidding procedures, and the importance of specifications. Upon completion, students should be able to make internal decisions, write specifications, and make recommendations for the purchase of major capital equipment.

FIP	256	Municipal Public Relations	3	0	0	3

This course is a general survey of municipal public relations and their effect on the governmental process. Topics include principles of public relations, press releases, press conferences, public information officers, image surveys, and the effects of perceived service on fire protection delivery. Upon completion, students should be able to manage the public relations functions of organizations which meet elements of NFPA 1021 for Fire Officer I and II.

FIP	276	Managing Fire Services	3	0	0	3

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, meeting NFPA 1021.

French (FRE)

FRE	111	Elementary French I	3	0	0	3

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. *This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.* Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).

FRE	112	Elementary French II	3	0	0	3

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. *This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.* Pre-requisite: C or better in **FRE 111**.

FRE	211	Intermediate French I	3	0	0	3

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. *This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.* Pre-requisite: C or better in **FRE 112**.

FRE	212	Intermediate French II	3	0	0	3

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. *This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.* Pre-requisite: C or better in **FRE 211**.

Geology (GEL)

GEL	111	Introductory Geology	3	2	0	4

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 for transfer under the CAA as a general education course in Natural Science.*

GEL	230	Environmental Geology	3	2	0	4

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 for transfer under the CAA as a general education course in Natural Science.* Pre-requisite: C or higher in **GEL 111**, **GEL 120**, or **PHS 130**.

Geography (GEO)

GEO	111	World Regional Geography	3	0	0	3

This course introduces the regional concept which emphasizes the spatial association of people and their environment. Emphasis is placed on the physical, cultural, and economic systems that interact to produce the distinct regions of the earth. Upon completion, students should be able to describe variations in physical and cultural features of a region and demonstrate an understanding of their functional relationships. *This course has been approved for transfer under the CAA as a general education course in Social/Behavioral Sciences.* Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).

GEO	112	Cultural Geography	3	0	0	3

This course is designed to explore the diversity of human cultures and to describe their shared characteristics. Emphasis is placed on the characteristics, distribution, and complexity of earth's cultural patterns. Upon completion, students should be able to demonstrate an understanding of the differences and similarities in human cultural groups. *This course has been approved for transfer under the CAA as a general education course in Social/Behavioral Sciences.* Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).

Geographic Information Systems (GIS)

GIS	111	Introduction to GIS	2	2	0	3

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 for transfer under the CAA as a premajor and/or elective course requirement.*

GIS	112	Introduction to GPS	2	2	0	3

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	0	3
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	0	3
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	0	3
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, the student will be able to operate within a CAD environment.						
GIS	212	GIS/GPS Applications	4	4	0	6
This course provides experience in operational and management issues in designing and implementing GIS/GPSs for use in planning, management, analysis, and locational decision making. Topics include applications in municipal, industrial, and service sectors and the associated planning, legal, national, and global issues with a project emphasizing the student's specialization. Upon completion, students should be able to design and apply GIS/GPS technologies to solve practical problems.						
GIS	215	GIS Data Models	2	2	0	3
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	230	GIS Data Creation	2	2	0	3
This course introduces the fundamental concepts of primary GIS data creation. Topics include the collection of field data, digital conversion of existing hardcopy maps, and the construction of spatial data from known geodetic locations. Upon completion, students should be able to demonstrate an ability to collect, create, and process spatial data within a variety of environments.						
GIS	245	Intro to Spatial Analysis	2	2	0	3
This course is designed to expose students to various components of spatial analysis. Emphasis is placed on modeling and decision making with the use of spatial data. Upon completion, students will be able to utilize statistical models in the process of spatial analysis. Pre-requisites: GIS 111 and GIS 121 .						
GIS	262	GIS Programming Trends	2	2	0	3
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. Pre-requisite: GIS 111 .						

Graphic Arts (GRA)

GRA	151	Computer Graphics I	1	3	0	2
This course introduces the use of hardware and software for production and design in graphic arts. Topics include graphical user interface and current industry uses such as design, layout, typography, illustration, and imaging for production. Upon completion, students should be able to understand and use the computer as a fundamental design and production tool.						
GRA	152	Computer Graphics II	1	3	0	2
This course covers advanced design and layout concepts utilizing illustration, page layout, and imaging software in graphic arts. Emphasis is placed on enhancing and developing the skills that were introduced in GRA 151. Upon completion, students should be able to select and utilize appropriate software for design and layout solutions. Pre-requisite: C or better in GRA 151 .						

GRA 153	Computer Graphics III	1	3	0	2
This course is a continuation of GRA 152. Emphasis is placed on advanced computer graphics hardware and software applications. Upon completion, students should be able to demonstrate competence in selection and utilization of appropriate software for specialized applications. Pre-requisite: C or better in GRA 152 .					
GRA 154	Computer Graphics IV	1	3	0	2
This course is a continuation of GRA 153. Emphasis is placed on advanced techniques using a variety of hardware and software applications to produce complex projects. Upon completion, students should be able to use electronic document production tools. Pre-requisite: C or better in GRA 153 .					
GRA 161	Computer Graphics Applications I	0	3	0	1
This course is designed to provide additional hands-on training using computer software and hardware for production and design in graphic arts. Emphasis is placed on utilizing various computer software and hardware to produce simple graphic arts projects. Upon completion, students should be able to use the computer as a graphic arts production tool. Co-requisite: GRA 151 .					
GRA 162	Computer Graphics Applications II	0	3	0	1
This course is designed to provide additional hands-on training using computer software and hardware for production and design in graphic arts. Emphasis is placed on utilizing various computer software and hardware to produce intermediate graphic arts projects. Upon completion, students should be able to effectively use the computer as a graphic arts production tool. Co-requisite: GRA 152 .					

Graphic Design (GRD)

GRD 110	Typography I	2	2	0	3
This course introduces the history and mechanics of type and its application to layout and design. Topics include typographic fundamentals, anatomy, measurements, composition, identification, and terminology. Upon completion, students should be able to demonstrate proficiency in design application, analysis, specification, and creation of typographic elements.					
GRD 111	Typography II	2	2	0	3
This course is a continuation of GRD 110. Emphasis is placed on solving challenging typographic problems. Upon completion, students should be able to understand and demonstrate advanced typographic applications. Pre-requisite: C or better in GRD 110 .					
GRD 131	Illustration I	1	3	0	2
This course introduces the application of rendering techniques to create illustrations. Emphasis is placed on controlling various media, methods, surfaces, design problems, and the appropriate media selection process. Upon completion, students should be able to produce quality illustrations from conception through finished artwork. Pre-requisite: C or better in ART 131 , DES 125 , or GRD 121 .					
GRD 141	Graphic Design I	2	4	0	4
This course introduces the conceptualization process used in visual problem solving. Emphasis is placed on learning the principles of design and on the manipulation and organization of elements. Upon completion, students should be able to apply design principles and visual elements to projects. Co-requisites: GRA 151 and GRA 161.					
GRD 142	Graphic Design II	2	4	0	4
This course covers the application of visual elements and design principles in advertising and graphic design. Topics include creation of various designs, such as logos, advertisements, posters, outdoor advertising, and publication design. Upon completion, students should be able to effectively apply design principles and visual elements to projects. Pre-requisite: C or better in ART 121 , DES 135 , or GRD 141 . Co-requisites: GRD 146 and GRD 152.					
GRD 146	Design Applications II	0	3	0	1
This course is designed to provide additional hands-on training in graphic design. Emphasis is placed on producing comprehensive projects utilizing concepts and technologies covered in GRD 141. Upon completion, students should be able to provide solutions to design problems. Pre-requisite: C or better in GRD 141. Co-requisite: GRD 142 .					

GRD 160	Photo Fundamentals I	1	4	0	3
This course introduces basic camera operations, roll film processing, and photographic print production. Topics include contrast, depth-of-field, subject composition, enlarger operation, and density control. Upon completion, students should be able to produce photographic prints with acceptable density values and quality. This course is limited to digital camera operations.					
GRD 161	Photo Fundamentals II	1	4	0	3
This course is a continuation of GRD 160. Topics include conversions, toning, color, specialized equipment, lighting, processing, and other methods and materials. Upon completion, students should be able to demonstrate proficiency in producing photographic prints. This course is limited to digital camera operations. Pre-requisite: C or better in GRD 160 .					
GRD 162	Photography Portfolio	1	4	0	3
This course provides an opportunity to develop a portfolio through research and review of previous photographic works. Topics include visual communication skills and presentation of works. Upon completion, students should be able to prepare and present a portfolio of their photographic works. Pre-requisite: C or better in GRD 161 .					
GRD 233	Product Illustration	1	3	0	2
This course covers the rendering and illustration of products for commercial purposes. Topics include viewpoint, styles, media, and subjects such as household, industrial, hardware, and sporting goods. Upon completion, students should be able to illustrate products using traditional line, continuous-tone, and digital media. Pre-requisites: C or better in (GRD 131 or GRD 230) and (GRD 152 or GRA 152).					
GRD 241	Graphic Design III	2	4	0	4
This course is an advanced exploration of various techniques and media for advertising and graphic design. Emphasis is placed on advanced concepts and solutions to complex and challenging graphic design problems. Upon completion, students should be able to demonstrate competence and professionalism in visual problem solving. Pre-requisite: C or better in DES 136 or GRD 142 .					
GRD 242	Graphic Design IV	2	4	0	4
This course is a continuation of GRD 241. Emphasis is placed on using advanced media techniques, concepts, strategies, and professionalism in all aspects of design. Upon completion, students should be able to conceptualize, create, and produce designs for reproduction. Pre-requisite: C or better in GRD 241 .					
GRD 243	Graphic Design V	2	4	0	4
This course covers artist/client relationships in advanced design processes. Emphasis is placed on analyzing the limitations and potential of communication media and strategies. Upon completion, students should be able to show mastery of media in producing designs to client specifications. Pre-requisite: C or better in GRD 242 .					
GRD 246	Design Applications III	0	3	0	1
This course is designed to provide additional hands-on training in graphic design. Emphasis is placed on producing complex design projects utilizing concepts and technologies taught in GRD 241. Upon completion, students should be able to produce complex design projects for reproduction. Co-requisite: GRD 241 .					
GRD 247	Design Applications IV	0	3	0	1
This course is designed to provide additional hands-on training in graphic design. Emphasis is placed on producing sophisticated design projects utilizing concepts and techniques covered in GRD 242. Upon completion, students should be able to solve complex design problems by producing projects to meet client specifications for reproduction. Co-requisite: GRD 242 .					
GRD 271	Multimedia Design I	1	3	0	2
This course introduces the fundamentals of multimedia design and production for computer-related presentations. Topics include interface design, typography, storyboarding, scripting, simple animation, graphics, digital audiovideo, and copyright issues. Upon completion, students should be able to design and produce multimedia presentations. Pre-requisite: C or better in GRD 151 or GRA 151 .					
GRD 272	Multimedia Design II	1	3	0	2
This course is a continuation of GRD 271. Emphasis is placed on advanced animation, specialized software, quality control, and cross-platform delivery, as well as problems associated with delivery media and interactivity. Upon completion, students should be able to produce multimedia presentations and determine and adapt to technical specifications for delivery. Pre-requisite: C or better in GRD 271 .					

GRD	280	Portfolio Design	2	4	0	4

This course covers the organization and presentation of a design/advertising or graphic art portfolio and appropriate related materials. Emphasis is placed on development and evaluation of the portfolio, design and production of a resume and self-promotional materials, and interview techniques. Upon completion, students should be able to prepare and professionally present an effective portfolio and related self-promotional materials. Pre-requisites: C or better in **GRD 142** and (**GRD 152** or **GRA 152**).

GRD	285	Client/Media Relations	1	2	0	2

This course introduces media pricing, scheduling, and business ethics. Emphasis is placed on communication with clients and determination of clients' advertising needs. Upon completion, students should be able to use professional communication skills to effectively orchestrate client/media relationships. Pre-requisites: **GRD 142** and (**GRA 121** or **GRA 152** or **GRD 152**).

Gerontology (GRO)

GRO	120	Gerontology	3	0	0	3

This course covers the psychological, social, and physical aspects of aging. Emphasis is placed on the factors that promote mental and physical well-being. Upon completion, students should be able to recognize the aging process and its psychological, social, and physical aspects. Pre-requisites: HSE 110 and PSY 150.

Health (HEA)

HEA	110	Personal Health/Wellness	3	0	0	3

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 for transfer under the CAA as a premajor and/or elective course requirement.* Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).

HEA	120	Community Health	3	0	0	3

This course provides information about contemporary community health and school hygiene issues. Topics include health education and current information about health trends. Upon completion, students should be able to recognize and devise strategies to prevent today's community health problems. *This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.* Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).

Heavy Equipment (HET)

HET	110	Diesel Engines	3	9	0	6

This course introduces theory, design, terminology, and operating adjustments for diesel engines. Emphasis is placed on safety, theory of operation, inspection, measuring, and rebuilding diesel engines according to factory specifications. Upon completion, students should be able to measure, diagnose problems, and repair diesel engines.

HET	112	Diesel Electrical Systems	3	6	0	5

This course introduces electrical theory and applications as they relate to diesel powered equipment. Topics include lighting, accessories, safety, starting, charging, instrumentation, and gauges. Upon completion, students should be able to follow schematics to identify, repair, and test electrical circuits and components.

HET	115	Electronic Engines	2	3	0	3

This course introduces the principles of electronically controlled diesel engines. Emphasis is placed on testing and adjusting diesel engines in accordance with manufacturer specifications. Upon completion, students should be able to diagnose, test, and calibrate electronically controlled diesel engines.

HET	116	Air Conditioning/Diesel Equipment	1	2	0	2

This course provides a study of the design, theory, and operation of heating and air conditioning systems in newer models of medium and heavy duty vehicles. Topics include component function, refrigerant recovery, and environmental regulations. Upon completion, students should be able to use proper techniques and equipment to diagnose and repair heating/air-conditioning systems according to industry standards.

HET	119	Mechanical Transmissions	2	2	0	3

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	0	2

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 road ability. Upon completion, students should be able to set up and follow a preventive maintenance schedule as directed by manufacturers.

HET	126	Prevent Maintenance Lab	0	3	0	1

This course provides a laboratory setting to enhance preventive maintenance practices used on medium and heavy duty vehicles and rolling assemblies. Emphasis is placed on practical experiences that enhance the topics presented in HET 125. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in HET 125. Co-requisite: **HET 125**.

HET	127	Shop Rules and Regulations	1	0	0	1

This course introduces safety, OSHA, and EPA general requirements used in the mobile equipment industry. Topics include fire extinguisher use, MSDS sheets, oil contamination, protective gear, and other related topics. Upon completion, students should be able to properly use fire extinguishers and demonstrate knowledge of applicable general safety, OSHA, and EPA regulations.

HET	128	Medium/Heavy Duty Tune Up	1	2	0	2

This course introduces tune-up and troubleshooting according to manufacturers' specifications. Topics include troubleshooting engine systems, tune-up procedures, and use and care of special test tools and equipment. Upon completion, students should be able to troubleshoot, diagnose, and repair engines and components using appropriate diagnostic equipment.

HET	134	Diesel Fuel & Power Systems	2	3	0	3

This course introduces the principles of fuel injection and other power systems used in the heavy equipment industry including newer and cleaner technology. Emphasis is placed on test equipment, component functions, safety, and theories of older conventional and newer and cleaner Tier III and Tier IV fuel systems. Upon completion, students should be able to diagnose and service fuel systems and explain proper safety procedures on alternative fuel systems used in heavy equipment industry.

HET	231	Med/Heavy Duty Brake System	1	3	0	2

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	232	Med/Heavy Duty Brake System Lab	0	3	0	1

This course provides a laboratory setting to enhance the skills for troubleshooting, adjusting, and repairing brake systems on medium and heavy duty vehicles. Emphasis is placed on practical experiences that enhance the topics presented in HET 231. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in HET 231. Co-requisite: **HET 231**.

HET	233	Suspension and Steering	2	4	0	4

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)

HIS 111 World Civilizations I 3 0 0 3

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 for transfer under the CAA as a general education course in Social/Behavioral Sciences.* Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).

HIS 112 World Civilizations II 3 0 0 3

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 for transfer under the CAA as a general education course in Social/Behavioral Sciences.* Pre-requisite: RED 090, ENG 095, or (EFL 074, 084, and EFL 094).

HIS 121 Western Civilization I 3 0 0 3

This course introduces western civilization from pre-history to the early modern era. Topics include ancient Greece, Rome, and Christian institutions of the Middle Ages and the emergence of national monarchies in western Europe. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in early western civilization. Sections of this course may also be offered at the honors level for students who are members of the GTCC Honors Program. *This course has been approved for transfer under the CAA as a general education course in Social/Behavioral Sciences.* Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).

HIS 122 Western Civilization II 3 0 0 3

This course introduces western civilization from the early modern era to the present. Topics include the religious wars, the Industrial Revolution, World Wars I and II, and the Cold War. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in modern western civilization. *This course has been approved for transfer under the CAA as a general education course in Social/Behavioral Sciences.* Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).

HIS 131 American History I 3 0 0 3

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 for transfer under the CAA as a general education course in Social/Behavioral Sciences.* Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).

HIS 132 American History II 3 0 0 3

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 American 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 for transfer under the CAA as a general education course in Social/Behavioral Sciences.* Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).

HIS 227 Native American History 3 0 0 3

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 for transfer under the CAA as a premajor and/or elective course requirement.* Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).

HIS 236 North Carolina History 3 0 0 3

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 for transfer under the CAA as a premajor and/or elective course requirement.* Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).

Healthcare Management (HMT)

HMT	110	Intro to Healthcare Management	3	0	0	3

This course introduces the functions, practices, organizational structures, and professional issues in healthcare management. Emphasis is placed on planning, controlling, directing, and communicating within health and human services organizations. Upon completion, students should be able to apply the concepts of management within a healthcare service environment. Pre-requisites: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).

HMT	210	Medical Insurance	3	0	0	3

This course introduces the concepts of medical insurance. Topics include types and characteristics of third-party payers, coding concepts, payment systems, and manual/electronic claims form preparation. Upon completion, students should be able to process third-party claims forms. Pre-requisites: **MED 122** or **OST 142**.

HMT	211	Long-Term Care Administration	3	0	0	3

This course introduces the administration of long-term care facilities and services. Emphasis is placed on nursing home care, home health care, hospice, skilled nursing facilities, and other long-term care services. Upon completion, students should be able to administer state and national standards and regulations as they apply to long-term care. Pre-requisite: **HMT 110**.

HMT	212	Mgmt of Healthcare Organizations	3	0	0	3

This course examines current issues affecting the management of healthcare delivery systems. Topics include current problems, changes, and challenges in the healthcare environment. Upon completion, students should be able to identify current health care issues and their impact on healthcare management. Pre-requisite: **HMT 110**.

HMT	220	Healthcare Financial Management	4	0	0	4

This course covers the methods and techniques utilized in the financial management of healthcare programs. Topics include cost determination, pricing of services, financial statement analysis, forecasting/projections, third-party billing, reimbursement, Medicare, Medicaid, and budgeting. Upon completion, students should be able to interpret and apply the principles of financial management in a healthcare environment. Pre-requisites: **ACC 121** and **HMT 110**.

HMT	225	Practice Management Simulation	2	2	0	3

This course introduces medical systems used to process and analyze information in the automated office. Emphasis is placed on daily processing of patient services, management reporting used to monitor productivity and interactive database reporting and analysis. Upon completion, students should be able to process daily services, generate and interpret management reports and utilize key indicators for monitoring practice productivity. Pre-requisite: **HMT 210**. Co-requisite: **HMT 220**.

Horticulture (HOR)

HOR	114	Landscape Construction	2	2	0	3

This course introduces the design and fabrication of landscape structures/features. Emphasis is placed on safety, tool identification and use, material selection, construction techniques, and fabrication. Upon completion, students should be able to design and construct common landscape structures/features.

HOR	118	Equipment Op & Maintenance	1	3	0	2

This course covers the proper operation and maintenance of selected equipment used in horticulture. Emphasis is placed on the maintenance, minor repairs, safety devices, and actual operation of selected equipment. Upon completion, students should be able to design a maintenance schedule, service equipment, and demonstrate safe operation of selected equipment.

HOR	160	Plant Materials I	2	2	0	3

This course covers identification, culture, characteristics, and use of plants in a sustainable landscape. Emphasis is placed on nomenclature, identification, growth requirements, cultural requirements, soil preferences, and landscape applications. Upon completion, students should be able to demonstrate knowledge of the proper selection and utilization of plant materials, including natives and invasive plants.

HOR	166	Soils & Fertilizers	2	2	0	3
This course covers the physical and chemical properties of soils and soil fertility and management. Topics include soil formation; classification; physical, chemical, and biological properties (including microorganisms); testing; and fertilizer application. Upon completion, students should be able to analyze, evaluate, and properly amend soils/media according to sustainable practices.						
HOR	170	Horticulture Computer Apps	1	3	0	2
This course introduces computer programs as they apply to the horticulture industry. Emphasis is placed on applications of software for plant identification, design, and irrigation. Upon completion, students should be able to use computer programs in horticultural situations.						
HOR	257	Arboriculture Practices	1	3	0	2
This course covers the culture and maintenance of trees and shrubs. Topics include fertilization, pruning, approved climbing techniques, pest control, and equipment use and safety. Upon completion, students should be able to properly prune trees and shrubs and perform arboricultural practices.						
HOR	260	Plant Materials II	2	2	0	3
This course covers important landscape plants. Emphasis is placed on identification, plant nomenclature, growth characteristics, culture requirements, and landscape uses. Upon completion, students should be able to demonstrate knowledge of the proper selection and utilization of plant materials.						

Hotel and Restaurant Management (HRM)

HRM	110	Intro to Hosp & Tourism	3	0	0	3
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. Pre-requisite: (RED 090 and ENG 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).						
HRM	120	Front Office Procedures	3	0	0	3
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 services. Pre-requisites: [(RED 090 and ENG 090), ENG 095, or (EFL 074, EFL 084, and EFL 094)] and (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050).						
HRM	135	Facilities Management	3	0	0	3
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.						
HRM	140	Legal Issues-Hospitality	3	0	0	3
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	0	3
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	0	3
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. Pre-requisites: CUL 135 and CUL 135A . Co-requisite: HRM 215A .						

HRM 215A	Restaurant Management Lab	0	2	0	1
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. Pre-requisite: CUL 135 and CUL 135A. Co-requisite: HRM 215 .					
HRM 220	Cost Control-Food & Beverage	3	0	0	3
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. Pre-requisite: MAT 110 or MAT 115. Co-requisite: HRM 220A.					
HRM 220A	Cost Control-Food & Beverage Lab	0	2	0	1
This course provides a laboratory experience for enhancing student skills in controls and purchasing procedures as applied to costs in the hospitality industry. Emphasis is placed on practical applications of reports, cost control, planning and forecasting, control systems, financial statements, operational efficiencies, labor controls and scheduling. Upon completion, students should be able to demonstrate proficiency in computer-based control applications. Pre-requisite: MAT 110 or MAT 115. Co-requisite: HRM 220 .					
HRM 225	Beverage Management	3	0	0	3
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 230	Club and Resort Management	3	0	0	3
This course introduces specific principles of managing a hospitality operation in a resort or club setting. Topics include operational efficiencies, resort and club marketing, recreational and sport activity management, and retail management. Upon completion, students should be able to demonstrate an understanding of the specialized skills involved in resort and club management.					
HRM 240	Marketing for Hospitality	3	0	0	3
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	0	3
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.					
HRM 280	Mgmt Problems-Hospitality	3	0	0	3
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. Pre-requisite: HRM 110 .					

Human Services (HSE)

HSE 110	Introduction to Human Services	2	2	0	3
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. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).					

HSE	112	Group Process I	1	2	0	2
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. Pre-requisites: HSE 110 and PSY 150.						
HSE	123	Interviewing Techniques	2	2	0	3
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. Pre-requisites: HSE 110 and PSY 150.						
HSE	125	Counseling	2	2	0	3
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. Pre-requisites: HSE 110 and PSY 150.						
HSE	210	Human Services Issues	2	0	0	2
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 multi-faceted 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. Pre-requisite: HSE 110.						
HSE	220	Case Management	2	2	0	3
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. Pre-requisite: HSE 110 .						
HSE	225	Crisis Intervention	3	0	0	3
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. Pre-requisite: HSE 125.						
HSE	226	Mental Retardation	3	0	0	3
This course covers mental retardation and related issues. Emphasis is placed on the theoretical perspectives, causes, prevention, and treatment of mental retardation. Upon completion, students should be able to demonstrate a general knowledge of the mentally retarded individual. This course also provides an overview of a broad range of other developmental disabilities. Pre-requisites: HSE 110 and PSY 150 .						
HSE	245	Stress Management	2	2	0	3
This course covers stressors and techniques for stress management. Topics include anger, assertiveness, breathing, change, coping skills, family, time management, meditation, guided imagery, and journaling. Upon completion, students should be able to identify areas of stress and the skills and management techniques for dealing with stressors. Pre-requisite: HSE 110.						

Humanities (HUM)

HUM	110	Technology and Society	3	0	0	3
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. <i>This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.</i> Pre-requisite: (RED 090 and ENG 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).						

HUM	115	Critical Thinking	3	0	0	3
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. Using word processing/ presentation software application, this course may meet the SACS humanities requirement for AAS degree programs. <i>This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.</i> Pre-requisite: C or better ENG 111.						
HUM	120	Cultural Studies	3	0	0	3
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. <i>This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.</i> Pre-requisite: (RED 090 and ENG 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).						
HUM	121	The Nature of America	3	0	0	3
This course provides an interdisciplinary survey of the American cultural, social, and political experience. Emphasis is placed on the multicultural character of American society, distinctive qualities of various regions, and the American political system. Upon completion, students should be able to analyze significant cultural, social, and political aspects of American life. <i>This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.</i> Pre-requisite: (RED 090 and ENG 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).						
HUM	122	Southern Culture	3	0	0	3
This course explores the major qualities that make the South a distinctive 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. <i>This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.</i> Pre-requisite: C or better in ENG 111.						
HUM	130	Myth in Human Culture	3	0	0	3
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. <i>This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.</i> Pre-requisite: (RED 090 and ENG 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).						
HUM	150	American Women's Studies	3	0	0	3
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. <i>This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.</i> Pre-requisite: (RED 090 and ENG 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).						
HUM	160	Introduction to Film	2	2	0	3
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. <i>This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.</i> Pre-requisite: (RED 090 and ENG 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).						
HUM	161	Advanced Film Studies	2	2	0	3
This course provides an advanced study of film art and production, building on skills learned in HUM 160. Topics include advanced film production techniques, film genres, examination of master directors' styles, and the relation of film to culture. Upon completion, students should be able to recognize and critically analyze advanced elements of film production. <i>This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.</i> Pre-requisite: HUM 160.						
HUM	211	Humanities I	3	0	0	3
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. <i>This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.</i> Pre-requisite: C or better in ENG 111.						

HUM	212	Humanities II	3	0	0	3

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 for transfer under the CAA as a general education course in Humanities/Fine Arts.* Pre-requisite: C or better in **ENG 111**.

Hydraulics (HYD)

HYD	110	Hydraulics/Pneumatics I	2	3	0	3

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	111	Mobile Hydraulic Systems	1	4	0	3

This course covers hydraulic components on mobile equipment including construction equipment, transportation, and farm equipment. Topics include servicing of pumps, testing and adjusting components, test points, and proper use and care of test equipment. Upon completion, students should be able to use proper test equipment to locate and repair problems on equipment.

Import Export Compliance (IEC)

IEC	168	Global Operations	3	0	0	3

This course introduces intra-country trade elements, and rules and regulations for document completion and compliance. Topics include the practical application of intra-country trade elements for proper governmental approval for foreign and domestic market entry and exit of shipments. Upon completion, students should be able to understand and explain intra-country shipments and to demonstrate an awareness of home/host country trade regulations impacting import/export management.

IEC	225	International Shipping	3	0	0	3

This course includes a study of the international supply chain with emphasis on the requirements for importing and exporting. Emphasis is placed on in-depth studies surrounding shipping modalities as related to specific product/commodity requirements for markets both domestic and abroad. Upon completion, students should be able to understand shipping modality selection based on product/commodity characteristics and the appropriate documentation flow for import/export shipping compliance.

IEC	226	Intro to Export Admin Reg	3	0	0	3

This course includes an in-depth study of US Export Administration Regulations to which compliance is required for product/commodity export. Topics include Export Management System, export licensing, foreign product classification, and distribution methods. Upon completion, students should be able to understand the document flow of import/export shipments and compliance requirements. Pre-requisite: **IEC 225**.

IEC	227	Elec Import/Export Doc	3	0	0	3

This course is designed to give students practical training for electronic preparation of import/export documentation used in intra-country shipments. Topics include electronic preparation of import/export documentation by nongovernment organizations, regulatory agencies’ requirements for submission and licensing. Pre-requisite: **IEC 225**.

Industrial Science (ISC)

ISC	112	Industrial Safety	2	0	0	2
This course introduces the principles of industrial safety. Emphasis is placed on industrial safety and OSHA regulations. Upon completion, students should be able to demonstrate knowledge of a safe working environment and OSHA compliance.						
ISC	115	Construction Safety	2	0	0	2
This course introduces the basic concepts of construction site safety. Topics include ladders, lifting, lock-out/tag-out, personal protective devices, scaffolds, and above/below ground work based on OSHA regulations. Upon completion, students should be able to demonstrate knowledge of applicable safety regulations and safely participate in construction projects.						
ISC	121	Environmental Health and Safety	3	0	0	3
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	Manufacturing Quality Control	2	3	0	3
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.						

International Business (INT)

INT	110	International Business	3	0	0	3
This course provides an overview of the environment, concepts, and basic differences involved in international business. Topics include forms of foreign involvement, international trade theory, government influences on trade and strategies, international organizations, multinational corporations, personnel management, and international marketing. Upon completion, students should be able to describe the foundation of international business.						

Legal Education (LEX)

LEX	110	Introduction to Paralegal Study	2	0	0	2
This course introduces the paralegal profession and the legal system, and an emphasis is placed on the role of professional and legal ethics. Topics include regulations, ethics, case analysis, legal reasoning, career opportunities, professional organizations, terminology and other related topics. Upon completion, students should be able to explain the role of the paralegal and identify the skills, knowledge, and ethics required of paralegals. Pre-requisite: (RED 090 and ENG 090), ENG 095, or (EFL 074, EFL 084, and EFL 094). Co-requisite: ACA 111.						
LEX	120	Legal Research/Writing I	2	2	0	3
This course introduces the techniques of legal research and writing. Emphasis is placed on locating, analyzing, applying, and updating sources of law; effective legal writing, including proper citation; and the use of electronic research methods. Upon completion, students should be able to perform legal research and writing assignments using techniques covered in the course. Co-requisite: LEX 110.						
LEX	121	Legal Research/Writing II	2	2	0	3
This course covers advanced topics in legal research and writing. Topics include more complex legal issues and assignments involving preparation of legal memos, briefs, and other documents and the advanced use of electronic research methods. Upon completion, students should be able to perform legal research and writing assignments using techniques covered in the course. Pre-requisite: LEX 120 .						

LEX	130	Civil Injuries	3	0	0	3
This course covers traditional tort concepts and the evolving body of individual rights created by statute. Topics include intentional and non-intentional torts with emphasis on negligence, strict liability, civil rights, workplace and environmental liability, remedies, and damages. Upon completion, students should be able to recognize, explain, and evaluate elements of civil injuries and related defenses. Pre-requisite: LEX 120.						
LEX	140	Civil Litigation I	3	0	0	3
This course introduces the structure of the legal system and the rules governing civil litigation. Topics include jurisdiction state and federal rules of civil procedure and evidence. Upon completion, students should be able to assist an attorney in pre-litigation matters and preparation of pleadings and motions. Pre-requisite: LEX 120.						
LEX	141	Civil Litigation II	2	2	0	3
This course covers advanced topics in the civil litigation process. Topics include motions, discovery, and trial and appellate procedures. Upon completion, students should be able to assist an attorney in preparing and organizing documents for trial, settlement and post-trial practice. Pre-requisite: LEX 140 .						
LEX	150	Commercial Law I	2	2	0	3
This course covers legally enforceable agreements, forms of organization, and selected portions of the Uniform Commercial Code. Topics include drafting and enforcement of contracts, leases, and related documents and selection and implementation of business organization forms, sales, and commercial papers. Upon completion, students should be able to apply the elements of a contract, prepare various business documents, and understand the role of commercial paper. Pre-requisite: LEX 120.						
LEX	151	Commercial Law II	3	0	0	3
This course is a continuation of LEX 150 and covers advanced topics in Business and Commercial Law. Topics include agency and employment, insurance, computer law, intellectual property, personal property and bailment, corporate organizations and bankruptcy. Upon completion, students will understand and be able to apply legal principles governing these topics and be able to draft a variety of financial instruments. Pre-requisite: LEX 150 .						
LEX	160	Criminal Law and Procedure	2	2	0	3
This course introduces substantive criminal law and procedural rights of the accused. Topics include elements of state/federal crimes, defenses, constitutional issues, pre-trial and trial process, and other related topics. Upon completion, students should be able to explain elements of specific crimes and assist an attorney in preparing a criminal case. Pre-requisite: LEX 120.						
LEX	170	Administrative Law	2	0	0	2
This course covers the scope, authority, and regulatory operations of various federal, state, and local administrative agencies. Topics include social security, worker's compensation, unemployment, zoning, and other related topics. Upon completion, students should be able to research sources of administrative law, investigate, and assist in representation of clients before administrative agencies. Pre-requisite: LEX 120.						
LEX	180	Case Analysis & Reasoning	1	2	0	2
This course covers the techniques of reading and applying legal opinions and the skills of case analysis. Emphasis is placed on the components of opinions and on types of legal writing. Upon completion, students should be able to read, analyze, and brief opinions and prepare legal memoranda, briefs, and other legal documents. Co-requisite: LEX 120 .						
LEX	210	Real Property I	3	0	0	3
This course introduces the study of real property law. Topics include the distinction between real and personal property, various estates, mechanics of conveyance and encumbrance, recordation, special proceedings, and other related topics. Upon completion, students should be able to identify estates, forms of deeds, requirements for recording, and procedures to enforce rights to real property. Pre-requisite: LEX 120.						
LEX	211	Real Property II	1	4	0	3
This course continues the study of real property law relating to title examination and preparation of closing documents. Topics include use of courthouse and other public records in title examination and preparation of documents required in real estate transactions and closings. Upon completion, students should be able to plot/draft a description, perform complete title examination, draft closing documents including title insurance forms, and prepare disbursement reconciliation. Pre-requisite: LEX 210 .						

LEX 214	Investigation & Trial Prep	1	4	0	3
This course introduces the fundamentals of investigation. Topics include compiling/assembling data for cases; investigative planning/information gathering techniques; locating/interviewing witnesses; collection/preserving/evaluating sufficiency/admissibility of evidence; preparation of reports; and evidence presentation at depositions/court proceeding. Upon completion, students should be able to plan/use investigative checklists, understand/demonstrate investigative techniques, prepare reports, and enhance verbal and interpersonal communications skills and interviewing techniques. Pre-requisite: LEX 120.					
LEX 220	Corporate Law	2	0	0	2
This course covers the legal aspects of forming, operating, and maintaining a business. Emphasis is placed on the business corporation with additional coverage of sole proprietorships and partnerships. Upon completion, students should be able to draft basic partnership and corporate documents and file these documents as required. Pre-requisite: LEX 120.					
LEX 240	Family Law	3	0	0	3
This course covers laws governing domestic relations. Topics include marriage, separation, divorce, child custody, support, property division, adoption, domestic violence, and other related topics. Upon completion, students should be able to interview clients, gather information, and draft documents related to family law. Pre-requisite: LEX 120.					
LEX 250	Wills, Estates and Trusts	2	2	0	3
This course covers various types of wills, trusts, probate, estate administration, and intestacy. Topics include types of wills and execution requirements, caveats and dissents, intestate succession, inventories and accountings, distribution and settlement, and other related topics. Upon completion, students should be able to draft simple wills, prepare estate forms, understand administration of estates including taxation, and explain terms regarding trusts. Pre-requisite: LEX 120.					
LEX 260	Bankruptcy and Collections	3	0	0	3
This course provides an overview of the laws of bankruptcy and the rights of creditors and debtors. Topics include bankruptcy procedures and estate management, attachment, claim and delivery, repossession, foreclosure, collection, garnishment, and post-judgment collection procedure. Upon completion, students should be able to prepare and file bankruptcy forms, collection letters, statutory liens, and collection of judgments. Pre-requisite: LEX 120.					
LEX 270	Law Office Mgt/Technology	1	2	0	2
This course provides an overview of law office management and organization. Topics include office forms, filing systems, billing/time keeping, computer systems, calendar systems, library administration, case management, office/personnel procedures, ethics, and technology. Upon completion, students should be able to set up and maintain various law office systems, monitor case progress, and supervise non-lawyer personnel. Pre-requisite: LEX 120.					
LEX 271	Law Office Writing	1	2	0	2
This course covers the basics of writing for the law office including the drafting of general correspondence, the briefing of cases, and the preparation of settlement brochures. Emphasis is placed on legal vocabulary in the context of letter writing, briefing judicial opinions, and the preparation of the settlement brochure. Upon completion, students should be able to draft letters to clients, opposing counsel, government entities, and insurance companies and prepare the settlement brochure. Pre-requisite: LEX 120.					
LEX 280	Ethics and Professionalism	2	0	0	2
This course reinforces legal ethics and the role of the paralegal in a professional work environment. Topics include a review of ethics, employment opportunities, and search techniques; paralegal certification and other related topics. Upon completion, students should be able to understand the paralegal's role in the ethical practice of law. Pre-requisite: LEX 120.					
LEX 283	Investigation	1	2	0	2
This course covers various aspects of civil and criminal investigation. Topics include locating witnesses, interviewing techniques, obtaining records, sketching and photographing accident scenes, collecting and preserving evidence, and preparation of exhibits for trial. Upon completion, students should be able to locate witnesses, prepare questionnaires, interview witnesses, obtain criminal/motor vehicle/medical/accident records, sketch scenes, and prepare exhibits. Pre-requisite: LEX 120.					
LEX 285	Workers' Comp Law	2	0	0	2
This course covers the process of initiating and handling workers' compensation claims. Emphasis is placed on reviewing and drafting relevant Industrial Commission forms. Upon completion, students should be able to interview clients, gather information, and draft documents related to workers' compensation claims.					

LEX	286	Medical Evidence Analysis	1	2	0	2
This course is designed to teach reading and analyzing medical records for legal evaluation of bodily injury and disability claims. Emphasis is placed on terminology, identifying, obtaining and reviewing medical records and study of the major systems of the human body. Upon completion, students will be able to compile, analyze and organize medical documents to support or disprove injury claims. Pre-requisite: LEX 120.						
LEX	288	Elder Law	3	0	0	3
This course provides an overview of laws especially relevant to older persons. Topics include healthcare decision-making, living wills, powers of attorney, financial and estate planning, government benefits, housing issues, elder abuse, and ethical considerations. Upon completion, students should be able to assist an attorney in addressing legal issues pertinent to the elderly.						

Logistics (LOG)

LOG	110	Introduction to Logistics	3	0	0	3
This course provides an overview of logistics. Topics include traffic management, warehousing, inventory control, material handling, global logistics, and the movement and storage of goods from raw materials sources to end consumers. Upon completion, students should be able to identify the different segments of logistics and use the terminology of the industry.						
LOG	125	Transportation Logistics	3	0	0	3
This course covers the role and importance of the transportation industry. This is an overview of transportation emphasizing its environmental and sociological aspects, economic impact, services, regulatory guidelines, policies, and its future. Upon completion, students should be able to identify modes of transportation, interpret governing regulations, and describe the principles and terminology used in the transportation industry.						
LOG	211	Distribution Management	2	2	0	3
This course covers the functions, techniques, and tools utilized in warehousing and distribution centers and their role in business and logistics. Emphasis is placed on warehouse and distribution center management, operations, productivity, software systems, picking, automation, cross docking, safety, security, material handling, benchmarking, and cost. Upon completion, students should be able to describe the role of warehouses and distribution centers, apply industry principles and terminology, and understand distribution productivity measures. Pre-requisite: LOG 110 .						
LOG	215	Supply Chain Management	3	0	0	3
This course covers all activities involved in the flow of products and information between the suppliers, customers, producers, and service providers. Topics include acquiring, purchasing, manufacturing, assembling, and distributing goods and services throughout the supply chain organizations. Upon completion, students should be able to identify the supply chain units, describe the materials management processes, and prepare for the APICS CPIM examination. Pre-requisite: LOG 110 .						
LOG	235	Import/Export Management	3	0	0	3
This course introduces the elements of import and export operations, from transportation to documentation, finance, and security and the effects on the global supply chain. Emphasis is placed on existing import/export regulations, customs documentation, intermodal transportation, foreign freight forwarders, global technology, and homeland security initiatives. Upon completion, students should be able to perform import/export operations, channels of distribution, implemented technologies, and associate with operating a secure supply chain. Pre-requisite: LOG 125 .						
LOG	240	Purchasing Logistics	3	0	0	3
This course introduces the various aspects of purchasing, and their impact on materials management, supply chain, transportation, and global logistics processes. Emphasis is placed on the different methods of electronic sourcing, negotiating and pricing principles, and on the internal and external considerations associated with international logistics. Upon completion, students should be able to describe and apply the principles and terminology used in procurement including electronic data interchange services, purchasing and logistics systems. Pre-requisite: LOG 110 .						
LOG	250	Advanced Global Logistics	3	2	0	4
This course covers the advanced application of global operations and logistics strategies, planning, technology, risk, and management necessary to cope with the global business environment. Emphasis is placed on an in-depth understanding of global sourcing, shipping, tracking, and e-logistics systems necessary to operate inbound/outbound logistics in a global market. Upon completion, students should be able to identify the different global markets and logistics technology available to process International inbound/outbound logistics transactions. Pre-requisite: LOG 125 .						

Landscape Gardening (LSG)

LSG	123	Summer Gardening Lab	0	6	0	2
This course provides basic hands-on experience in summer gardening techniques. Emphasis is placed on pruning, irrigation, planting, fertilizing, pest control, equipment operation, turf maintenance, landscape construction, and maintaining fruits and vegetables. Upon completion, students should be able to perform various techniques essential to maintaining the summer landscape.						
LSG	231	Landscape Supervision	2	6	0	4
This course provides experience in planning, implementing, and supervising various landscape management projects. Emphasis is placed on supervisory skills, organizing, and scheduling. Upon completion, students should be able to supervise employees in various landscape management jobs. Pre-requisites: LSG 123 and HOR 260 .						

Machining (MAC)

MAC	111	Machining Technology I	2	12	0	6
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. Pre-requisites: (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050) and [RED 080, ENG 085, or (EFL 074, EFL 084, and EFL 094)]. Co-requisites: MAC 114 and BPR 111.						
MAC	112	Machining Technology II	2	12	0	6
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. Pre-requisite: MAC 111.						
MAC	113	Machining Technology III	2	12	0	6
This course provides an introduction to advanced and special machining operations. Emphasis is placed on working to specified tolerances with special and advanced setups. Upon completion, students should be able to produce a part to specifications. Pre-requisite: MAC 112.						
MAC	114	Introduction to Metrology	2	0	0	2
This course introduces the care and use of precision measuring instruments. Emphasis is placed on the inspection of machine parts and use of a wide variety of measuring instruments. Upon completion, students should be able to demonstrate the correct use of measuring instruments. Pre-requisites: (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050) and [RED 080, ENG 085, or (EFL 074, EFL 084, and EFL 094)].						
MAC	115	Grinding Operations	2	2	0	3
This course introduces surface and cylindrical grinding in the toolroom. Topics include safety and the basic setup and operation of surface and cylindrical grinding machines. Upon completion, students should be able to grind steps, slots, angles, radii, dress grinding wheels, and square blocks. Pre-requisites: MAC 114 and MAC 112.						
MAC	121	Introduction to CNC	2	0	0	2
This course introduces the concepts and capabilities of computer numerical control machine tools. Topics include setup, operation, and basic applications. Upon completion, students should be able to explain operator safety, machine protection, data input, program preparation, and program storage. Pre-requisites: (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050) and [RED 080, ENG 085, or (EFL 074, EFL 084, and EFL 094)]. Co-requisite: DFT 119.						
MAC	122	CNC Turning	1	3	0	2
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. Pre-requisite: MAC 111 or MEC 111. Co-requisite: MAC 121.						

MAC	124	CNC Milling	1	3	0	2
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. Pre-requisite: MAC 111 or MEC 111. Co-requisite: MAC 121.						
MAC	151	Machining Calculations	1	2	0	2
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. Pre-requisites: (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050) and [RED 080, ENG 085, or (EFL 074, EFL 084, and EFL 094)].						
MAC	214	Machining Technology IV	2	12	0	6
This course provides advanced applications and practical experience in the manufacturing of complex parts. Emphasis is placed on inspection, gaging, and the utilization of machine tools. Upon completion, students should be able to manufacture complex assemblies to specifications. Pre-requisite: MAC 113.						
MAC	222	Advanced CNC Turning	1	3	0	2
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. Pre-requisite: MAC 122.						
MAC	224	Advanced CNC Milling	1	3	0	2
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. Pre-requisite: MAC 124.						
MAC	229	CNC Programming	2	0	0	2
This course provides concentrated study in advanced programming techniques for working with modern CNC machine tools. Topics include custom macros and subroutines, canned cycles, and automatic machining cycles currently employed by the machine tool industry. Upon completion, students should be able to program advanced CNC functions while conserving machine memory. Pre-requisite: MAC 121, MAC 122, MAC 124, or MAC 226.						
MAC	248	Production Procedures	1	2	0	2
This course covers product planning and control and scheduling and routing of operations. Topics include cost-effective production methods, dimensional and statistical quality control, and the tooling and machines required for production. Upon completion, students should be able to plan, set up, and produce cost-effective quality machined parts. Pre-requisite: MAC 121.						

Mathematics (MAT)

MAT	101	Applied Mathematics I	2	2	0	3
This course is a comprehensive review of arithmetic with basic algebra designed to meet the needs of certificate and diploma programs. Topics include arithmetic and geometric skills used in measurement, ratio and proportion, exponents and roots, applications of percent, linear equations, formulas, and statistics. Upon completion, students should be able to solve practical problems in their specific areas of study. This course is intended for certificate and diploma programs. Pre-requisite: (DMA 010, DMA 020, and DMA 030).						
MAT	110	Mathematical Measurement	2	2	0	3
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. Pre-requisites: [RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094)] and a grade of C or better in one of the following courses: (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050), MAT 120 , MAT 121 , MAT 161 , MAT 171 , or MAT 175 .						

MAT 115	Mathematical Models	2	2	0	3

This course develops the ability to utilize mathematical skills and technology to solve problems at a level found in non-mathematics-intensive programs. Topics include applications to percent, ratio and proportion, formulas, statistics, functional notation, linear functions and their groups, probability, sampling techniques, scatter plots, and modeling. Upon completion, students should be able to solve practical problems, reason and communicate with mathematics, and work confidently, collaboratively, and independently. Pre-requisites: [RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094)] and a grade of C or better in one of the following courses: (**DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050**), **MAT 120, MAT 121, MAT 161, MAT 171, or MAT 175**.

MAT 120	Geometry and Trigonometry	2	2	0	3

This course introduces the concepts of plane trigonometry and geometry with emphasis on applications to problem solving. Topics include the basic definitions and properties of plane and solid geometry, area and volume, right triangle trigonometry, and oblique triangles. Upon completion, students should be able to solve applied problems both independently and collaboratively using technology. Pre-requisites: [RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094)] and a grade of C or better in one of the following courses: (**DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050**), **MAT 121, MAT 161, MAT 171, or MAT 175**.

MAT 121	Algebra/Trigonometry I	2	2	0	3

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. Pre-requisites: [RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094)] and a grade of C or better in (**DMA 010, DMA 020, DMA 030, DMA 040, DMA 050, and DMA 060**).

MAT 122	Algebra/Trigonometry II	2	2	0	3

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. Pre-requisites: [RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094)] and C or better in **MAT 121, MAT 161, MAT 171, or MAT 175**.

MAT 140	Survey of Mathematics	3	0	0	3

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.* Pre-requisites: [RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094)] and a grade of C or better in one of the following courses: (**DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050**), **MAT 120, MAT 121, MAT 161, MAT 171, or MAT 175**.

MAT 140A	Survey of Mathematics Lab	0	2	0	1

This course is a laboratory for MAT 140. 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.* Pre-requisite: (**DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050**), **MAT 120, MAT 121, MAT 161, MAT 171, or MAT 175**. Co-requisite: **MAT 140**.

MAT 151	Statistics I	3	0	0	3

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).* Pre-requisites: [RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094)] and (DMA 010, DMA 020, DMA 030, DMA 040, DMA 050, DMA 060, DMA 070, and DMA 080) or a C or better in **MAT 120, MAT 121, MAT 140, MAT 161, MAT 171, or MAT 175**.

MAT 151A	Statistics I Lab	0	2	0	1

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.* Pre-requisite: (DMA 010, DMA 020, DMA 030, DMA 040, DMA 050, DMA 060, DMA 070, and DMA 080) or a C or better in **MAT 120, MAT 121, MAT 140, MAT 161, MAT 171, or MAT 175**. Co-requisite: **MAT 151**.

MAT 161	College Algebra	3	0	0	3
This course provides an integrated technological approach to algebraic topics used in problem solving. Emphasis is placed on equations and inequalities; polynomial, 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. <i>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.</i> Pre-requisites: [RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094)] and (DMA 010, DMA 020, DMA 030, DMA 040, DMA 050, DMA 060, DMA 070, and DMA 080).					
MAT 161A	College Algebra Lab	0	2	0	1
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: (DMA 010, DMA 020, DMA 030, DMA 040, DMA 050, DMA 060, DMA 070, and DMA 080). Co-requisite: MAT 161 .					
MAT 171	Precalculus Algebra	3	0	0	3
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 prediction. <i>This course has been approved for transfer under the CAA as a general education course in Mathematics.</i> Pre-requisites: [RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094)] and (DMA 010, DMA 020, DMA 030, DMA 040, DMA 050, DMA 060, DMA 070, and DMA 080) or a grade of C or better in MAT 161 .					
MAT 171A	Precalculus Algebra Lab	0	2	0	1
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: (DMA 010, DMA 020, DMA 030, DMA 040, DMA 050, DMA 060, DMA 070, and DMA 080) or MAT 161 . Co-requisite: MAT 171 .					
MAT 172	Precalculus Trigonometry	3	0	0	3
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. <i>This course has been approved for transfer under the CAA as a general education course in Mathematics.</i> Pre-requisites: [RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094)] and C or better in MAT 171 .					
MAT 172A	Precalculus Trigonometry Lab	0	2	0	1
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: MAT 171 . Co-requisite: MAT 172 .					
MAT 175	Precalculus	4	0	0	4
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. <i>This course has been approved for transfer under the CAA as a general education course in Mathematics.</i> Pre-requisites: [RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094)] and either MAT 161 or MAT 171 or score greater than or equal to 50 on the College Algebra Section of the Compass Test.					
MAT 175A	Precalculus Lab	0	2	0	1
This course is a laboratory for MAT 175. Emphasis is placed on experiences that enhance the materials presented in the class. Upon completion, students should be able to solve problems, apply critical thinking, work in teams, and communicate effectively. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Co-requisite: MAT 175 .					
MAT 223	Applied Calculus	2	2	0	3
This course provides an introduction to the calculus concepts of differentiation and integration by way of application and is designed for engineering technology students. Topics include limits, slope, derivatives, related rates, areas, integrals, and applications. Upon completion, students should be able to demonstrate an understanding of the use of calculus and technology to solve problems and to analyze and communicate results. Pre-requisites: [RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094)] and C or better in MAT 122 .					

MAT	263	Brief Calculus	3	0	0	3

This course is designed for students needing only one semester of calculus. Topics include functions, graphing, differentiation, and integration with emphasis on applications drawn from business, economics, and biological and behavioral sciences. Upon completion, students should be able to demonstrate an understanding of the use of basic calculus and technology to solve problems and to analyze and communicate results. *This course has been approved for transfer under the CAA as a general education course in Mathematics.* Pre-requisites: [RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094)] and C or better in **MAT 161, MAT 171, or MAT 175.**

MAT	271	Calculus I	3	2	0	4

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.* Pre-requisite: (RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094)) and C or better in **MAT 172 or MAT 175.**

MAT	272	Calculus II	3	2	0	4

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.* Pre-requisite: (RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094)) and C or better in **MAT 271.**

MAT	273	Calculus III	3	2	0	4

This course covers the calculus of several variables and is the 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 for transfer under the CAA as a general education course in Mathematics.* Pre-requisite: (RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094)) and C or better in **MAT 272.**

MAT	280	Linear Algebra	2	2	0	3

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 general education course in Mathematics.* Pre-requisite: C or better in **MAT 271.**

MAT	285	Differential Equations	3	0	0	3

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.* Pre-requisite: [RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094)] and C or better in **MAT 272.**

Mechanical (MEC)

MEC	110	Introduction to CAD/CAM	1	2	0	2

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. Pre-requisites: DFT 119 or MAC 121, (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050), and [RED 080, ENG 085, or (EFL 074, EFL 084, and EFL 094)].

MEC	111	Machine Processes I	1	4	0	3

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 manufacture simple parts to specified tolerance. Pre-requisites: (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050) and [RED 080, ENG 085, or (EFL 074, EFL 084, and EFL 094)].

MEC 130	Mechanisms	2	3	0	3
This course introduces the purpose and action of various mechanical devices. Topics include cams, cables, gear trains, differentials, screws, belts, pulleys, shafts, levers, lubricants, and other devices. Upon completion, students should be able to analyze, maintain, and troubleshoot the components of mechanical systems.					
MEC 142	Physical Metallurgy	1	2	0	2
This course covers the heat treating of metals. Emphasis is placed on the effects of hardening, tempering, and annealing on the structure and physical properties of metals. Upon completion, students should be able to heat treat materials. Pre-requisites: (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050) and [RED 080, ENG 085, or (EFL 074, EFL 084, and EFL 094)].					
MEC 145	Manufacturing Materials I	2	3	0	3
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 151	Mechanical Mfg Systems	1	3	0	2
This course covers mechanical systems and sub-systems including timing cams, cam followers, timing belts, servo-motors, mechanical drive units, bearings, and mechanical linkage. Emphasis will be placed on the understanding of these components and their integration into operating systems. Upon completion, students should be able to diagnose mechanical problems using a structured approach to troubleshooting mechanical systems and sub-systems.					
MEC 231	Computer-Aided Manufacturing I	1	4	0	3
This course introduces computer-aided design/manufacturing (CAD/CAM) applications and concepts. Topics include software, programming, data transfer and verification, and equipment setup. Upon completion, students should be able to produce parts using CAD / CAM applications. Pre-requisite: MAC 121 or MEC 110.					
MEC 232	Computer-Aided Manufacturing II	1	4	0	3
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. Pre-requisite: MEC 231 .					
MEC 265	Fluid Mechanics	2	2	0	3
This course covers the physical behavior of fluids and fluid systems. Topics include fluid statics and dynamics, laminar and turbulent flow, Bernoulli's Equation, components, applications, and other related topics. Upon completion, students should be able to apply fluid power principles to practical applications. Pre-requisite: PHY 131.					
MEC 267	Thermal Systems	2	2	0	3
This course introduces the fundamental laws of thermodynamics. Topics include work and energy, open and closed systems, and heat engines. Upon completion, students should be able to demonstrate a knowledge of the laws and principles that apply to thermal power. Pre-requisite: PHY 131 or PHY 151 .					
MEC 276	Capstone Design Project	0	3	0	1
This course provides an opportunity for students to utilize all facets of their educational experience to solve an engineering design problem in a multi-disciplinary environment. Competencies demonstrated include project planning and organization, engineering analysis and design, selection of materials and processes, economic analysis, communication, and project documentation. Upon completion, students should be able to demonstrate the ability to complete a comprehensive design project, concluding with a formal report. Prerequisite: MEC 250 and DFT 154.					
MEC 287	Applied Mfg Operations	0	4	0	2
This course covers techniques used for maintaining and improving integrated manufacturing processes. Emphasis is placed on process setup, troubleshooting, improving machine run time, operation and application of system components to reduce or eliminate product defects and protect vital machine systems. Upon completion, students should be able to recommend basic improvements to a manufacturing process. This course is a unique concentration requirement in the Integrated Operations concentration in the Manufacturing Technology program. Pre-requisites: MEC 115 , MEC 150 , and MEC 151 .					

Medical Assisting (MED)

MED 110	Orientation to Medical Assisting	1	0	0	1
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. Pre-requisite: Admission to the Medical Assisting Program.					
MED 114	Professional Interaction in Health Care I		0	0	1
This course is designed to identify various patient behaviors encountered in the medical setting. Emphasis is placed on stressors related to illness, cultural influences, death and dying, and needs specific to patients. Upon completion, students should be able to utilize appropriate methods of verbal and nonverbal communication with empathy and impartiality. Pre-requisite: Admission in the Medical Assisting program.					
MED 116	Introduction to Anatomy & Physiology 3		2	0	4
This course introduces basic anatomy and physiology. Emphasis is placed on the relationship between body structure and function and the procedures common to health care. Upon completion, students should be able to identify body system components and functions relating this knowledge to the delivery of health care.					
MED 118	Medical Law and Ethics	2	0	0	2
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. Pre-requisite: Admission to the Medical Assisting Program.					
MED 121	Medical Terminology I	3	0	0	3
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. Pre-requisite: Admission to the Medical Assisting Program.					
MED 122	Medical Terminology II	3	0	0	3
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. Pre-requisite: Admission in the Medical Assisting program and MED 121 .					
MED 130	Administrative Office Procedures I	1	2	0	2
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. Pre-requisite: Admission to the Medical Assisting Program.					
MED 131	Administrative Office Procedures II	1	2	0	2
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. Pre-requisite: MED 130 and Admission to the Medical Assisting Program.					
MED 140	Exam Room Procedures I	3	4	0	5
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. Pre-requisite: Admission to the Medical Assisting Program.					
MED 150	Laboratory Procedures I	3	4	0	5
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. Pre-requisite: Admission to the Medical Assisting Program.					

MED 232	Medical Insurance Coding	1	3	0	2

This course is designed to develop coding skills. Emphasis is placed on advanced diagnostic and procedural coding in the outpatient facility. Upon completion, students should be able to demonstrate proficiency in coding for reimbursement. Students will demonstrate this proficiency in the inpatient facility as well. This course is intended to prepare students for coding for reimbursement in the medical office (inpatient facility, as well) environment and also prepare for the CPC exam. Pre-requisites: C or better in OST 247 and OST 248.

MED 240	Exam Room Procedures II	3	4	0	5

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. Pre-requisite: Admission to the Medical Assisting Program and MED 140.

MED 260	MED Clinical Practicum	0	0	15	5

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. Pre-requisite: Admission to the Medical Assisting Program.

MED 262	Clinical Perspectives	1	0	0	1

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. Pre-requisite: Admission to the Medical Assisting Program.

MED 264	Medical Assisting Overview	2	0	0	2

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. Pre-requisite: Admission in the Medical Assisting Program.

MED 270	Symptomatology	2	2	0	3

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. Pre-requisite: Admission to the Medical Assisting Program.

MED 272	Drug Therapy	3	0	0	3

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. Pre-requisite: Admission to the Medical Assisting Program and MED 140.

MED 274	Diet Therapy/Nutrition	3	0	0	3

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. Pre-requisite: Admission to the Medical Assisting Program.

MED 276	Patient Education	1	2	0	2

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. Pre-requisite: Admission to the Medical Assisting Program.

Mental Health (MHA)

MHA	150	Mental Health Systems	3	0	0	3

This course introduces the treatment and services available at both public and private mental health facilities. Topics include intake procedures, admission criteria, history, and the structure of mental health facilities. Upon completion, students should be able to demonstrate competence in articulating both the theory and practice of mental health services delivery. *This course is a unique concentration requirement of the Mental Health concentration in the Human Services Technology program.* Pre-requisite: **HSE 110**.

MHA	155	Psychological Assessment	3	0	0	3

This course covers psychological assessment. Emphasis is placed on different types of psychological tests. Upon completion, students should be able to recognize and understand the purpose of various psychological tests. *This course is a unique concentration requirement of the Mental Health concentration in the Human Services Technology program.* Pre-requisites: **PSY 150** and **HSE 125**.

MHA	240	Advocacy	2	0	0	2

This course covers the roles and duties of the client advocate. 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 contact initiation to termination. *This course is a unique concentration requirement of the Mental Health concentration in the Human Services Technology program.* Pre-requisite: **HSE 110**.

Marketing and Retailing (MKT)

MKT	120	Principles of Marketing	3	0	0	3

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	0	3

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	123	Fundamentals of Selling	3	0	0	3

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. Prerequisite: (ENG 090 and RED 090) or ENG 095.

MKT	224	International Marketing	3	0	0	3

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	231	Healthcare Marketing	3	0	0	3

This is designed to help students gain an understanding of how the principles of marketing are used in a healthcare setting. Topics include market development, market segmentation, market research, advertising and promotion, and service development for healthcare marketing. Upon completion, students should be able to plan, develop, and implement a basic marketing plan for an institution within the healthcare industry. Pre-requisite: **MKT 120**.

Maintenance (MNT)

MNT	110	Intro to Maintenance Procedures	1	3	0	2

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	250	PLC Interfacing	2	4	0	4

This course introduces touch screens, PLC interface devices, and PID loops for applications such as motion control, encoders, and stepping motors. Topics include IVDT control, touch screens, PID controls, and motion controls. Upon completion, students should be able to safely install, program, and maintain touch screens and other interface devices. Prerequisite: **ELC 128**.

MNT	263	Electro-Pneumatic Components	2	4	0	4

This course introduces principles and practical applications of electrical/pneumatic control systems, and primary control devices incorporated in those systems. Emphasis is placed on reading and interpreting ladder diagrams, building control circuits, and troubleshooting valves, switches, and sensors. Upon completion, students should be able to design, build, and troubleshoot basic electro-pneumatic control systems. Pre-requisites: ELC 112 and HYD 110.

Music (MUS)

MUS	110	Music Appreciation	3	0	0	3

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 for transfer under the CAA as a general education course in Humanities/Fine Arts.* Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).

MUS	111	Fundamentals of Music	3	0	0	3

This course is an introductory course for students with little or no music background. Emphasis is placed on music notation, rhythmic patterns, scales, key signatures, intervals, and chords. Upon completion, students should be able to demonstrate an understanding of the rudiments of music. This course has been approved for transfer under the CAA as a premajor and/or elective course requirement. Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).

MUS	112	Introduction to Jazz	3	0	0	3

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 for transfer under the CAA as a general education course in Humanities/Fine Arts.* Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).

MUS	121	Music Theory I	3	2	0	4

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 for transfer under the CAA as a premajor and/or elective course requirement.*

MUS	122	Music Theory II	3	2	0	4

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 for transfer under the CAA as a premajor and/or elective course requirement.* Pre-requisite: C or better in **MUS 121**.

MUS 141	Ensemble I	0	2	0	1
This course provides an opportunity to perform in any combination of instrumental, vocal, or keyboard groups of two or more. Emphasis is placed on the development of performance skills and the study of a variety of styles and periods of ensemble literature. Upon completion, students should be able to demonstrate skills needed to participate in ensemble playing leading to performance. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: Audition.					
MUS 142	Ensemble II	0	2	0	1
This course is a continuation of MUS 141. Emphasis is placed on the development of performance skills and the study of a variety of styles and periods of ensemble literature. Upon completion, students should be able to demonstrate skills needed to participate in ensemble playing leading to performance. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: C or better in MUS 141 .					
MUS 151	Class Music I	0	2	0	1
This course provides group instruction in skills and techniques of the particular instrument or voice for those with little or no previous experience. Emphasis is placed on techniques and styles and the exploration and study of appropriate literature. Upon completion, students should be able to demonstrate proficiency in the studied skills and repertoire through performance. Colleges may use a letter suffix to designate a specific instrument or voice, for example MUS 151P for piano. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i>					
MUS 152	Class Music II	0	2	0	1
This course is a continuation of MUS 151. Emphasis is placed on techniques and styles and the exploration and study of appropriate literature. Upon completion, students should be able to demonstrate proficiency in the studied skills and repertoire through performance. Colleges may use a letter suffix to designate a specific instrument or voice, for example MUS 152P for piano. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: C or better in MUS 151 .					
MUS 210	History of Rock Music	3	0	0	3
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. <i>This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.</i>					
MUS 214	Electronic Music I	1	2	0	2
This course provides an opportunity to study and explore various electronic instruments and devices. Emphasis is placed on fundamental MIDI applications and implementation, features and application of sequences, sound modules, and digital keyboards. Upon completion, students should be able to demonstrate proficiency by creation of appropriate musical projects using the equipment and techniques covered. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: C or better in MUS 111 .					
MUS 215	Electronic Music II	1	2	0	2
This course is a continuation of MUS 214. Emphasis is placed on advanced MIDI applications and implementation and continued work with sequencers, sound modules, and digital keyboards. Upon completion, students should be able to demonstrate proficiency by creation of appropriate musical projects using the equipment and techniques covered. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: C or better in MUS 214 .					
MUS 221	Music Theory III	3	2	0	4
This course is a continuation of MUS 122. Emphasis is placed on altered and chromatic harmony, common practice era compositional techniques and forms, and continued studies in part-writing, ear-training, and sight-singing. Upon completion, students should be able to demonstrate proficiency in the recognition and application of the above. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: C or better in MUS 122 .					
MUS 222	Music Theory IV	3	2	0	4
This course is a continuation of studies begun in MUS 221. Emphasis is placed on continued study of common practice era compositional techniques and forms, 20th century practices, ear-training, and sight-singing. Upon completion, students should be able to demonstrate proficiency in the recognition and application of the above. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: C or better in MUS 221 .					

MUS	241	Ensemble III	0	2	0	1

This course is a continuation of MUS 142. Emphasis is placed on the development of performance skills and the study of a variety of styles and periods of ensemble literature. Upon completion, students should be able to demonstrate skills needed to participate in ensemble playing leading to performance. *This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.* Pre-requisite: C or better in **MUS 142**.

MUS	242	Ensemble IV	0	2	0	1

This course is a continuation of MUS 241. Emphasis is placed on the development of performance skills and the study of styles of ensemble literature. Upon completion, students should be able to demonstrate skills needed to participate in ensemble playing leading to performance. *This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.* Pre-requisite: C or better in **MUS 241**.

Networking Technology (NET)

NET	110	Networking Concepts	2	2	0	3

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. Pre-requisite: (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050). Co-requisite: CIS 110.

NET	111	Internetwork Arch & Design	2	2	0	3

This course introduces the physical and logical design of local area networks, wide area networks, and networking devices used in the design implementation and integration. Topics include LAN segmentation, VLANs, IP addressing, router, switch, and server placement with an emphasis on design. Upon completion, students should be able to understand fundamental LAN and WAN design and the physical and logical aspects needed to achieve the design goal. Pre-requisite: **CIS 282** or **NET 110**.

NET	125	Networking Basics	1	4	0	3

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. Pre-requisites: [RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094)] and (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050).

NET	126	Routing Basics	1	4	0	3

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. Pre-requisite: **NET 125**.

NET	130	Convergence Concepts	2	2	0	3

This course provides an introduction to designing, implementing, and managing data, voice, and multimedia convergence applications. Topics include telephony, converged networks, convergence applications, converged network hardware and architecture, converged network management and converged network security. Upon completion, students should be able to demonstrate an understanding of the tasks related to converging data, voice and multimedia networks.

NET	175	Wireless Technology	2	2	0	3

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. Pre-requisite: **NET 110** or **NET 125**.

NET	225	Routing & Switching I	1	4	0	3
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. Pre-requisite: NET 126 .						
NET	226	Routing and Switching II	1	4	0	3
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. Pre-requisite: NET 225 .						
NET	273	Internetworking Support	1	4	0	3
This course covers how to baseline and troubleshoot an Internet working environment using routers and switches for multi-protocol client, host and servers. Topics include troubleshooting processes, routing and routed protocols, campus switching; and WAN troubleshooting. Upon completion, students should be able to troubleshoot Ethernet, Fast Ethernet, and Token Ring LANs; and Serial, Frame Relay, and ISDN connections. Pre-requisite: NET 226 .						
NET	289	Networking Project	1	4	0	3
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. Co-requisite: NET 226 .						

Network Operating Systems (NOS)

NOS	110	Operating System Concepts	2	3	0	3
This course introduces students to a broad range of operating system concepts, including installation and maintenance. Emphasis is place 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. Co-requisite: CIS 110.						
NOS	120	Linux/UNIX Single User	2	2	0	3
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. Pre-requisite: NOS 110 .						
NOS	130	Windows Single User	2	2	0	3
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. Pre-requisite: NOS 110 .						
NOS	150	Operating Systems - Mac	2	2	0	3
This course introduces students to a broad range of Mac operating system concepts, including installation and maintenance. Topics include operating system and application installation, configuration, and usage; file management; networking; user account configuration/management; peripheral device management; system maintenance; security; and troubleshooting. Upon completion, students should be able to perform operating system functions at the support level in a Mac environment.						
NOS	220	Linux/UNIX Admin I	2	2	0	3
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. Pre-requisite: NOS 120 .						

NOS	230	Windows Admin I	2	2	0	3

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. Pre-requisite: **NOS 130**.

NOS	231	Windows Admin II	2	2	0	3

This course covers implementing, managing, and maintaining a Windows Server network infrastructure. Topics include implementing, managing, and maintaining IP addressing, name resolution, network security, routing and remote access, and managing a network infrastructure. Upon completion, students should be able to manage and maintain a Windows Server environment. Pre-requisite: **NOS 230**.

Nursing (NUR)

NUR	101	Practical Nursing I	7	6	6	11

This course introduces concepts as related to the practical nurse's caregiver 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. Pre-requisite: Admission to Practical Nursing Program. Co-requisite: BIO 165.

NUR	102	Practical Nursing II	8	0	12	12

This course includes more advanced concepts as related to the practical nurse's caregiver 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. Pre-requisite: NUR 101. Co-requisite: BIO 166.

NUR	103	Practical Nursing III	6	0	12	10

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. Pre-requisite: NUR 102.

NUR	111	Intro to Health Concepts	4	6	6	8

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. Pre-requisite: Admission to Associate Degree Nursing. Co-requisite: BIO 165.

NUR	112	Health-Illness Concepts	3	0	6	5

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. Pre-requisite: **NUR 111**.

NUR	113	Family Health Concepts	3	0	6	5

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. Pre-requisite: **NUR 111**. Co-requisite: PSY 241 and BIO 166.

NUR	114	Holistic Health Concepts	3	0	6	5
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. Pre-requisite: NUR 111 .						
NUR	211	Health Care Concepts	3	0	6	5
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. Pre-requisite: NUR 111 .						
NUR	212	Health System Concepts	3	0	6	5
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. Pre-requisite: NUR 111 .						
NUR	213	Complex Health Concepts	4	3	15	10
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. Pre-requisite: NUR 111 . Co-requisites: NUR 112, NUR 113, NUR 114, NUR 211, and NUR 212 .						
NUR	214	Nsg Transition Concepts	3	0	3	4
This course is designed to introduce concepts within the three domains of the individual, healthcare, and nursing as the LPN transitions to the ADN role. Emphasis is placed on the concepts within each domain including evidenced- based practice, quality improvement, communication, safety, interdisciplinary team, clinical decision-making, informatics, assessment, caring, and health-wellness-illness. Upon completion, students should be able to provide safe nursing care incorporating the concepts identified in this course. Pre-requisite: Admission to Associate Degree Nursing for Returning LPNs.						

Office Administration (OST)

OST	131	Keyboarding	1	2	0	2
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.						
OST	132	Keyboard Skill Building	1	2	0	2
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. Pre-requisite: C or better in OST 131 or demonstrated proficiency.						
OST	136	Word Processing	2	2	0	3
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.						
OST	137	Office Software Applications	2	2	0	3
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 138	Advanced Software Applications	2	2	0	3
This course is designed to improve the proficiency in the utilization of software applications used in business offices through a hands-on approach. Emphasis is placed on in-depth usage of software to create a variety of documents applicable to current business environments. Upon completion, students should be able to master the skills required to design documents that can be customized using the latest software applications. Pre-requisite: C or better in OST 137 , CIS 110 , or CIS 111 .					
OST 140	Internet Comm/Research	1	2	0	2
This course provides a working knowledge of Internet usage and research for the modern office. Emphasis is placed on using search engines, email, Web sites, Web servers, communication services, and e-business to obtain information vital to the current office environment. Upon completion, students should be able to use the Internet to research any office topics required for employment.					
OST 141	Medical Terms I - Medical Office	3	0	0	3
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. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).					
OST 142	Medical Terms II - Medical Office	3	0	0	3
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. Pre-requisite: C or better in OST 141 .					
OST 143	Dental Office Terminology	3	0	0	3
This course introduces prefixes, suffixes, and word roots used in the dental office. Topics include dental anatomy and oral structures, tooth origin and formation, examination and prevention, tooth restorations, radiography, pain management and pharmacology. Upon completion, students should be able to pronounce, spell, and define dental terms as related to a dental practice.					
OST 147	Dental Billing and Coding	3	0	0	3
This course introduces Current Procedural Terminology, International Classification of Diseases, and Healthcare Common Procedural Coding System coding as they apply to dental insurance and billing. Topics include Current Dental Terminology-2 Dental Codes, office collections, American Dental Association Dental Claim Form, and insurance coverage. Upon completion, students should be able to describe the steps of the total billing/collections cycle for a dental office. Pre-requisite: OST 143 .					
OST 148	Medical Coding, Billing, & Insurance	3	0	0	3
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. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).					
OST 149	Medical Legal Issues	3	0	0	3
This course introduces the complex legal, moral, and ethical issues involved in providing health-care services. Emphasis is placed on the legal requirements of medical practices; the relationship of physician, patient, and office personnel; professional liabilities; and medical practice liability. Upon completion, students should be able to demonstrate a working knowledge of current medical law and accepted ethical behavior. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).					
OST 153	Office Finance Solutions	1	2	0	2
This course introduces basic bookkeeping concepts. Topics include entering data in accounts payable and receivable, keeping petty cash records, maintaining inventory, reconciling bank statements, running payroll, and generating simple financial reports. Upon completion, students should be able to demonstrate competence in the entry and manipulation of data to provide financial solutions for the office.					
OST 164	Text Editing Applications	3	0	0	3
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. Pre-requisites: (ENG 070 and RED 070) or (EFL 074, EFL 084, and EFL 094).					

OST 165	Adv. Text Editing Applications	2	2	0	3
This course is designed to develop proficiency in advanced editing skills needed in the office environment. Emphasis is placed on the application of creating effective electronic office documents. Upon completion, students should be able to apply advanced editing skills to compose text. Pre-requisite: C or better in OST 164 .					
OST 181	Introduction to Office Systems	2	2	0	3
This course introduces the skills and abilities needed in today's office. Topics include effectively interacting with co-workers and the public, processing simple financial and informational documents, and performing functions typical of today's offices. Upon completion, students should be able to display skills and decision-making abilities essential for functioning in the total office context.					
OST 184	Records Management	2	2	0	3
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 188	Issues in Office Technology	2	0	0	2
This course is designed to develop critical thinking skills concerning roles in business and how these contribute to society. Topics include an examination of social, racial, and gender issues and how they affect self-identity. Upon completion, students should be able to demonstrate an understanding of social issues in written and oral assignments.					
OST 203	Fund of Med Documentation	3	0	0	3
This course covers the information and procedures necessary for producing acceptable medical documentation. Topics include digital dictation systems; workplace security systems; the access, retrieval, and transport of medical documents; and other transcribing techniques necessary for acceptable medical documentation. Upon completion, students should be able to process medical documents in a home-based or medical facility. This course is intended for diploma programs. Co-requisites: OST 141 .					
OST 233	Office Publications Design	2	2	0	3
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. Pre-requisite: OST 136 .					
OST 236	Adv Word/ Information Pro	2	2	0	3
This course develops proficiency in the utilization of advanced word/information processing functions. Emphasis is placed on advanced word processing features. Upon completion, students should be able to produce a variety of complex business documents. Pre-requisite: C or better in OST 136 .					
OST 243	Medical Office Simulation	2	2	0	3
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. Pre-requisite: OST 148 .					
OST 247	Procedure Coding	1	2	0	2
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. Prerequisites: (OST 148 or HMT 210) and (MED 121 or OST 141).					
OST 248	Diagnostic Coding	1	2	0	2
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. Pre-requisite: (OST 148 or HMT 210) and (MED 121 or OST 141).					
OST 281	Emerging Issues in Medical Office	3	0	0	3
This course provides a comprehensive discussion of topics familiar to the health care setting. Topics include emerging issues in the health care setting. Upon completion, students should be able to demonstrate an understanding of current medical office procedures and treatments. This course is also intended to prepare students for coding for reimbursement in a hospital or outpatient facilities setting and preparation for the CPC-H exam. Pre-requisites: C or better in OST 247 and OST 248 .					

OST	284	Emerging Technologies	1	2	0	2
This course provides opportunities to explore emerging technologies. Emphasis is placed on identifying, researching, and presenting current technological topics for class consideration and discussion. Upon completion, students should be able to understand the importance of keeping abreast of technological changes that affect the office professional. Pre-requisite: OST 137.						
OST	286	Professional Development	3	0	0	3
This course covers the personal competencies and qualities needed to project a professional image in the office. Topics include interpersonal skills, health lifestyles, appearance, attitude, personal and professional growth, multicultural awareness, and professional etiquette. Upon completion, students should be able to demonstrate these attributes in the classroom, office, and society.						
OST	289	Administrative Office Management	2	2	0	3
This course provides 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. Pre-requisites: OST 164 , OST 181 and (OST 134 or OST 136).						

Process Control Instrumentation (PCI)

PCI	162	Instrumentation Controls	2	3	0	3
This course surveys industrial process control instrumentation concepts, devices, and systems. Topics include process control devices and process control applications associated with industrial instrumentation. Upon completion, students should be able to demonstrate a basic understanding of the various industrial process control and instrumentation systems. Pre-requisite: ELC 111, ELC 112, or ELC 131.						

Physical Education (PED)

PED	110	Fit and Well for Life	1	2	0	2
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).						
PED	111	Physical Fitness I	0	3	0	1
This course provides an individualized approach to physical fitness utilizing the five major components. Emphasis is placed on the scientific basis for setting up and engaging in personalized physical fitness programs. Upon completion, students should be able to set up and implement an individualized physical fitness program. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i>						
PED	112	Physical Fitness II	0	3	0	1
This course is an intermediate-level fitness class. Topics include specific exercises contributing to fitness and the role exercise plays in developing body systems. Upon completion, students should be able to implement and evaluate an individualized physical fitness program. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: PED 111 .						
PED	113	Aerobics I	0	3	0	1
This course introduces a program of cardiovascular fitness involving continuous, rhythmic exercise. Emphasis is placed on developing cardiovascular efficiency, strength, and flexibility and on safety precautions. Upon completion, students should be able to select and implement a rhythmic aerobic exercise program. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i>						

PED 114	Aerobics II	0	3	0	1
This course provides a continuation of a program of cardiovascular fitness involving rhythmic exercise. Emphasis is placed on a wide variety of aerobic activities which include cardiovascular efficiency, strength, and flexibility. Upon completion, students should be able to participate in and design a rhythmic aerobic exercise routine. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: PED 113.					
PED 117	Weight Training I	0	3	0	1
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i>					
PED 118	Weight Training II	0	3	0	1
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: PED 117.					
PED 119	Circuit Training	0	3	0	1
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i>					
PED 120	Walking for Fitness	0	3	0	1
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i>					
PED 121	Walk, Jog, Run	0	3	0	1
This course covers the basic concepts involved in safely and effectively improving cardiovascular fitness. Emphasis is placed on walking, jogging, or running as a means of achieving fitness. Upon completion, students should be able to understand and appreciate the benefits derived from these activities. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i>					
PED 122	Yoga I	0	2	0	1
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i>					
PED 123	Yoga II	0	2	0	1
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: PED 122.					
PED 128	Golf - Beginning	0	2	0	1
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i>					
PED 129	Golf - Intermediate	0	2	0	1
This course covers the more advanced phases of golf. Emphasis is placed on refining the fundamental skills and learning more advanced phases of the games such as club selection, trouble shots, and course management. Upon completion, students should be able demonstrate the knowledge and ability to play a recreational round of golf. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: PED 128.					

PED 139	Bowling - Beginning	0	2	0	1
This course introduces the fundamentals of bowling. Emphasis is placed on ball selection, grips, stance, and delivery along with rules and etiquette. Upon completion, students should be able to participate in recreational bowling. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i>					
PED 140	Bowling - Intermediate	0	2	0	1
This course covers more advanced bowling techniques. Emphasis is placed on refining basic skills and performing advanced shots, spins, pace, and strategy. Upon completion, students should be able to participate in competitive bowling. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: PED 139 .					
PED 143	Volleyball - Beginning	0	2	0	1
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i>					
PED 144	Volleyball - Intermediate	0	2	0	1
This course covers more advanced volleyball techniques. Emphasis is placed on refining skills and developing more advanced strategies and techniques. Upon completion, students should be able to participate in competitive volleyball. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: PED 143 .					
PED 145	Basketball-Beginning	0	2	0	1
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. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i>					
PED 146	Basketball-Intermediate	0	2	0	1
This course covers more advanced basketball techniques. Emphasis is placed on refining skills and developing more advanced strategies and techniques. Upon completion, students should be able to play basketball at a competitive level. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisites: PED 145 .					
PED 152	Swimming - Beginning	0	2	0	1
This course is designed for non-swimmers and beginners. Emphasis is placed on developing confidence in the water, learning water safety, acquiring skills in floating, and learning elementary strokes. Upon completion, students should be able to demonstrate safety skills and be able to tread water, back float, and use the crawl stroke for 20 yards. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i>					
PED 153	Swimming - Intermediate	0	2	0	1
This course is designed for those who have mastered basic swimming skills. Emphasis is placed on refining basic skills and learning new swim strokes. Upon completion, students should be able to demonstrate the four basic strokes, the scissors kick, the underwater swim, and other related skills. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: PED 152 .					
PED 154	Swimming for Fitness	0	3	0	1
This course introduces lap swimming, aquacises, water activities, and games. Emphasis is placed on increasing cardiovascular efficiency through aquatic exercise. Upon completion, students should be able to develop an individualized aquatic fitness program. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i>					
PED 155	Water Aerobics	0	3	0	1
This course introduces rhythmic aerobic activities performed in water. Emphasis is placed on increasing cardiovascular fitness levels, muscular strength, muscular endurance, and flexibility. Upon completion, students should be able to participate in an individually-paced exercise program. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i>					
PED 240	Advanced PE Skills	0	2	0	1
This course provides those who have mastered skills in a particular physical education area the opportunity to assist with instruction. Emphasis is placed on methods of instruction, class organization, and progressive skill development. Upon completion, students should be able to design, develop, and implement a unit lesson plan for a skill they have mastered. <i>This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.</i> Pre-requisite: Demonstrated advanced skills in the specific area of physical education.					

Philosophy (PHI)

PHI 210 History of Philosophy 3 0 0 3

This course introduces fundamental philosophical issues through an historical perspective. Emphasis is placed on such figures as Plato, Aristotle, Lao-Tzu, Confucius, Augustine, Aquinas, Descartes, Locke, Kant, Wollstonecraft, Nietzsche, and Sartre. Upon completion, students should be able to identify and distinguish among the key positions of the philosophers studied. *This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.* Pre-requisite: C or better in **ENG 111**.

PHI 215 Philosophical Issues 3 0 0 3

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 for transfer under the CAA as a general education course in Humanities/Fine Arts.* Pre-requisite: C or better in **ENG 111**.

PHI 240 Introduction to Ethics 3 0 0 3

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 for transfer under the CAA as a general education course in Humanities/Fine Arts.* Pre-requisite: C or better in **ENG 111**.

Pharmacy Technology (PHM)

PHM 110 Introduction to Pharmacy 3 0 0 3

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. Pre-requisite: Enrollment in the Pharmacy Technology Program.

PHM 111 Pharmacy Practice I 3 3 0 4

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. Pre-requisite: Enrollment in the Pharmacy Technology Program. Co-requisites: **PHM 110** and **PHM 115**.

PHM 115 Pharmacy Calculations 3 0 0 3

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. Pre-requisite: (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050) and enrollment in the Pharmacy Technology Program.

PHM 118 Sterile Products 3 3 0 4

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. Pre-requisites: **PHM 110** and **PHM 111**.

PHM 120	Pharmacology I	3	0	0	3
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. Pre-requisite: Enrollment in the Pharmacy Technology Program.					
PHM 125	Pharmacology II	3	0	0	3
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. Pre-requisite: PHM 120 .					
PHM 132	Pharmacy Clinical	0	0	6	2
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. Pre-requisite: PHM 111.					
PHM 134	Pharmacy Clinical	0	0	12	4
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. Pre-requisite: PHM 111.					
PHM 138	Pharmacy Clinical	0	0	24	8
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	0	2
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	0	4
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. Co-requisite: PHM 118 .					
PHM 155	Community Pharmacy	2	2	0	3
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	Pharmacy Dosage Forms	3	0	0	3
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 Professional Practice	2	0	0	2
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.					

PHM 265	Professional Issues	3	0	0	3
This course provides a comprehensive discussion of topics common to the practice of the pharmacy technician. Emphasis is placed on application of professional competencies including legal/ethical issues, leadership/management concepts and employability skills. Upon completion, students should be able to demonstrate competence in pharmacy workplace skills and leadership/management roles. Pre-requisite: PHM 165 .					

Physics (PHY)

PHY 110	Conceptual Physics	3	0	0	3
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. <i>This course has been approved for transfer under the CAA as a general education course in Natural Science.</i> Co-requisite: PHY 110A.					
PHY 110A	Conceptual Physics Lab	0	2	0	1
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. <i>This course has been approved for transfer under the CAA as a general education course in Natural Science.</i> Co-requisite: PHY 110 .					
PHY 121	Applied Physics I	3	2	0	4
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 131	Physics - Mechanics	3	2	0	4
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. Pre-requisite: C or better in MAT 121 , MAT 161 , MAT 171 , or MAT 175 .					
PHY 151	College Physics I	3	2	0	4
This course uses algebra- and trigonometry-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include units and measurement, vectors, linear kinematics and dynamics, energy, power, momentum, fluid mechanics, and heat. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered. <i>This course has been approved for transfer under the CAA as a general education course in Natural Science.</i> Pre-requisite: C or better in MAT 161 , MAT 171 , or MAT 175 .					
PHY 152	College Physics II	3	2	0	4
This course uses algebra- and trigonometry-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include electrostatic forces, electric fields, electric potentials, direct-current circuits, magnetostatic forces, magnetic fields, electromagnetic induction, alternating-current circuits, and light. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered. <i>This course has been approved for transfer under the CAA as a general education course in Natural Science.</i> Pre-requisite: C or better in PHY 151 .					
PHY 251	General Physics I	3	3	0	4
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. <i>This course has been approved for transfer under the CAA as a general education course in Natural Science.</i> Pre-requisite: C or better in MAT 271 . Co-requisite: MAT 272 .					

PHY	252	General Physics II	3	3	0	4

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 for transfer under the CAA as a general education course in Natural Science.*
Pre-requisites: C or better in **MAT 272** and **PHY 251**.

Packaging (PKG)

PKG	110	Packaging Machinery I	1	4	0	3

This course covers the PMM I self-study module for packaging machinery mechanics. Topics include an overview of electricity, fluid power, mechanics, and packaging machinery components. Upon completion, students should be able to demonstrate the knowledge necessary for successful completion of the PMM I self-study module.

PKG	130	Basic Electronics	1	3	0	2

This course covers the basic electronic components of industrial systems. Topics include safety, PC boards, diodes, power supplies, transducers, transistors, SCRs Triacs, amplifiers, FETs, ICs, fiber optics, and other related topics. Upon completion, students should be able to demonstrate a working knowledge of basic interfacing and controls associated with industrial machinery electronics.

PKG	140	Packaging Materials	3	0	0	3

This course covers different types of packaging materials. Topics include adhesives, foils, films, laminates, composites, papers, polymers, aerosols, bags, bottles, boxes, cans, cartons, tubes, and other related topics. Upon completion, students should be able to demonstrate understanding of the terms and concepts associated with packaging materials.

PKG	150	Machinery Troubleshooting	1	3	0	2

This course covers logical approaches to electrical, electronic, and general troubleshooting of packaging machinery systems. Emphasis is placed on logical troubleshooting such as the 1-800 number system, the log system, the flow chart system, the detective system, and other troubleshooting systems. Upon completion, students should be able to troubleshoot and solve at least two-thirds of machinery system problems encountered.

Plastics (PLA)

PLA	110	Introduction to Plastics	2	0	0	3

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	0	3

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.

PLA	162	Plastics Manuf Processes	2	3	0	3

This course covers manufacturing processes including machining, sawing, routing, milling, drilling, tapping, turning, thermoforming, molding, extrusion, laminating, reinforcing, expansion, casting, coasting, assembly, and finishing. Emphasis is placed on the process and equipment requirements, special operational concerns, setup, operation, tooling, capability limitations, maintenance, and safety. Upon completion, students should be able to select the correct process for the material required and discuss machine operation, setup, tooling, safety, and scrap recycling.

PLA	230	Advanced Plastics Manufacturing	3	3	0	4

This course covers advanced plastics manufacturing processes. Topics include hands-on experience, material selection, manufacturing cost, process optimization, troubleshooting, and project management. Upon completion, students should be able to understand, perform, and troubleshoot advanced processes in a manufacturing environment.

Plumbing (PLU)

PLU	111	Introduction to Basic Plumbing	1	3	0	2

This course introduces basic plumbing tools, materials, and fixtures. Topics include standard tools, materials, and fixtures used in basic plumbing systems and other related topics. Upon completion, students should be able to demonstrate an understanding of a basic plumbing system.

PLU	130	Plumbing Systems	3	9	0	6

This course covers the maintenance and repair of plumbing lines and fixtures. Emphasis is placed on identifying and diagnosing problems related to water, drain and vent lines, water heaters, and plumbing fixtures. Upon completion, students should be able to identify and diagnose needed repairs to the plumbing system.

PLU	140	Introduction to Plumbing Codes	1	2	0	2

This course covers plumbing industry codes and regulations. Emphasis is placed on North Carolina regulations and the minimum requirements for plumbing materials and design. Upon completion, students should be able to research and interpret North Carolina plumbing codes.

PLU	150	Plumbing Diagrams	1	2	0	2

This course introduces sketching diagrams and interpretation of blueprints applicable to the plumbing trades. Emphasis is placed on plumbing plans for domestic and/or commercial buildings. Upon completion, students should be able to sketch plumbing diagrams applicable to the plumbing trades.

PLU	160	Plumbing Estimates	1	2	0	2

This course covers techniques for estimating quantities of materials and cost of installation for various types of plumbing systems. Topics include design of systems, codes, material takeoffs, pricing, and public relations. Upon completion, students should be able to order materials needed for installation from a designed system.

Political Science (POL)

POL	120	American Government	3	0	0	3

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. Sections of this course may also be offered at the honors level for students who are members of the GTCC Honors Program. *This course has been approved for transfer under the CAA as a general education course in Social/Behavioral Sciences.* Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).

POL	210	Comparative Government	3	0	0	3

This course provides a cross-national perspective on the government and politics of contemporary nations such as Great Britain, France, Germany, and Russia. Topics include each country's historical uniqueness, key institutions, attitudes and ideologies, patterns of interaction, and current political problems. Upon completion, students should be able to identify and compare various nations' governmental structures, processes, ideologies, and capacity to resolve major problems. *This course has been approved for transfer under the CAA as a general education course in Social/Behavioral Sciences.* Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).

POL	220	International Relations	3	0	0	3

This course provides a study of the effects of ideologies, trade, armaments, and alliances on relations among nation-states. Emphasis is placed on regional and global cooperation and conflict, economic development, trade, non-governmental organizations, and international institutions such as the World Court and UN. Upon completion, students should be able to identify and discuss major international relationships, institutions, and problems. *This course has been approved for transfer under the CAA as a general education course in Social/Behavioral Sciences.* Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).

POL	250	Intro to Political Theory	3	0	0	3

This course introduces students to normative political theory and examines basic questions and issues about the nature and purpose of politics. Emphasis is placed on the classical and modern political theories of Plato, Aristotle, Machiavelli, Hobbes, Locke, Rousseau, Mill, and Marx. Upon completion, students should be able to discuss and evaluate normative political theories about the nature and purpose of politics. *This course has been approved for transfer under the CAA as a general education course in Social/Behavioral Sciences.* Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).

Psychology (PSY)

PSY	110	Life Span Development	3	0	0	3

This course provides an introduction to the study of human growth and development. Emphasis is placed on the physical, cognitive, and psychosocial aspects of development from conception to death. Upon completion, students should be able to demonstrate knowledge of development across the life span and apply this knowledge to their specific field of study.

PSY	150	General Psychology	3	0	0	3

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 for transfer under the CAA as a general education course in Social/Behavioral Sciences.* Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).

PSY	239	Psychology of Personality	3	0	0	3

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 for transfer under the CAA as a general education course in Social/Behavioral Sciences.* Pre-requisite: **PSY 150**.

PSY	241	Developmental Psychology	3	0	0	3

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 for transfer under the CAA as a general education course in Social/Behavioral Sciences.* Pre-requisite: **PSY 150**.

PSY	265	Behavior Modification	3	0	0	3

This course is an applied study of factors influencing human behavior and strategies for behavioral change. Emphasis is placed on cognitive-behavioral theory, behavioral assessment, practical applications of conditioning techniques, and maintenance of adaptive behavior patterns. Upon completion, students should be able to implement basic learning principles to effect behavioral changes in self and others. Pre-requisite: **PSY 150**.

PSY	281	Abnormal Psychology	3	0	0	3

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 for transfer under the CAA as a general education course in Social/Behavioral Sciences.* Pre-requisite: **PSY 150**.

Physical Therapist Assistant (PTA)

PTA	110	Introduction to Physical Therapy	2	3	0	3

This course introduces the field of physical therapy including the history and standards of practice for the physical therapist assistant and basic treatment techniques. Emphasis is placed on ethical and legal considerations, universal precautions, vital signs, documentation, basic patient preparation and treatment skills, and architectural barrier screening. Upon completion, students should be able to explain the role of the physical therapist assistant and demonstrate competence in basic techniques of patient care. Pre-requisite: Enrollment in the Physical Therapist Assistant program.

PTA	125	Gross and Functional Anatomy	3	6	0	5

This course provides an in-depth, clinically oriented survey of gross and functional anatomy. Emphasis is placed on musculoskeletal and nervous systems and clinical biomechanics, including goniometry, basic manual muscle testing, and components of normal gait. Upon completion, students should be able to identify specific anatomical structures and describe, observe, and measure musculoskeletal posture and function. Pre-requisite: Enrollment in the Physical Therapist Assistant program.

PTA	135	Pathology	4	0	0	4

This course introduces principles of pathology, processes of and normal responses to injury and disease, and changes related to aging. Emphasis is placed on conditions most commonly treated in physical therapy. Upon completion, students should be able to discuss basic pathological processes and identify etiology, signs, symptoms, complications, treatment options, and prognoses of specific orthopedic conditions. Pre-requisite: Enrollment in the Physical Therapist Assistant program.

PTA	145	Therapeutic Procedures	2	6	0	4

This course provides a detailed study of specific treatment procedures and the physiological principles and techniques involved. Emphasis is placed on the correct application of superficial heat and cold, massage and soft tissue mobilization, ultrasound, diathermy, traction, and electrical stimulation. Upon completion, students should be able to demonstrate competence in the application of these modalities and explain the indications, contraindications, effects, and precautions for each. Pre-requisite: Enrollment in the Physical Therapist Assistant program.

PTA	155	PTA Clinical I	0	0	6	2

This course provides the opportunity to gain clinical experience and apply academic skills and knowledge to patient care. Emphasis is placed on performing patient care skills, observation and measurement, and professional and patient interaction. Upon completion, students should be able to demonstrate safe and effective clinical practice as measured by a standardized performance evaluation. Pre-requisite: Enrollment in the Physical Therapist Assistant program.

PTA	185	PTA Clinical II	0	0	9	3

This course provides the opportunity to gain clinical experience and apply academic skills and knowledge to patient care. Emphasis is placed on performing patient care skills, observation and measurement, and professional and patient interaction. Upon completion, students should be able to demonstrate safe and effective clinical practice as measured by a standardized performance evaluation. Pre-requisite: Enrollment in the Physical Therapist Assistant program.

PTA	212	Health Care/Resources	2	0	0	2

This course provides an overview of various aspects of health care delivery systems and the interrelationships of health care team members. Topics include health agencies and their functions, health care team member roles, management, and other health care issues. Upon completion, students should be able to discuss the functions of health organizations and team members and aspects of health care affecting physical therapy delivery. Pre-requisite: Enrollment in the Physical Therapist Assistant program.

PTA	215	Therapeutic Exercise	2	3	0	3

This course introduces basic concepts of strengthening, endurance, and flexibility exercise and balance, gait, and posture training. Emphasis is placed on applying techniques to the treatment of orthopedic conditions. Upon completion, students should be able to safely and effectively execute basic exercise programs and balance, gait, and posture training. Pre-requisite: Enrollment in the Physical Therapist Assistant program.

PTA	222	Professional Interactions	2	0	0	2

This course is designed to assist in the development of effective interpersonal skills in the physical therapist assistant setting. Topics include reactions to disability, the grieving process, methods of communication, motivation, health promotion, disease prevention, and aging. Upon completion, students should be able to discuss and demonstrate methods for achieving effective interaction with patients, families, the public, and other health care providers. Pre-requisite: Enrollment in the Physical Therapist Assistant program.

PTA	225	Introduction to Rehabilitation	3	3	0	4
This course covers cardiovascular, pulmonary, and integumentary conditions, as well as causes and treatment of amputations. Emphasis is placed upon pathological processes as well as comprehensive treatment of the various conditions studied. Upon completion, students should be able to discuss etiology, signs, symptoms, complications, and prognoses of various conditions and implement components of a comprehensive treatment program. Pre-requisite: Enrollment in the Physical Therapist Assistant program.						
PTA	235	Neurological Rehabilitation	3	6	0	5
This course covers neurological and neuromuscular conditions experienced throughout the life span. Topics include the pathology of selected conditions and the methods and rationales of various treatment approaches. Upon completion, students should be able to discuss etiology, signs, symptoms, complications, and prognoses of various conditions and implement components of a comprehensive treatment program. Pre-requisite: Enrollment in the Physical Therapist Assistant program.						
PTA	245	PTA Clinical III	0	0	12	4
This course provides the opportunity to gain clinical experience and apply academic skills and knowledge to patient care. Emphasis is placed on performing patient care skills, observation and measurement, and professional and patient interaction. Upon completion, students should be able to demonstrate safe and effective clinical practice as measured by a standardized performance evaluation. Pre-requisite: Enrollment in the Physical Therapist Assistant program.						
PTA	255	PTA Clinical IV	0	0	12	4
This course provides the opportunity to gain clinical experience and apply academic skills and knowledge to patient care. Emphasis is placed on performing patient care skills, observation and measurement, and professional and patient interaction. Upon completion, students should be able to demonstrate safe and effective clinical practice as measured by a standardized performance evaluation. Pre-requisite: Enrollment in the Physical Therapist Assistant program.						

Radiography (RAD)

RAD	110	Rad Intro & Patient Care	2	3	0	3
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. Co-requisites: RAD 111 and RAD 151 .						
RAD	111	Rad Procedures I	3	3	0	4
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. Co-requisites: RAD 110 and RAD 151 .						
RAD	112	Rad Procedures II	3	3	0	4
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.. Pre-requisites: RAD 110 , RAD 111 , and RAD 151 .						
RAD	121	Radiographic Imaging I	2	3	0	3
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. Pre-requisites: RAD 110 , RAD 111 , and RAD 151 .						
RAD	122	Radiographic Imaging II	1	3	0	2
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. Pre-requisites: RAD 112 , RAD 121 , and RAD 161 . Co-requisites: RAD 131 and RAD 171 .						

RAD 131	Radiographic Physics I	1	3	0	2
This course introduces the principles of radiation characteristics and production. Emphasis is placed on imaging equipment. Upon completion, students should be able to demonstrate a basic understanding of radiation characteristics and production.					
RAD 151	RAD Clinical Ed I	0	0	6	2
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. Co-requisites: RAD 110 and RAD 111 .					
RAD 161	RAD Clinical Ed II	0	0	15	5
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. Pre-requisites: RAD 110 , RAD 111 , and RAD 151 . Co-requisites: RAD 112 and RAD 121 .					
RAD 171	RAD Clinical Ed III	0	0	12	4
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. Pre-requisites: RAD 112 , RAD 121 , and RAD 161 . Co-requisites: RAD 122 and RAD 131 .					
RAD 183	RAD Clinical Elective	0	0	9	3
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.					
RAD 211	RAD Procedures III	2	3	0	3
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. Pre-requisite: RAD 122 . Co-requisites: RAD 231 , RAD 241 , and RAD 251 .					
RAD 231	Radiographic Physics II	1	3	0	2
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. Pre-requisite: RAD 131 or RAD 171 .					
RAD 241	Radiobiology/Protection	2	0	0	2
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. Pre-requisites: RAD 122 , RAD 131 , and RAD 171 . Co-requisites: RAD 211 , RAD 231 , and RAD 251 .					
RAD 245	Image Analysis	1	3	0	2
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. Pre-requisites: RAD 211 , RAD 231 , RAD 241 , and RAD 251 . Co-requisite: RAD 261 .					
RAD 251	RAD Clinical Ed IV	0	0	21	7
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. Pre-requisites: RAD 122 , RAD 131 , and RAD 171 . Co-requisites: RAD 211 , RAD 231 , and RAD 241 .					
RAD 261	RAD Clinical Ed V	0	0	21	7
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. Pre-requisite: RAD 251 . Co-requisite: RAD 245 .					

RAD 271	Radiography Capstone	0	3	0	1

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. Pre-requisites: **RAD 211, RAD 231, RAD 241, and RAD 251.** Co-requisites: **RAD 245 and RAD 261.**

Reading (RED)

Initial student placement in developmental courses is based on individual college placement testing policies and procedures. Students should begin developmental course work at the appropriate level indicated by that college's placement test.

RED 070	Essential Reading Skills	3	2	0	4

This course is designed to strengthen reading skills. Emphasis is placed on basic word attack skills, vocabulary, transitional words, paragraph organization, basic comprehensive skills, and learning strategies. Upon completion, students should be able to demonstrate competence in the skills required for RED 080. This course does not satisfy the developmental reading and writing pre-requisite for ENG 111 or ENG 111A.

RED 080	Introduction to College Reading	3	2	0	4

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. Students should also be able to demonstrate an understanding of the attitudes and behaviors that enhance success in a college classroom. This course does not satisfy the developmental reading pre-requisite for ENG 111 or ENG 111A. Pre-requisite: C or better in **RED 070** or **ENG 075.**

RED 090	Improved College Reading	3	2	0	4

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. Students should also be able to apply reading/study techniques that enhance reading flexibility and understanding of instructional material. This course satisfies the developmental reading pre-requisite for ENG 111 or ENG 111A. Pre-requisite: C or better in **RED 080** or **ENG 085.**

Religion (REL)

REL 110	World Religions	3	0	0	3

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. Sections of this course may also be offered at the honors level for students who are members of the GTCC Honors Program. *This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.* Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).

REL 111	Eastern Religions	3	0	0	3

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 for transfer under the CAA as a general education course in Humanities/Fine Arts.* Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).

REL 112	Western Religions	3	0	0	3

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 for transfer under the CAA as a general education course in Humanities/Fine Arts.* Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).

REL	211	Introduction to Old Testament	3	0	0	3
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. <i>This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.</i> Pre-requisite: C or higher in ENG 111.						
REL	212	Introduction to New Testament	3	0	0	3
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. <i>This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.</i> Pre-requisite: C or higher in ENG 111.						
REL	221	Religion in America	3	0	0	3
This course is an examination of religious beliefs and practice in the United States. Emphasis is placed on mainstream religious traditions and non-traditional religious movements from the Colonial period to the present. Upon completion, students should be able to recognize and appreciate the diversity of religious traditions in America. <i>This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.</i> Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).						

Substance Abuse (SAB)

SAB	110	Substance Abuse Overview	3	0	0	3
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 preventive measures. Upon completion, students should be able to demonstrate knowledge of the etiology of drug abuse, addiction, prevention, and treatment. Pre-requisite: (ENG 090 and RED 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).						
SAB	120	Intake and Assessment	3	0	0	3
This course develops processes for establishment of client rapport, elicitation of client information on which therapeutic activities are based, and stimulation of client introspection. Topics include diagnostic criteria, functions of counseling, nonverbal behavior, collaterals and significant others, dual diagnosis, client strengths and weakness, uncooperative clients, and crisis interventions. Upon completion, students should be able to establish communication with clients, recognize disorders, obtain information for counseling, and terminate the counseling process. <i>This course is a unique concentration requirement of the Substance Abuse concentration in the Human Services Technology program.</i> Pre-requisite: SAB 110.						
SAB	125	Substance Abuse Case Management	2	2	0	3
This course provides case management activities, including record keeping, recovery issues, community resources, and continuum of care. Emphasis is placed on establishing a systematic approach to monitor the treatment plan and maintain quality of life. Upon completion, students should be able to assist clients in the continuum of care as an ongoing recovery process and develop agency networking. <i>This course is a unique concentration requirement of the Substance Abuse concentration in the Human Services Technology program.</i> Pre-requisite: SAB 120.						
SAB	135	Addictive Process	3	0	0	3
This course explores the physical, emotional, psychological, and cultural aspects of the addictive process. Emphasis is placed on addictions to food, sex, alcohol, drugs, work, gambling, and relationships. Upon completion, students should be able to identify the effects, prevention strategies, and treatment methods associated with addictive disorders. Pre-requisite: SAB 110.						
SAB	137	Co-Dependency	3	0	0	3
This course introduces the adult child concept and co-dependency as syndromes of the addictive process. Emphasis is placed on treatment and recovery within the context of a paradigm shift which allows the individual to choose a healthy model of life. Upon completion, students should be able to assess levels of co-dependency and associated levels of physical and mental health and develop strategies to enhance health. Pre-requisite: SAB 110.						

SAB	210	Substance Abuse Counseling	2	2	0	3

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. Pre-requisites: HSE 125 and SAB 120.

SAB	230	Family Therapy	2	2	0	3

This course covers the theories and models of family systems therapy as designed for families affected by substance abuse and addiction. Emphasis is placed on structures and procedures necessary for successful family therapy, including the needs, types of resistance, and individual family dynamics. Upon completion, students should be able to understand and identify dynamics and patterns unique to families affected by substance abuse and the appropriate model of treatment. Pre-requisite: HSE 125.

SAB	240	SAB Issues in Client Serv	3	0	0	3

This course introduces systems of professional standards, values, and issues in substance abuse counseling. 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. *This course is a unique concentration requirement of the Substance Abuse concentration in the Human Services Technology program.* Pre-requisite: Successful completion of 12 SAB credit hours in the SAB concentration.

Information Systems Security (SEC)

SEC	110	Security Concepts	2	2	0	3

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. Pre-requisite: NET 110 or NET 125.

SEC	150	Secure Communications	2	2	0	3

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. Pre-requisites: SEC 110 and (NET 110 or NET 125).

SEC	160	Secure Admin I	2	2	0	3

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. Pre-requisites: SEC 110 and (NET 110 or NET 125).

SEC	170	SOHO Security	2	2	0	3

This course introduces security principles and topics related to the small office/home office networking environment. Topics include network topologies, network protocols, security issues, and best practices for SOHO environments. Upon completion, students should be able to design, setup, secure, and manage a small office/home office network. This course is restricted to the Information Systems Security/Operating Systems curriculum. Pre-requisites: SEC 110 and NET 125.

SEC	210	Intrusion Detection	2	2	0	3

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. Pre-requisite: SEC 160.

SEC 220	Defense-in-Depth	2	3	0	3

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 is restricted to the Information Systems Security, the Information Systems Security/Operating Systems, and the Information Systems Security/Security Hardware curriculums. Co-requisite: **SEC 160**.

SEC 289	Security Capstone Project	1	4	0	3

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. Pre-requisites: **SEC 220**, SEC 150 and SEC 160.

Simulation and Game Development (SGD)

SGD 111	Introduction to SGD	2	3	0	3

This course provides students with an introduction to simulation and game development. Topics include setting, storytelling, narrative, character design, interface design, game play, internal economy, core mechanics, game genres, AI, the psychology of game design and professionalism. Upon completion, students should be able to demonstrate knowledge of the major aspects of simulation and game design and development. Pre-requisite: (RED 090 and ENG 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).

SGD 112	SGD Design	2	3	0	3

This course introduces the fundamentals of simulation and game design. Topics include industry standards and design elements for simulations and games. Upon completion, students should be able to design simple simulations and/or games. Pre-requisite: (RED 090 and ENG 090), ENG 095, or (EFL 074, EFL 084, and EFL 094).

SGD 113	SGD Programming	2	3	0	3

This course introduces the fundamentals of programming languages and tools employed in simulation and game development. Emphasis is placed on programming concepts used to create simulations and games. Upon completion, students should be able to program simple games and/or simulations. Pre-requisites: [(DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050), MAT 120, MAT 121, MAT 161, or MAT 171] and [RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094)].

SGD 114	3D Modeling	2	3	0	3

This course introduces the tools required to create three dimensional (3D) models. Emphasis is placed on exploring tools used to create 3D models. Upon completion, students should be able to create and animate 3D models using 3D modeling tools. Pre-requisites: SGD 111 & SGD 112.

SGD 116	Graphic Design Tools	2	2	0	3

This course introduces students to computer-based graphic design tools and their use within the context of simulation and game design. Topics include texture creation, map creation, and introduction to advanced level graphic design techniques. Upon completion, students should be able to competently use and explain industry-standard graphic design software.

SGD 117	Art for Games	2	3	0	3

This course introduces students to the basic principles of art and how they apply to simulations and games. Emphasis is placed on learning to develop industry quality concept art for characters and other assets, as well as techniques needed to create such art. Upon completion, students should be able to create their own industry standard concept art for use in SGD projects.

SGD 123	Windows/Console Prog	2	3	0	3

This course introduces the concepts of Windows and Console Programming. Emphasis is placed on learning MS Windows, the operating systems of various consoles and programming techniques. Upon completion, students should be able to demonstrate an understanding of Windows and of various consoles' operating systems. Pre-requisite: **SGD 113**.

SGD	124	MMO Programming	2	3	0	3
This course introduces the concepts of Massive Multiplayer On-line Programming for simulations and games. Emphasis is on learning Massive Multiplayer On-line simulation and game programming techniques. Upon completion, students should be able to create a Massive Multiplayer On-line simulation or game. Pre-requisite: SGD 213.						
SGD	125	SG Artificial Intelligence	2	3	0	3
This course introduces the artificial intelligence concepts related to simulation and game development. Emphasis is placed on expert systems. Upon completion, students should be able to describe the basic concepts and procedures related to the development of artificial intelligence systems used in simulations and games.						
SGD	126	SG Engine Design	2	3	0	3
This course introduces the techniques needed to design and create a simulation/game engine. Emphasis is placed on learning core techniques used to design and create simulation and/or game engines. Upon completion, students should be able to design and create a simulation or game engine.						
SGD	134	SG Quality Assurance	2	2	0	3
This course provides an introduction to software quality assurance as it relates to simulation and game development. Emphasis is placed on designing testing tools, bug databases, and on learning methodologies required for systematic, detail-oriented testing procedures for the simulation and game industry. Upon completion, students should be able to demonstrate the proper skills to obtain a job as a quality assurance tester in the simulation/game industry.						
SGD	135	Serious Games	3	0	0	3
This course provides students with an overview of serious games and their applications in immersive learning and education. Emphasis is placed on developing games for education, corporate training, and medical/military simulations. Upon completion, students should be able to design their own serious games.						
SGD	161	SG Animation	2	3	0	3
This course introduces the fundamental principles of animation used in simulation and game development. Emphasis is placed on a historical survey of animation, aspects of the animation process and animation techniques. Upon completion, students should be able to produce character sketches, morph simple objects, create walk and run cycles and develop professional storyboards. Pre-requisite: SGD 114.						
SGD	163	SG Documentation	2	3	0	3
This course introduces the techniques and methods used to create simulation and game production and design documents. Emphasis is placed on the design document to include scheduling, production plans, marketing and budgeting. Upon completion, students should be able to create design and produce documents for any simulation or game. Pre-requisite: ENG 111.						
SGD	164	SG Audio/Video	2	3	0	3
This course introduces various aspects of audio and video and their application in simulations and games. Topics include techniques for producing and editing audio and video for multiple digital mediums. Upon completion, students should be able to produce and edit audio and video for simulations and games. Pre-requisites: SGD 111 and SGD 112.						
SGD	165	SG Character Development	2	3	0	3
This course introduces the concepts needed to create a fictional personality for use in digital videos, animations, simulations and games. Topics include aspects of character, developing backgrounds, mannerisms and voice. Upon completion, students should be able to develop characters and backgrounds for simulations and games. Pre-requisites: SGD 112 and ENG 111.						
SGD	168	Mobile SG Programming I	2	3	0	3
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	171	Flash SG Programming	2	3	0	3
This course introduces the Flash programming environment for use in simulation and game development. Topics include timeline effects, extensibility layers, alias text, globalization tools, ActionScript and lingo programming. Upon completion, students should be able to create a simple simulation or game using Flash.						

SGD	173	Lighting/Shading Algori	2	3	0	3
This course introduces the concepts of various lighting and shading algorithms for use in simulation and game development. Topics include various tools used to create light and shadows. Upon completion, students should be able to apply knowledge of various lighting and shading algorithms to the creation of simulations and games. Pre-requisite: SGD 214 .						
SGD	174	SG Level Design	2	3	0	3
This course introduces the tools used to create levels for real-time simulations and games. Topics include level design, architecture theory, modeling for 3D engines and texturing methods. Upon completion, students should be able to design simple levels using industry standard tools. Pre-requisite: SGD 114.						
SGD	212	SGD Design II	2	3	0	3
The course covers the advanced principles of simulation and game design. Topics include advanced design concepts in simulation and game development. Upon completion, students should be able to design an advanced simulation or game. Pre-requisite: SGD 112 .						
SGD	213	SGD Programming II	2	3	0	3
The course covers advanced programming concepts used to create simulations and games. Emphasis is placed on acquiring advanced programming skills for use in creating simulations and games. Upon completion, students should be able to program an advanced simulation or game. Pre-requisite: Take one: SGD 113, CSC 134, CSC 151, or CSC 153 .						
SGD	214	3D Modeling II	2	3	0	3
This course introduces the tools used to create and animate advanced 3 dimensional models. Emphasis is placed on identifying and utilizing the tools required to create and animate advanced 3D models. Upon completion, students should be able to create and animate advanced 3D models using 3D modeling tools. Pre-requisite: SGD 114						
SGD	268	Mobile SG Programming II	2	3	0	3
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. Prerequisite: SGD 168 .						
SGD	274	SG Level Design II	2	3	0	3
This course introduces the advanced tools used to create levels for real-time simulations and games. Topics include advanced level design and architecture theory, concepts related to “critical path” and “flow,” game balancing, playtesting and storytelling. Upon completion, students should be able to design complex levels using industry standard tools. Pre-requisite: SGD 174 .						
SGD	285	SG Software Engineering	2	3	0	3
This course introduces object oriented software engineering concepts related to simulation and game development. Topics include systematic approaches to the development, operation and maintenance of simulations and games. Upon completion, students should be able to apply software engineering techniques to the development of simulations and games. Pre-requisite: Take one: SGD 212, SGD 213, or SGD 214 .						
SGD	289	SGD Project	2	3	0	3
This course provides students with the opportunity to create a functional simulation or game with minimal instructor support. Emphasis is placed upon verbal and written communication, skill documentation, professional presentation and user training. Upon completion, students should be able to create and professionally present a fully functional simulation or game. Pre-requisite: Take one: SGD 212, SGD 213, SGD 214, or SGD 285 .						

Sociology (SOC)

SOC	210	Introduction to Sociology	3	0	0	3
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. Sections of this course may also be offered at the honors level for students who are members of the GTCC Honors Program. <i>This course has been approved for transfer under the CAA as a general education course in Social/Behavioral Sciences</i> . Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).						

SOC	213	Sociology of the Family	3	0	0	3
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 lifestyles, 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. <i>This course has been approved for transfer under the CAA as a general education course in Social/Behavioral Sciences.</i> Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).						
SOC	220	Social Problems	3	0	0	3
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. <i>This course has been approved for transfer under the CAA as a general education course in Social/Behavioral Sciences.</i> Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).						
SOC	225	Social Diversity	3	0	0	3
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. <i>This course has been approved for transfer under the CAA as a general education course in Social/Behavioral Sciences.</i> Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).						
SOC	240	Social Psychology	3	0	0	3
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. <i>This course has been approved for transfer under the CAA as a general education course in Social/Behavioral Sciences.</i> Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).						

Spanish (SPA)

SPA	111	Elementary Spanish I	3	0	0	3
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. Upon completion, students should be able to comprehend and respond with grammatical accuracy to spoken and written Spanish and demonstrate cultural awareness. <i>This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.</i> Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).						
SPA	112	Elementary Spanish II	3	0	0	3
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. Upon completion, students should be able to comprehend and respond with increasing proficiency to spoken and written Spanish and demonstrate further cultural awareness. <i>This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.</i> Pre-requisite: C or better in SPA 111 .						
SPA	120	Spanish for the Workplace	3	0	0	3
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. Pre-requisite: RED 090, ENG 095, or (EFL 074, EFL 084, and EFL 094).						
SPA	211	Intermediate Spanish I	3	0	0	3
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. Upon completion, students should be able to communicate effectively, accurately, and creatively about the past, present, and future. <i>This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.</i> Pre-requisite: C or better in SPA 112 .						

SPA	212	Intermediate Spanish II	3	0	0	3

This course provides a continuation of SPA 211. Emphasis is placed on the continuing study of authentic and representative literary and cultural texts. Upon completion, students should be able to communicate spontaneously and accurately with increasing complexity and sophistication. *This course has been approved for transfer under the CAA as a general education course in Humanities/Fine Arts.* Pre-requisite: C or better in **SPA 211**.

Surveying (SRV)

SRV	110	Surveying I	2	6	0	4

This course introduces the theory and practice of plane surveying. Topics include the precise measurement of distances, angles, and elevations; bearing, azimuth and traverse computations; topography and mapping. Upon completion, students should be able to use/care for surveying equipment, collect field survey data, perform traverse computations and create a contour map. Co-requisite: (**DMA 010, 020, 030, 040, 050, 060, 070, and 080**), **MAT 120, MAT 121, MAT 161, or MAT 171**.

SRV	111	Surveying II	2	6	0	4

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. Pre-requisite: **SRV 110**.

SRV	210	Surveying III	2	6	0	4

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. Pre-requisite: **SRV 110**.

SRV	220	Surveying Law	2	2	0	3

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. Pre-requisite: **SRV 110**.

SRV	240	Topographical/Site Surveying	2	6	0	4

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. Pre-requisite: **SRV 110**.

Sustainability Technologies (SST)

SST	120	Energy Use Analysis	2	2	0	3

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	140	Green Building & Design Concepts	3	0	0	3

This course is designed to introduce the student to sustainable building design and construction principles and practices. Topics include sustainable building rating systems and certifications, energy efficiency, indoor environmental quality, sustainable building materials and water use. Upon completion, students should be able to identify the principles and practices of sustainable building design and construction.

Surgical Technology (SUR)

SUR 110 Introduction to Surgical Technology 3 0 0 3

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 the technological sciences. Upon completion, students should be able to apply theoretical knowledge of the course topics to the practice of surgical technology. Pre-requisites: (DMA 010, DMA 020, DMA 030, and DMA 040) and [ENG 090, ENG 095, or (EFL 074, EFL 084, and EFL 094)]. Co-requisite: **SUR 111**.

SUR 111 Periop Patient Care 5 6 0 7

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 peri-operative team member to the operative environment. Co-requisite: **SUR 110**.

SUR 122 Surgical Procedures I 5 3 0 6

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. Pre-requisites: **SUR 110** and **SUR 111**. Co- requisite: **SUR 123**.

SUR 123 Sur Clinical Practice I 0 0 21 7

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. Pre-requisites: **SUR 110** and **SUR 111**. Co- requisite: **SUR 122**.

SUR 134 Surgical Procedures II 5 0 0 5

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. Pre-requisites: SUR 122 and **SUR 123**. Co-requisites: SUR 135 and SUR 137.

SUR 135 SUR Clinical Practice II 0 0 12 4

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. Pre-requisites: SUR 122 and **SUR 123**. Co- requisites: **SUR 134** and SUR 137.

SUR 137 Professional Success Preparation 1 0 0 1

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. Pre-requisites: SUR 122 and **SUR 123**. Co-requisites: **SUR 134** and **SUR 135**.

SUR 210 Adv SUR Clinical Practice 0 0 6 2

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. Pre-requisites: SUR 134, SUR 135, and SUR 137.

SUR 211 Adv Theoretical Concepts 2 0 0 2

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. Pre-requisites: SUR 134, SUR 135, and SUR 137.

Telecommunications & Network Engineering (TNE)

TNE	111	Campus Networks I	2	3	0	3

This course is designed to introduce the fundamentals of data/computer networks. Topics include an overview of data communication standards, protocols, equipment, and how they are integrating into network topologies and systems. Upon completion, students should be able to demonstrate an understanding of telecommunication and networking.

TNE	121	Campus Networks II	2	3	0	3

This course covers the operating systems and topologies associated with networking. Topics include the various operating systems used in networking and the topologies explained on a network to network level. Upon completion, students should be able to use and explain operating systems and topologies. Pre-requisite: TNE 111.

TNE	231	Data Comm over WAN	2	3	0	3

This course is designed to introduce wide area networking. Topics include LAN connectivity, WAN connectivity including Frame Relay and Broadband, packet switching networks, and network topologies explained on a WAN basis. Upon completion, students should be able to demonstrate an understanding of wide area networking. Pre-requisite: TNE 111.

TNE	241	Network Management	2	3	0	3

This course introduces theory and provides experience in analyzing and troubleshooting telecommunication network systems. Topics include physical issues, software debugging, viruses, e-mail, traffic management, server and router configuration, documentation, and equipment use. Upon completion, students should be able to identify and resolve telecommunication network problems. Pre-requisite: TNE 111.

TNE	242	Data Network Design	2	3	0	3

This course covers the principles of the design of LAN and WAN hierarchy through the terminal. Topics include OSI model, static and dynamic addressing, network terminal management, bandwidth requirements, Internet requirements, redundancy, and broadband versus baseband systems. Upon completion, students should be able to design a hierarchical network system to board design.

TNE	250	Telecom Networks	2	3	0	3

This course introduces the principal elements and theory (both analog and digital) of telecommunication networking systems. Topics include system network overview, subscriber loops, network testing and measurement, wiring, network transmission techniques synchronization and analysis, switching and signaling, and related applications. Upon completion, students should be able to demonstrate knowledge of the concepts associated with telecommunication network systems. Pre-requisites: ELC 131 and TNE 111.

TNE	251	Advanced Telecom Networks	2	3	0	3

This course is a continuation of TNE 250 and introduces advanced concepts associated with telecommunication network systems. Topics include waveform coding, emerging transmission techniques and analysis, advanced switching system architectures, personal communication systems, and related topics and applications. Upon completion, students should be able to demonstrate knowledge of the concepts associated with advanced telecommunication network systems.

TNE	255	Network Servers	2	3	0	3

This course covers the activities and methods required to assure productive and reliable operation of network servers. Topics include planning, installing, configuring, and maintaining servers, including knowledge of server-level hardware implementations, operating systems, data storage subsystems, data recovery, and I/O subsystems. Upon completion, students should be able to configure and maintain a network server. Pre-requisites: CET 111 and TNE 111.

Turfgrass Management Technology (TRF)

TRF	110	Introduction Turfgrass Cult & ID	3	2	0	4
This course covers the principles of reproduction, growth development, species characteristics, establishment and maintenance of golf courses and sports fields, and lawns. Topics include principles of reproduction, growth development, species characteristics, establishment and maintenance of golf courses and sports fields, and lawn applications. Upon completion, students should be able to identify turfgrass species and develop an establishment and maintenance plan for high quality turf areas in accordance with sustainable practices.						
TRF	120	Turfgrass Irrigation & Design	2	4	0	4
This course covers the basic techniques involved in the design, layout, installation, and use of water-wise turfgrass irrigation systems. Topics include types of irrigation systems, components of the systems, materials available for use, and economic considerations. Upon completion, students should be able to complete a functional design for a turfgrass irrigation system according to sustainable practices.						
TRF	125	Turfgrass Computer Applications	1	3	0	2
This course introduces basic computer applications for the turfgrass industry. Emphasis is placed on computer software applications for irrigation design, management, and budget planning for turfgrass applications. Upon completion, students should be able to use appropriate software for various turfgrass management applications.						
TRF	130	Native Flora Identification	1	3	0	2
This course covers identification of selected native ground covers and woodland trees by summer and/or winter characteristics. Emphasis is placed on mature age, fall colors, site adaptability, and habit of growth for special turf-related areas. Upon completion, students should be able to identify native plants by size and leaf, bud, twig, and limb formation.						
TRF	152	Landscape Maintenance	2	2	0	3
This course introduces the tasks of landscape maintenance. Emphasis is placed on lawns, shrubs, trees, flowers, and ground covers. Upon completion, students should be able to maintain a landscape area on a year-round schedule.						
TRF	210	Turfgrass Equipment Management	1	4	0	3
This course covers the operation and maintenance of specialized turfgrass management equipment. Topics include small engine use and repair; operation, maintenance, and repair of turfgrass management equipment; organization of shop areas; and safety considerations. Upon completion, students should be able to operate and maintain turfgrass management equipment.						
TRF	220	Turfgrass Calculations	2	0	0	2
This course introduces the specific math concepts and calculations necessary in the turfgrass industry. Emphasis is placed on calibration of equipment used in the application of fertilizers and pesticides and calculation of solid materials used in construction. Upon completion, students should be able to correctly perform basic calculations and calibrations and estimate materials needed in specific professional turfgrass management situations.						
TRF	230	Turfgrass Management Applications	1	2	0	2
This course introduces specific sports field design, installation, and maintenance. Topics include natural grass croquet courts and baseball, soccer, and football fields. Upon completion, students should be able to perform specific tasks in layout, field marking, and preparing for tournament play.						
TRF	240	Turfgrass Pest Control	2	2	0	3
This course covers detection and identification of turfgrass pests with emphasis on methods of sustainable management. Topics include pest identification with an understanding of pesticides used, application procedures, and costs involved in sustainable management programs. Upon completion, students should be able to identify turfgrass pests, select the proper pesticide, develop pest management programs, and/or use integrated pest management.						
TRF	260	Advanced Turfgrass Management	3	2	0	4
This course covers the principles and practices involved in turfgrass management. Topics include choosing the best management practice in mowing, pest control, fertilization, irrigation, traffic control, air control, budgeting, and materials procurement. Upon completion, students should be able to demonstrate knowledge of the principles covered and select and apply the best practices in turfgrass management. Pre-requisite: TRF 110 .						

Upholstery (UPH)

UPH	111	Cutting and Pattern Making I	1	4	0	3
This course introduces making, selecting, identifying, and placing patterns on fabric; fabric characteristics; and cutting simple fabrics. Emphasis is placed on frame measurements, fabric characteristics, pattern placement, cutting techniques, and proper use of cutting tools. Upon completion, students should be able to develop a set of patterns and demonstrate cutting techniques and placement of patterns on fabric to industry standards. Pre-requisite: (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050). Co-requisites: UPH 121, UPH 131, and UPH 141.						
UPH	112	Cutting and Pattern Making II	1	4	0	3
This course covers advanced pattern making and cutting on a variety of fabrics and furniture styles. Emphasis is placed on making and cutting complex patterns for a variety of furniture styles and the use of patterned fabrics. Upon completion, students should be able to develop and cut patterns for a variety of complex furniture styles and fabric patterns. Pre-requisite: UPH 111 .						
UPH	121	Sewing I	1	4	0	3
This course introduces skills needed to sew upholstery covers using a standard sewing machine. Topics include machine maintenance, threading, and sewing straight lines, corners, curves, and welts. Upon completion, students should be able to operate and maintain a standard sewing machine for upholstery fabric. Pre-requisite: (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050). Co-requisites: UPH 111, UPH 131, and UPH 141.						
UPH	122	Sewing II	1	4	0	3
This course covers operation of more advanced equipment on complex fabric patterns and designs. Emphasis is placed on double needle, zipper, border, and computerized machines and on matching stripes and patterns. Upon completion, students should be able to operate advanced sewing equipment on complex fabrics. Pre-requisite: UPH 121 .						
UPH	131	Seat Construction I	1	4	0	3
This course introduces basic seat construction for simple furniture styles. Topics include webbing, light-weight springs, and basic eight-way tie construction. Upon completion, students should be able to develop basic seat construction for simple furniture. Pre-requisite: (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050). Co-requisites: UPH 121, UPH 111, and UPH 141.						
UPH	132	Seat Construction II	1	4	0	3
This course covers more complex methods of seat construction, including eight-way hand tying. Emphasis is placed on eight-way hand tie construction on love seats and sofas and other related topics. Upon completion, students should be able to demonstrate proficiency in eight-way hand tying on complex furniture styles. Prerequisite: UPH 131 .						
UPH	141	Inside Upholstery I	1	4	0	3
This course covers basic aspects of inside upholstering on simple chairs, including correct terminology. Topics include the introduction of padding and upholstering, seat decks, inside backs and arms of chairs, and fitting cushions. Upon completion, students should be able to peel and upholster seat decks, inside arms, inside backs, and arms of chairs and fit cushions for comfort. Pre-requisite: (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050). Co-requisites: UPH 121, UPH 131, and UPH 111.						
UPH	142	Inside Upholstery II	1	4	0	3
This course covers advanced inside upholstering tasks for chairs, love seats, and sofas. Emphasis is placed on channeling and tufting for all styles and types. Upon completion, students should be able to complete inside upholstering of complex styles of furniture. Pre-requisite: UPH 141 .						
UPH	151	Outside Upholstery I	1	4	0	3
This course introduces the application of an outside cover to a basic chair. Topics include double covering and proper use of padding on the outside of chairs, love seats, and sofas. Upon completion, students should be able to cover and pad the outside of a chair. Pre-requisite: (DMA 010, DMA 020, DMA 030, DMA 040, and DMA 050). Co-requisite: UPH 141.						
UPH	152	Outside Upholstery II	1	4	0	3
This course covers application of outside coverings to frames using more complex fabric and decoration. Emphasis is placed on applying skirts and decorative trim, including matching of stripes. Upon completion, students should be able to demonstrate proficiency in covering furniture outside and applying decorative trim and matching of stripes. Pre-requisite: UPH 151.						

Web Technologies (WEB)

WEB 110	Internet/Web Fundamentals	2	2	0	3
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	0	3
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. Co-requisite: CIS 110.					
WEB 115	Web Markup and Scripting	2	2	0	3
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. Co-requisite: CIS 110.					
WEB 120	Intro Internet Multimedia	2	2	0	3
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. Co-requisite: CIS 110.					
WEB 125	Mobile Web Design	2	2	0	3
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. Pre-requisite: WEB 110 .					
WEB 140	Web Development Tools	2	2	0	3
This course provides an introduction to web development software suites. Topics include the creation of web sites and applets using web development software. Upon completion, students should be able to create entire web sites and supporting applets. Co-requisites: CIS 110 and WEB 110.					
WEB 141	Mobile Interface Design	2	2	0	3
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 Application Dev I	2	2	0	3
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 180	Active Server Pages	2	2	0	3
This course introduces active server programming. Topics include HTML forms processing and other issues related to developing active web applications. Upon completion, students should be able to create and maintain a dynamic website. Pre-requisite: CIS 115 .					
WEB 182	PHP Programming	2	2	0	3
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. Pre-requisite: CIS 115 .					
WEB 186	XML Technology	2	2	0	3
This course is designed to introduce students to XML and related internet technologies. Topics include extensible style language (XSL) document object model (DOM), extensible stylesheet language transformation (XSLT), and simple object access protocol (SOAP). Upon completion, students should be able to create a complex XML document. Pre-requisite: CIS 115 .					

WEB 210	Web Design	2	2	0	3

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. Pre-requisite: WEB 140.

WEB 211	Advanced Web Graphics	2	2	0	3

This course covers the advanced concepts related to the creation and manipulation of graphic images for web delivery. Topics include graphics acquisition, use of masks and channels, advanced special effects, advanced photo manipulation, and other related topics. Upon completion, students should be able to create, manipulate, and optimize web graphics with advanced techniques and maintain an online coursework portfolio. Pre-requisite: **WEB 111**.

WEB 214	Social Media	2	2	0	3

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 230	Implementing Web Server	2	2	0	3

This course covers website and web server architecture. Topics include installation, configuration, administration, and security of web servers, services and sites. Upon completion, students should be able to effectively manage the web services deployment lifecycle according to industry standards. Pre-requisite: **NET 110** or **NET 125**.

WEB 240	Internet Security	2	2	0	3

This course covers security issues related to Internet services. Topics include the operating system and the Internet service security mechanisms. Upon completion, students should be able to implement security procedures for operating system level and server level alerts. Pre-requisites: **WEB 110**, (**CIS 110** or **CIS 111**), and **SEC 110**.

WEB 250	Database Driven Websites	2	2	0	3

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. Pre-requisites: **DBA 110** and **WEB 140**.

WEB 251	Mobile Application Dev II	2	2	0	3

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. Pre-requisite: **WEB 151**.

WEB 285	Emerging Web Technologies	2	2	0	3

This course will explore, discuss, and research emerging technologies in the web arena. Emphasis is placed on exposure to up-and-coming technologies relating to the web, providing hands-on experience, and discussion of practical implications of these emerging fields. Upon completion, students should be able to articulate issues relating to these technologies.

WEB 289	Internet Technologies Project	1	4	0	3

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. Pre-requisite: **WEB 250**.

Welding (WLD)

WLD 110	Cutting Processes	1	3	0	2
This course introduces oxy-fuel and plasma-arc cutting systems. Topics include safety, proper equipment setup, and operation of oxy-fuel and plasma-arc cutting equipment with emphasis on straight line, curve and bevel cutting. Upon completion, students should be able to oxy-fuel and plasma-arc cut metals of varying thickness. Co-requisites: WLD 121 and WLD 115.					
WLD 112	Basic Welding Processes	1	3	0	2
This course introduces basic welding and cutting. Emphasis is placed on beads applied with gases, mild steel fillers, and electrodes and the capillary action of solder. Upon completion, students should be able to set up welding and oxy-fuel equipment and perform welding, brazing and soldering processes.					
WLD 115	SMAW (Stick) Plate	2	9	0	5
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. Pre-requisite: RED 080, ENG 085, or (EFL 074, EFL 084, and EFL 094). Co-requisite: WLD 121.					
WLD 121	GMAW (MIG) FCAW/Plate	2	6	0	4
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. Pre-requisite: RED 080, ENG 085, or (EFL 074, EFL 084, and EFL 094). Co-requisite: WLD 115.					
WLD 131	GTAW (TIG) Plate	2	6	0	4
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. Pre-requisite: RED 080, ENG 085, or (EFL 074, EFL 084, and EFL 094).					
WLD 132	GTAW (TIG) Plate/Pipe	1	6	0	3
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. Pre-requisite: WLD 131 .					
WLD 141	Symbols and Specifications	2	2	0	3
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. Pre-requisite: [RED 080, ENG 085, or (EFL 074, EFL 084, and EFL 094)], WLD 115, and WLD 121.					
WLD 151	Fabrication I	2	6	0	4
This course introduces the basic principles of fabrication. Emphasis is placed on safety, measurement, layout techniques, cutting, joining 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. Pre-requisites: WLD 110, WLD 121, and DFT 119.					
WLD 215	SMAW (Stick) Pipe	1	9	0	4
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. Pre-requisite: WLD 115 or WLD 116 .					
WLD 261	Certification Practices	1	3	0	2
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. Pre-requisites: WLD 115 , WLD 121 , and WLD 131 .					

academic information

ADMISSION TO LIMITED ENROLLMENT PROGRAMS

Applying

Limited enrollment programs have additional steps for students to take before they are considered for admission. Students must apply within the time period prescribed annually by the Admissions Office. Upon notification of acceptance into the program, applicants must indicate their intention to enroll by contacting the Admissions office in writing. Applications are valid for one academic year only. If not selected, applicants must update their application for the next admission opportunity. Admission to the college does not guarantee admission to or continued enrollment in a certain program. More information about limited enrollment programs is available at <http://www.gtcc.edu/limitedenrollment>

Limited Enrollment Programs

- Nursing – Associate Degree Nursing, Practical Nursing, LPN to RN Bridge Program
- Dental – Dental Assisting, Dental Hygiene
- Emergency Medical Science
- Medical Assisting
- Pharmacy Technology
- Physical Therapist Assistant
- Radiography
- Surgical Technology
- Cosmetology

Selection Process

Admissions advisors will review applications from applicants who have satisfied the minimum selection criteria. Limited enrollment programs vary in the process of ranking applicants. Applicants will be selected for program admission or ranked as alternates based on one or more of the following components (program specific):

- Placement test scores
- College coursework
- High school coursework
- Attendance at Orientation
- Related job experience
- Answers to supplemental questions
- Résumé
- Prior application to the program
- Employment experience

Course Requirements

The course requirements for GTCC programs are subject to change each academic year. For GTCC certificate/degree requirements, a student must follow the program requirements either for the year the student is officially admitted to the program or the year the student is completing the program.

Student Progress

Students in limited enrollment programs are expected to complete the curriculum within the designated time-frame for the program.

Students who are unable to maintain satisfactory progress may, through a process of review, be removed from a program. This is especially true in regard to clinical education in which patient safety is involved.

Students in limited enrollment health programs must maintain a final grade no lower than a C in each course with a prefix of BIO, CHM, DEN, EMS, MED, NAS, NUR, PHM, PHY, PTA, RAD, and SUR. Health students making a D or F in any health or health related course will be suspended from the program at the end of the course in which the grade occurs. In addition, health program students who are not eligible to continue at clinical sites may be suspended. Health students on suspension have the right to appeal.

Advanced Standing

Students with previous training may be admitted to programs with advanced standing. This may be possible where students have partially completed similar programs at other institutions or where related one-year certificates have been completed. Students seeking advanced placement into limited enrollment programs should apply like other students. In the event they are offered admission, the student will undergo a transcript evaluation to determine his or her advanced placement.

SPECIAL PROGRAMS

eDegree Program

(336) 334-4822, ext. 50615
<http://www.gtcc.edu/edegrees>
Email: edegree@gtcc.edu

GTCC offers many degrees, diplomas, and certificates entirely online, though some instructors require proctored exams. Degree-seeking students must successfully complete ACA-112, Introduction to Distance Learning, before they are considered eDegree students who have registration privileges for online classes. Students considering eDegree programs should carefully review the information on the eDegree website and complete the supplemental online application.

Greater Greensboro Consortium

Registrar's Office
Jamestown: Medlin Campus Center, Second Floor
(336) 334-4822
<http://www.gtcc.edu/consortium>

GTCC is a member of the Greater Greensboro Consortium, which includes Bennett College, Elon College, Greensboro College, Guilford College, High Point University, North Carolina Agricultural & Technical State University and the University of North Carolina at Greensboro. The purpose of the consortium is to expand options available to students when a particular course is not offered on a student's home campus or is not offered on a schedule that fits the student's academic program. Students can take courses at the other institutions at GTCC tuition rates during fall and spring semesters only; the program is not available during the summer term.

To be approved to take courses under the Greater Greensboro Consortium program, a student must be currently enrolled, must be a degree-seeking student and must be enrolled in at least six semester hours at the home institution (GTCC). At least one half of the student's load should be completed at the home campus. Consortium students may not register for courses at the host institution inappropriate to their degree or class status. GTCC students are limited to freshman and sophomore level courses. Consortium students may not normally take a course at a host institution if the course is available at the home campus, though exceptions may be made under extenuating circumstances.

REGISTRATION AND ATTENDANCE

Registering for Classes

Registration for classes is a process conducted by the student via WebAdvisor at <http://www.gtcc.edu/webadvisor> (log-in required) or, in some cases, by an authorized staff or faculty member.

Students are assigned registration times based on the number of credit hours they have completed and whether they are enrolled in certain limited enrollment programs. This registration time is available in WebAdvisor under My Online Registration Time. New students are able to register after their designated date and time. Students who have completed orientation may register for or add a class during the designated schedule adjustment period.

Students whose names do not appear on the instructor's roster are not officially registered and will not receive credit or grades.

Caution: Registering for classes after instruction has begun may be detrimental to student learning. Any student who adds a course after the start of class and before the census date will be held responsible for all course information previously covered. Students are not guaranteed make up privileges.

Waitlists

A waitlist is a record of students interested in adding a class that does not have available seats. If a class is full, students may have the option of joining a waitlist for that class. If a seat in a waitlisted class becomes available, students are notified by GTCC email in the order in which they signed up for the waitlist. A student has 24 hours from the time of notification to register for the course. The 24-hour period starts when the email notification is sent, not when it is read by the student. If the available seat is not filled, it will be offered to the next student on the waitlist. If a student misses the enrollment deadline for a waitlisted class, the student may rejoin the waitlist.

Students should remove themselves from waitlists for classes they no longer wish to add to their schedule. The wait list feature will be turned off on a designated date, and after that point, the wait list will not be used to determine course enrollment priority. Students are responsible for monitoring class availability after the wait list feature is made inactive.

Attendance

Students are responsible for their attendance in classes in which they are enrolled. Instructors set attendance policies for classes. See the course syllabus for attendance requirements.

Required Attendance

To remain enrolled, students in face-to-face and webbed (part face-to-face and part online) classes must attend class and be recorded as present at least once prior to the census date. Students in completely online classes must submit a designated assignment by the census date to remain enrolled. The census date is the point in the semester at which the State of North Carolina verifies enrollment and is equivalent to the 10% point in the class. The census date for each class can be found on the course syllabus. Students who have not met attendance requirements by the census date will be withdrawn from the class and marked as no-shows.

Absences

Students are responsible for any class content missed during an absence. Instructors set policies on late and make up work; these policies are found on the course syllabus. Some programs have outside regulatory bodies that require students complete a minimum number of course attendance hours.

Approval for a military leave of absence will be given when the instructor has received prior official notification. Students reporting for military drill must provide instructors with a letter from the commanding officer or official orders prior to the military leave. If military leave prohibits a student from attending class before the census date, that student must drop the course.

GTCC curriculum and continuing education students are allowed two days of missed classes each academic year for religious observances required by the faith of the student. Curriculum students must notify their instructor(s) in writing of expected absence(s) during the first three weeks of the semester in which the student will not attend. Students will be allowed the opportunity to make-up work or tests missed as a result of the religious observance required by the faith of the students, as long as the student follows the proper notification protocol. The student is responsible for making up the missed work in a timely manner.

Students are not automatically excused from class to attend field trips or intercollegiate functions. When schedule conflicts occur because of field trips, students should consult with their instructors about the absence and make arrangements to complete any work missed.

Dropping and Withdrawing

Students can drop classes during the schedule adjustment period. After the schedule adjustment period, students must follow the withdrawal process.

If a student formally withdraws from a class after the schedule adjustment period and before the withdrawal date, the student will receive a grade of W. The withdrawal date is the point at which 70% of scheduled class hours have been completed and is found on the course syllabus. The withdrawal date usually corresponds to the end of the eleventh week of a 16-week term.

If a student fails to follow the withdrawal process or is not readmitted to class after excessive absences, the student will receive a grade of F. An exception may be granted because of extenuating circumstances including accident, illness, or death in the family. In the event of extenuating circumstances, students should contact their instructor, who may assign an I (Incomplete), W, or F.

Withdrawal Process

After the end of the schedule adjustment period, a student who wishes to withdraw from a class should initiate the process by contacting the instructor, who will help with withdrawal procedures.

To withdraw from a face-to-face or hybrid class, the student must complete the following steps:

- Obtain a Student Course Withdrawal form from Enrollment Services or a faculty advisor and complete the form
- Obtain the instructor's signature on the form
- Return the form and present a photo ID to Enrollment Services on the Jamestown campus, the main office at the High Point or Greensboro campus, or the Aviation Center departmental office

If the course instructor is not available to sign the Student Course Withdrawal form, the department chair is authorized to sign the form.

Students receiving veterans' benefits must obtain the signature of the Coordinator of Veterans and Military Assistance Programs.

To withdraw from an online course, the student must email the instructor the following information:

- Student's full name
- Student ID number
- Course code and section number
- Reason for withdrawing from the course

The instructor will forward the student's email to Enrollment Services, which will process the withdrawal.

Students must submit the completed Student Course Withdrawal form or, in the case of an online class, email their instructor by the stated withdrawal date for the class. It is the student's responsibility to check the completion of the withdrawal on WebAdvisor.

Tuition and Fees Refunds

Registration obligates a student to pay tuition and any fees for the class. Non-attendance is not a basis for refund of tuition.

In compliance with State Board policy, GTCC will refund 100% of tuition and fees if the student officially drops the class before the first day of classes of the semester. GTCC will refund 75% of tuition only if the student officially withdraws from class on or after the first day of classes of the semester and prior to or on the class's census date. Fees such as the campus access/security/parking fee, lab/shop/clinic fee, physical education fee, student activity fee, technology fee, student accident insurance fee, and malpractice insurance fee are not refundable after classes start.

No refunds will be issued to students who withdraw from a course after the census date.

PLEASE NOTE: During the schedule adjustment period, if students drop and add a class with the same number of credit hours, both the drop and the add must be completed in the same registration session in order to receive full credit for the dropped class.

For additional info regarding the refund policy, please visit <http://www.gtcc.edu/refundpolicy>.

The college refund policy is established by the NC General Assembly and is subject to change without notice. Please allow six to eight weeks after the census date for a refund.

Special Refund Conditions for Title IV Federal Student Aid Recipients

Federal law sets special refund policies for students who receive Title IV federal aid. Students meet these conditions if they:

- Have been awarded Title IV federal aid (Federal Pell Grant, Federal Supplemental Educational Opportunity Grant, and/or Stafford loan or PLUS loan)
- Have stopped attending, withdrawn from, or have been expelled from all classes before 60% of the class was over or otherwise failed to complete the program

Students who meet these conditions must return federal Title IV funds in proportion to the amount of the semester not completed. For example, a student who withdraws at the 40% point of the semester must return 60% of federal Title IV funds awarded. If a balance is due to GTCC as a result of the refund, the student is responsible for payment.

VA students who stop attending class or participating in on-line classes may incur debt with the VA if prompt notification is not given to the school's VA Representative.

Please view the entire Return of Title IV Funds policy at <http://www.gtcc.edu/media/133555/returnoftitleivfundsprocedure.pdf>

Special Refund Conditions for State Grant Recipients

State law sets special refund policies for students who receive state grant funds. Students meet these conditions if they:

- Have been awarded a North Carolina Community College Grant and/or the North Carolina Education Lottery Scholarship
- Have stopped attending, withdrawn from, or have been expelled from all classes before 35% of the class was over or otherwise failed to complete the program

Students who meet these conditions must return state grant funds in proportion to the amount of the semester not completed. For example, a student who withdraws at the 20% point of the semester must return 80% of state grant funds. If a balance is due to GTCC as a result of the refund, the student is responsible for payment.

BILLING AND COLLECTION

Tuition

The North Carolina General Assembly sets tuition rates, which are subject to change without notice, for in-state and out-of-state students. Fees are established by the North Carolina General Assembly, the State Board of Community Colleges, and/or the GTCC Board of Trustees. Fees are also subject to change.

Types of Fees

- Campus access/security/parking fee: This fee provides for safety and security of all college properties and provides subsidies to encourage the use of public transportation. It is assessed each term to students registered for a minimum of one credit.
- Lab/shop/clinic fee: This fee provides for needs required in specific courses or programs.
- Physical education fee: This fee is assessed to students enrolled in classes held at a designated facility.
- Student activity fee: This fee covers activities and student publications. It is assessed in fall and spring terms to students registered for a minimum of one credit.
- Technology fee: This fee provides for technological needs of students. It is assessed to students registered for a minimum of one credit and to continuing education students.
- Student accident insurance fee: This insurance covers students in the event of an accident while on campus for classes and while taking part in official college sponsored activities.
- Malpractice insurance fee: This insurance is required by certain programs, including Certified Nursing Assistant, Cosmetology, Culinary Arts, Dental Assisting, Dental Hygiene, Early Childhood Education, Emergency Medical Science, Emergency Medical Technician, Human Services, Medical Assisting, Nursing, Physical Therapy Assistant, Radiography, Surgical Technology, Healthcare Management Co-op, Medical Office Administration Co-op, Office Administration Co-op, and Pharmacy Technology.

Student Account Statements

Account information is available on WebAdvisor under Financial Profile.

Past Due Account

Business Office holds are placed on student accounts with past due balances. Students are not allowed to register if they owe money to the college. GTCC can withhold transcripts, degrees, diplomas, and certificates until students have paid their college bills.

Collections

Delinquent accounts 90 days past due may be turned over to an outside collection agency for collection of the debt. The consequences for a student's account being turned over to collections are as follows:

- Student will be responsible for repayment of the outstanding debt plus collection costs, court costs, and attorney's fees related to the collection of all delinquent debts owed to the College.
- The North Carolina Department of Revenue may withhold the student's tax refund and remit it to the College as payment toward their outstanding debt.
- The student's account may be reported to one or more nationally-recognized credit-reporting bureaus.
- Arrangements for repayment must be made with the outside collection agency, not the College.

COURSES

Credit for Coursework

The regular academic year is divided into 16-week semesters in fall and spring and a 10-week summer session. Class duration varies by course and program. Information about term length for specific class sections is available on WebAdvisor during the registration period for the upcoming term.

For each period of lecture, a student is expected to spend at least two hours on outside preparation and homework.

In the interest of student success, the maximum number of credit hours of course work for which a student can enroll in one term is 21. If a student desires to take more than 21 credit hours of course work in one semester, the student must get signed approval from the department chair for the program in which the student is enrolled. In the absence of the department chair, the division chair may approve the request.

Course Numbering System

Courses in the North Carolina Community College System's Combined Course Library use a common numbering system. The first three letters form a prefix that indicates the subject of the course and the following three numbers indicate the specific course within that topic. Course numbers beginning with zero (0) indicate developmental level courses. Developmental courses teach skills necessary for success in college courses and do not provide college-level credit.

Transfer Credits

Transferring from GTCC

Students are responsible for determining the requirements of the institution and program to which they plan to transfer.

GTCC strongly encourages students to complete their program at GTCC before transferring to another institution. Students who transfer before earning an associate's degree will need to meet the UNC system's minimum admission requirements established for all high school graduates. Students who did not meet these requirements in high school and do not earn an associate's degree must meet the following requirements before they are eligible to transfer:

- Two general education social/behavioral science college transfer courses
- Two general education English college transfer courses (ENG 111 & ENG 112)
- Two general education lab science college transfer courses
- Two general education mathematics college transfer courses

General education college transfer courses are indicated in the charts beginning on page 13 and in the course descriptions starting on page 163. Descriptions for appropriate courses include the phrase: *This course has been approved for transfer under the CAA as a general education course in...*

Students who wish to transfer should contact the Admissions office of the institution they would like to attend as soon as possible. Communication with the university enables students to select the most appropriate courses for their program of study and transition smoothly to the university. Students are encouraged to inquire about foreign language requirements needed for their bachelor's degree program.

University admission application deadlines vary. Students must meet the application deadline for the university to which they plan to transfer. Admission criteria vary, and admission is competitive to majors and professional schools. Only courses in which the student has earned a C or higher will transfer.

Transferring to GTCC

GTCC accepts credits earned in academic programs from colleges and universities accredited by one of the following regional Associations of Colleges and Schools – Middle States, North Central, New England, Northwest, Southern, or Western.

As part of the application process, students should submit official transcripts from all colleges attended. Enrollment Services will determine the appropriate course equivalency for transfer credits. Credits will be evaluated on a course by course basis. If there is a question about the equivalence of a course being considered for transfer, Enrollment Services may require that the student supply additional documents such as a college catalog, course syllabus, or textbook list in order to determine whether credit should be awarded.

Students must have earned a grade of C or higher to receive transfer credit. Some transfer courses may require departmental approval before being accepted toward a program. If the department chair requires an exam to validate transfer credit, an exam grade of at least a C is required. Transfer GPA is not calculated or brought into the GTCC record, but is counted in the financial aid GPA calculation.

Transfer credit from international colleges is awarded on a case-by-case basis. A certified copy of an English translation of the transcript with credit hour and degree equivalents is required.

Students should send official transcripts to:

Guilford Technical Community College
Records Department
P.O. Box 309
Jamestown, NC 27282

To receive a degree from GTCC, the student must earn at GTCC one-fourth of the required hours in the degree program and one-third of the major course work applicable to graduation. Some programs may have time limits for transfer of certain courses.

Guilford Technical Community College Proficiency Exams

For certain courses, students who believe they have the knowledge and skills to demonstrate successful completion of student learning outcomes may demonstrate proficiency. Students should consult with an academic advisor or department chair to determine readiness for a proficiency demonstration.

To receive course credit by proficiency, the student must submit a brief written request for demonstration of proficiency to the appropriate department chair and include evidence of preparedness such as high achievement in secondary school, military service, or work experience. The student registers for the course and pays required tuition and fees. The department chair or Assessment Center then administers the proficiency examination. The evaluation of the demonstration will serve as the grade for the course.

Credit for proficiency may not be granted for a course being audited at the time of the proficiency demonstration. Proficiency demonstrations may be taken only one time in each subject area. A student may earn a maximum of 50% of credit toward graduation by proficiency.

College Level Examination Program (CLEP)

GTCC is an official test site for the College Level Examination Program (CLEP). The Assessment Center on the Jamestown campus administers all CLEP exams. Students enrolled at GTCC may receive credit for certain college courses by submitting official scores from the CLEP. Only scores of 50 or above will be approved for credit, and in some cases additional tests are required. Students may receive multiple course credits for foreign language exams, as determined by their exam score. More information about CLEP and the list of accepted subject matter examinations can be found at www.gtcc.edu/clep

Advanced Placement Tests

To receive college credit for Advanced Placement tests, students must request that an official copy of their AP test scores be sent to the GTCC Admissions Office. Only scores of three or higher will be approved for credit. AP tests in some subject areas may not be accepted for consideration if they are not applicable to the student's program.

Professional Certifications

The student should contact the department chair of the program to which the advanced standing credit may be applied upon enrolling at GTCC. The department chair will determine the GTCC course equivalencies and corresponding certifications required for credit. Students must submit their original professional certification or credential to the appropriate department chair. The department chair will complete the necessary paperwork and return the original document to the student.

GRADES

Final grades are available on WebAdvisor. They are not mailed.

Grade Point Scale and Grade Point Average (GPA)

A	Superior	90-100	four points per credit hour
B	Above Average	80-89	three points per credit hour
C	Average	70-79	two points per credit hour
D	Below Average	60-69	one point per credit hour
F	Failure	below 60	zero points per credit hour

The following are not included in GPA calculations

S	Satisfactory
U	Unsatisfactory
AU	Audit
I	Incomplete
W	Withdrew
X	Placeholder for AVI classes not completed to FAA standards

Grades are assigned based on work completed at the end of scheduled class time. Additional work after the end date of the class is not justified unless an Incomplete was assigned.

GTCC computes GPA using the four-point system and by adding the quality points earned for each course and dividing by the total number of credit hours for those courses.

Every student will have a program GPA, which is based only on courses in the student's program of study. Every student also will have a cumulative GPA, which includes all courses taken for credit at GTCC. To earn a degree, diploma, or certificate, students must have successfully completed all program requirements with a program GPA of 2.0 or higher and a grade of A, B, C, D, or S in each course in their program of study.

For information regarding grade appeals, please visit the GTCC website at <http://www.gtcc.edu>.

S & U Grades

An S indicates a student successfully achieved the outcomes expected for the course and completed the minimum requirements. An S corresponds to a grade between 70-100 in a course. A U means the student did not master the outcomes and/or complete the minimum requirements for the course. A U corresponds to a grade below 70. S and U grades are given in cooperative education and other designated courses.

AU Grade

An AU means a student audited the course and will receive no grade and no credit. To audit a course, students must indicate that they want to audit when they register or before the end of the schedule adjustment period for the term, or they must get the instructor's approval to change to an audit grade before the 5/8 point of class. Students are required to pay standard tuition rates for audited classes, which are not eligible for financial aid.

I Grade

An I indicates a student is passing a course but has not completed all required course work. Instructors decide whether to assign an I. Students must complete course work required to remove the I grade before the 5/8 point of the subsequent term. If the incomplete is not removed, the student will receive an F for the course.

W Grade

A W indicates a student withdrew from a course.

X Grade

Aviation Systems Technology uses the X grade as a placeholder for AVI classes that aren't completed to FAA Standards. A grade of X for AVI 110 is not a passing grade and does not satisfy state prerequisites.

Grade Prefixes

T	Transfer Credit
P	Proficiency Exam
R	Repeat
N	Course Forgiven

T Prefix

Credit transferred into GTCC will show grades with a T prefix. Only grades of C or better or S earn credit toward graduation. Transfer credits are not used when calculating GPA, except for the financial aid GPA calculation.

P Prefix

Courses completed by proficiency exam will show grades with a P prefix. Only grades of C or better or S earn credit toward graduation. Proficiency credits are not used when calculating GPA, except for the financial aid GPA calculation.

R Prefix

If students repeat a course, the letter grade earned in previous attempts to pass the course will have an R prefix. Only the highest grade earned will count toward graduation and be included in GPA calculations. This does not apply if students take a course for credit and then audit the course. Both the original and the repeated course grade will be used in GPA calculations for students who receive veteran's education assistance.

N Prefix

If a course is forgiven, the grade will have an N prefix. The course grade and credit hours are not used in GPA calculations, except for the financial aid GPA calculation.

NS indicates that a student was a no-show and did not attend any classes.

STUDENT ACADEMIC STANDING

President's List

The President's List includes all program students who complete at least 12 credit hours in the fall or spring semester or 9 credit hours for summer term and earn a 4.0 grade point average.

Dean's List

The Dean's List includes all program students who complete at least 12 credit hours in the fall or spring semester or 9 credit hours for summer term and earn a grade point average of less than 4.0 but no lower than 3.5 with no grade below a C.

Honors List

The Honors List includes all program students who complete at least two courses in the fall or spring semester for a minimum of six credit hours, but no more than 11 credit hours, or 6 credit hours and no more than 8 for summer term, and earn at least a 3.5 grade point average with no grade lower than a B.

Honor Roll Eligibility

A student who earns an incomplete (I) is not eligible for honor rolls. Grades of S, U, X, or AU will not be considered for honor rolls, and those courses will not be considered in the minimum hours for honor rolls. Grades earned in courses that do not carry credits but can be applied to graduation are not considered when determining honor roll classification.

Honor Roll Notification

Students are notified if they are named to an honor roll.

Phi Theta Kappa Honor Society

Phi Theta Kappa is the international honor society for two-year colleges. Alpha Pi Alpha is the GTCC chapter of Phi Theta Kappa. To be eligible for Alpha Pi Alpha, students must have earned 12 college-level credit hours at GTCC toward an associate's degree, successfully completed ENG 111 with a C or higher, and earned a 3.5 cumulative GPA or higher. Members must also maintain at least a 3.25 cumulative GPA. Students who are eligible to join Phi Theta Kappa are contacted in the fall and spring semesters. Phi Theta Kappa charges a fee for membership. Additional information about Phi Theta Kappa is available through Student Life. Membership in Alpha Pi Alpha is designated on the student's transcript and Phi Theta Kappa sends each member a certificate and membership number.

Standard of Academic Progress

To assist students with accomplishing academic goals, the college supports the process of reviewing academic progress. Good academic standing is defined as achieving a semester grade point average of 2.0 or higher.

The standard of academic progress exists to assist each student accomplish academic goals by:

- Alerting the student and the college of academic difficulties or deficiencies
- Providing an opportunity for the college to be of assistance to the student in setting and achieving academic goals
- Assisting the student in utilizing the facilities and personnel of the college
- Creating an atmosphere in which the student may be successful in the pursuit of an education

ACADEMIC REVIEW AND REFERRAL

At the end of each term, the college reviews the grade point average achieved by each student enrolled in six or more credits. Developmental education courses are not included in the attempted credit hours. If a student's term GPA is below 2.0, the student receives a letter of notification of academic status. The following statuses may be assigned:

Academic Warning

Students who earn a term GPA below 2.0 on six or more attempted credit hours are placed on academic warning. Students on academic warning are encouraged to meet with an academic advisor immediately to determine steps they can take to raise their GPA the following term. The academic status of a student on academic warning will be adjusted the following term based on academic performance:

Academic warning status is removed if the student earns a 2.0 GPA or higher for the term

Academic probation status is assigned if the student does not earn a minimum 2.0 GPA for the term

Academic Probation

Students are placed on academic probation after two or more consecutive semesters with a term GPA below 2.0 on six or more attempted credit hours. Students on academic probation are encouraged to meet with an academic advisor immediately to determine steps they can take to raise their GPA the following term. The academic status of a student on academic probation will be adjusted the following term based on academic performance:

- Academic probation status is removed if the student earns a 2.0 GPA or higher for the term
- Academic suspension status is assigned if the student does not earn a minimum 2.0 GPA for the term

Academic Suspension

Non-Health Program Students

A student will be subject to suspension after three consecutive semesters with semester GPAs below 2.0 on six or more attempted credit hours. The student will be suspended for one semester commencing at the end of the semester in which the student receives the suspension letter.

If the student earns a semester GPA of 2.0 or higher on six or more attempted credits in the semester the suspension letter is received, the suspension will be lifted, the registration hold will be removed, and the student may register for the following semester. A suspended student must meet with the program department chair to have the hold removed after the semester of suspension.

Health Program Students

Students in limited enrollment health programs must maintain a final grade no lower than C in each course with a prefix of BIO, CHM, DEN, EMS, MED, NAS, NUR, PHM, PHY, PTA, RAD, and SUR. Health students who earn a grade of D or F in any health or health related course will be suspended from the program at the end of the course in which the grade occurs. In addition, health program students who are not eligible to continue at clinical sites may be suspended.

Suspension Appeals

A student may appeal an academic suspension to the appropriate division chair prior to the last day to add classes for the semester in which the suspension takes effect. If a health program student is suspended at the midpoint of the semester (minimester), the student may appeal prior to the third day of the next minimester of that semester. During the appeal process, the student may register and attend classes until the final disposition of the appeal.

To appeal the decision, the student must complete the Academic Suspension Form and submit it to the division chair. The division chair will review pertinent records, such as the student's transcript, and may consult with faculty, counselors, the student, and others who can aid in the review process. The division chair will make a decision within five business days after receiving the appeal.

The division chair will render one of the following two decisions:

- Lift the suspension with or without provisions. All provisions will be monitored by the department chair.
- Let the suspension stand.

The division chair will notify the suspended student of the decision in writing within five business days. Once the decision has been communicated to the student, the division chair will notify the department chair, Enrollment Services, Financial Aid, Cashiers Office, Associate Vice President of Student Support Services, Registrar, and the Veterans Office. There is no further appeal beyond the division chair.

Students who register while appealing their suspensions will be required to pay normal tuition and fees. If an appeal is denied, the student will be entitled to a full refund of tuition and fees.

RECORDS

The college keeps all student files in a secured, fire-proof environment in Enrollment Services. All documents are scanned into imaging software for retention purposes.

Changes to Student Information

Students are responsible for notifying Enrollment Services of a change in name, address, or other directory information. Requests and grades can be delayed if this information is not accurate, and a registration hold may be placed on a student's account.

Records of Progress

Grades are available for students at the end of each term. Records of progress are available on WebAdvisor (log-in required) at <http://www.gtcc.edu/webadvisor>

Transcripts

Official GTCC transcripts may be requested online, by mail, or in person. Transcripts cannot be issued if the student has outstanding financial obligations to the college. More information about obtaining official transcripts is available at www.gtcc.edu/transcripts

Students may generate a free, unofficial copy of their transcript via WebAdvisor at <http://www.gtcc.edu/webadvisor>

Release of Information

The Family Educational Rights and Privacy Act (FERPA) (20 U.S.C. § 1232g; 34 CFR Part 99) is a Federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education.

FERPA gives parents certain rights with respect to their children's education records. These rights transfer to students when they reach the age of 18 or attend a school beyond the high school level.

Eligible students who wish to release student information to individuals or parties can complete the Consent to Release Student Information form at <http://www.gtcc.edu/media/29128/consentreleasestudentinfo.pdf>

For more details concerning FERPA, please visit the website of the US Department of Education at <http://www.gtcc.edu/ferpa>

Directory Information

Directory information is information not generally considered harmful or an invasion of privacy if disclosed.

GTCC, in compliance with the Family Education Rights and Privacy Act of 1974 (FERPA), also known as the Buckley Amendment, defines directory information as name, address, telephone number, field of study, most recent previous school attended, participation in officially recognized activities and sports, weight and height of athletes, dates of attendance, degrees, and awards. While FERPA includes date and place of birth, the College reserves the right to omit this from directory information to protect students from possible discrimination.

Disclosure of information other than directory information requires prior written consent of the student. The consent must specify records that may be disclosed, state purpose of disclosure, and identify party or class of parties to whom disclosure may be made.

Although directory information is not considered an invasion of privacy and there are exceptions that do not require prior consent from the student, inquiries should be referred to Enrollment Services.

Disclosure Exceptions

The 11 exceptions under which prior consent of the student is not required to disclose information are:

1. To school officials (persons within the agency or institution determined to have legitimate educational interest)
2. To schools in which a student seeks or intends to enroll
3. To Federal, State, and local authorities involving an audit or evaluation of compliance with education programs
4. To State and local authorities pursuant to a State law adopted before November 1974 requiring the disclosure
5. To organizations conducting studies for or on behalf of educational institutions
6. To accrediting organizations
7. To comply with a judicial order or subpoena. The college must make a reasonable effort to notify student in advance of compliance. Not all subpoenas are lawfully issued.
8. Health or safety emergency
9. Directory information
10. To the student
11. Results of disciplinary hearing to an alleged victim of a crime of violence

GRADUATION

Academic advisors and other college staff are available to help, but students have final responsibility for satisfying their program requirements.

Course Substitution

Students should complete all courses required for their program. To substitute a course for a program requirement, students must get the approval of their advisor and the appropriate department and division chairs, who will file the Course Substitution Form with Enrollment Services.

Eligibility Requirements

To be eligible for graduation, a student must have completed all program requirements, have a final program grade point average of at least a 2.0 and not owe the college any tuition, fees, or fines. The student must have earned at least one-fourth of the required program credit hours at GTCC and have taken at least one-third of the major course work required for graduation at GTCC. The student's last semester of course work must have been completed at GTCC.

Graduation Ceremony

A graduation ceremony is held every year for degree and diploma candidates. The college encourages all students who will graduate in the academic year to attend the graduation ceremony, even if course work is not completed by spring term. Students who elect not to attend may pick up their degree or diploma from Enrollment Services on the Jamestown campus during regular office hours beginning the day after the graduation ceremony.

Graduation Application

Students must apply for graduation to receive their degree or diploma, regardless of whether they attend the graduation ceremony. To receive a degree or diploma at the ceremony, students must apply before the graduation application deadline. Before applying, students should meet with their faculty advisor to ensure they have completed all requirements for graduation.

Graduation applications are available in Enrollment Services on the Jamestown campus, in the Academic Advising offices on the High Point or Greensboro campuses, or on the GTCC website. Students should complete the application forms, pay the graduation fee, and return the completed forms and receipt to the Enrollment Services counter in the Luther R. Medlin Campus Center or to an advisor on the Greensboro or High Point campuses. The Registrar's staff will compile the documents and certify that students are eligible to graduate after final grades have been posted. More information about graduation is available at <http://www.gtcc.edu/graduation>

STUDENT RESOURCES

Academic Advising Center

(336) 334-4822 + extension

Jamestown: Medlin Campus Center, Second Floor, ext. 50578

High Point: H1 #133, ext. 55023

Greensboro: Continuing Education Center #132, ext. 53059

<http://www.gtcc.edu/advising>

Email: advisingcenter@gtcc.edu

Academic Advising Centers are located on the Jamestown, Greensboro, and High Point campuses. Advisors are available to help students plan their schedules if they are registering for the first time and are undecided about a course of study. For students who have decided on a vocational or technical program, faculty advisors are available in each area to advise students with their course options and monitor their program plans. For students planning to transfer to a four-year college or university, advisors are available in the Advising Centers.

Academic Support Services

GTCC provides professional and peer tutoring in a variety of subjects at no cost to students. In addition, the college offers for-credit classes to help students build study skills.

Learning Assistance Centers

(336) 334-4822 + extension

Jamestown: ext. 50318, Email: lacjamestown@gtcc.edu

High Point: ext. 55048, Email: lachighping@gtcc.edu

Greensboro: ext. 53058, Email: lacgreensboro@gtcc.edu

<http://www.gtcc.edu/learningcenter>

Learning Assistance Centers offer support services for students enrolled in both developmental education and curriculum classes. Tutors offer assistance with coursework and help students to become independent and successful learners. Additionally, the LAC staff works with students to develop strong study skills, assist in better understanding of course content, enhance self-confidence, and promote a positive attitude toward learning. Tutoring through the LAC is free of charge.

Professional tutors are available to help on a walk-in basis in the areas of developmental English and math. Peer tutors are available by appointment for both developmental and curriculum classes. Peer tutors are currently enrolled students who have shown proficiency in the course in which they are tutoring, and have been recommended by their instructors to be a tutor.

The LACs provide supplemental instructional resources (web-based technology, audio-visual support and worksheets) in addition to instructor assistance, peer tutoring, and a quiet place to study.

Math Tutoring Lab

(336) 334-4822, ext. 50101
<http://www.gtcc.edu/learningcenter-math>

The math tutoring lab is staffed with students who have completed upper-level math courses. In the math lab, students can work in study groups, get one-on-one tutoring, or use a computer for math homework or research.

Student Success Courses

Student success courses have application for students in all programs. These courses cover skills and strategies designed to improve study behaviors. Some of the topics might include note taking, test taking, memory techniques, time management, reading strategies are a few examples. Emphasis is placed on achieving educational objectives. They are designed to strengthen students' chances of success in an academic and work setting. These courses count toward graduation and may provide transferrable elective credit. Student Success courses are offered under the ACA prefix.

Writing Center

(336) 334-4822, ext. 50584
<http://www.gtcc.edu/learningcenter-writing>

Writing Center consultants are available to assist students, faculty, and staff with any writing task - getting ideas, organizing information, finding information, attributing research, resumes, cover letters, grammar, and more. Students should bring their assignment, draft, notes, and other necessary materials to their tutoring session.

Assessment Center

(336) 334-4822 + extension
Jamestown: Medlin Campus Center #217, ext. 50262
High Point: H1 #133, ext. 55023
Greensboro: Continuing Education Center #132, ext. 53059
<http://www.gtcc.edu/assessment>
Email: testingcenter@gtcc.edu

GTCC's assessment services include placement testing, faculty arranged make-up testing, GTCC web-enhanced/online course testing, and testing services for students with disabilities. At the Jamestown location we also offer credit based testing (CLEP), limited enrollment testing (TEAS), WorkKeys testing, and Praxis practice.

Athletics

<http://www.gtcc.edu/athletics>

GTCC's intercollegiate athletic programs include women's volleyball, men's baseball, and men's and women's basketball. The Titans' athletic teams compete in the National Junior College Athletic Association.

Bookstore

(336) 334-4822 + extension
Jamestown: Medlin Campus Center, First Floor, ext. 50050
High Point: H1, ext. 55061
Greensboro Bookstore/Cashiers Office: Continuing Education Center, First Floor, ext. 53011
Aviation Center: AV1 #153, ext. 59021
<http://www.gtcc.edu/bookstore>

Students can buy books, supplies, technology items, and snacks at GTCC bookstores on the Jamestown, High Point, and Greensboro campuses, and the Aviation Center. Students can also order books online. The GTCC Bookstores are owned and operated by GTCC and all proceeds directly support GTCC student scholarships and activities.

Career Services

(336) 334-4822 + extension
Jamestown: Medlin Campus Center, Second Floor, ext. 50578
High Point: H1 #133, ext. 55023
Greensboro: Continuing Education Center #132, ext. 53059
<http://www.gtcc.edu/advisingcenter>
Email: advisingcenter@gtcc.edu

Career Services are available in the Academic Advising Center on the Jamestown campus. Students can find assistance with finding a full-time or part-time job, writing a résumé, preparing for interviews, brushing up on job seeking skills, assessing their career interests, and using a library of career resources. Career Services sponsors a job fair each year that is open to students and to the community.

Children's Center

Jamestown Campus
(336) 334-4822, ext. 50245
<http://www.gtcc.edu/childcare>

The Children's Center provides full-day child care for children who are six weeks to 5 years of age. The Center is a 5-star rated center and offers a developmentally appropriate program with a wonderful and caring staff. The Center gives priority admission to children of GTCC students, faculty and staff. Space is limited and children are accepted on a first-come first-served basis. The Center does not provide drop-in care. Vouchers from the Department of Social Service, Partnership for Children, and NACCRRRA are accepted, as well as payments from outside vendors. Financial Aid does not pay directly to the Children's Center, but child care is an eligible expense to consider.

Cline Observatory

Jamestown Campus
(336) 334-4822, ext. 50023
<http://www.gtcc.edu/observatory>

Cline Observatory is equipped with a professional quality 16-inch reflecting telescope housed under a 6-meter rotating dome that allows visitors to view the moon, planets, star clusters, nebulae, and galaxies. Anyone can visit the observatory on any clear Friday night. Throughout the year, the observatory presents special lectures and events, including TriStar, an annual festival of astronomy held in March, and the annual Fall Astronomy Day Lecture. All observatory programs are free.

Computer Labs

Computer labs for student use are available in various locations on the Jamestown, High Point, and Greensboro campuses.

Cosmetology Services

Jamestown Campus
Service Careers, Second Floor
(336) 334-4822, ext. 50110
<http://www.gtcc.edu/cosmetology>

The Cosmetology department trains students to work in the cosmetology field. Cosmetology students offer services such as haircuts, shampoo and sets, facials, hair color, highlights, permanent waves, chemical hair relaxing, and manicures/pedicures at economical prices. Services are offered in day and evening salon clinics.

Counseling Services

Jamestown Campus Counseling Center
Davis Hall #107
(336) 334-4822, ext. 50038
<http://www.gtcc.edu/counseling>
Email: askthecounselor@gtcc.edu

The Counseling Center serves students on the Jamestown, High Point, and Greensboro campuses. Counseling services include personal counseling, screening and assessment, crisis intervention, support groups, outreach and referral, and workshops on topics relevant to student success.

The staff consists of professionally trained, master's degree level, nationally certified counselors who have extensive experience in the field of student development. Counselors are committed to helping students reach their potential through education and personal growth. The Counseling Center places a high priority on privacy and confidentiality. Services are available free of charge to current students.

Appointments are preferred; however, walk-ins are always welcome.

Culinary Dining

Jamestown Campus
Koury Hospitality Careers Center
(336) 334-4822, ext. 50452
<http://culinary.gtcc.edu>
Email: culinarydining@gtcc.edu

Culinary Arts and Hospitality Management students prepare and serve meals to the public, GTCC faculty and staff, and GTCC students at low cost. During the fall and spring semesters, lunch is served twice a week at noon and dinner is offered twice a week at 7:00 pm. During three weeks of the summer session, lunch is served twice a week and dinner is served once a week. Reservations are required.

Dental Clinics

Jamestown Campus
Dental Science Building
(336) 334-4822, ext. 50251
<http://www.gtcc.edu/dentalHygiene>

The Dental Hygiene and Dental Assisting programs operate a clinic as a learning lab for students. The Dental Hygiene clinic provides treatment during fall, spring, and summer semesters and includes cleaning, X-rays, fluoride treatment and preventative services. The Dental Assisting clinic provides limited dental restorative treatment, x-rays and preventative services during the spring semester. Rates for services offered by the clinics are nominal.

disAbility Access Services

(336) 334-4822 + extension
Jamestown: Davis Hall #107, ext. 50157
High Point: H1, ext. 55059
Greensboro: Continuing Education Center #128, ext. 53021
TTY phone number: (336) 841-2158
<http://www.gtcc.edu/disability>
Email: das@gtcc.edu

disAbility Access Services helps students who have disabilities. To receive services, students must provide documentation of their disability and request accommodations in a timely manner. Services include but are not limited to the following: sign language interpreters, note takers, scribes, voice output, alternative format textbooks, testing accommodations, and adaptive equipment.

e2Campus Alert System

<http://www.gtcc.edu/e2campus>

e2Campus is a voluntary service that notifies students by text or email of inclement weather or any situation that may close down a building or campus.

Financial Aid Programs

Financial Aid Office

Jamestown: Medlin Campus Center, Second Floor

(336) 334-4822 ext. 31186

<http://www.gtcc.edu/financial-aid>

Email: finaid@gtcc.edu

Student financial aid is based on demonstrated financial need, academic achievement, ability or academic major. GTCC awards financial aid without regard to race, religion, color, national origin or sex. To receive financial aid, you must demonstrate need and maintain good academic standing.

Federal regulations allow that only the first thirty (30) hours of attempted developmental coursework is used to determine your eligibility for financial aid. Once you have attempted thirty (30) remedial hours, only non-developmental college credit courses can be used to determine your eligibility for aid.

Types of Aid Available

Federal Pell Grant: A federal government grant based on financial need as determined by the FAFSA and awarded to college undergraduates who have not yet earned a bachelor's degree. Students are eligible to receive Federal Pell Grants for a maximum of the equivalent of 12 full time semesters over a lifetime. This includes courses taken at all institutions attended - past, present, and future.

Federal Supplemental Educational Opportunity Grant (FSEOG): A federal grant available for students with exceptional financial need as determined by the FAFSA.

North Carolina Community College Grant (NCCCG) & North Carolina Education Lottery Scholarship (ELS): Programs for students who are legal residents of North Carolina, are enrolled at least half-time, and have Federal Pell Grant eligibility that does not exceed a certain amount set each year, or do not financially qualify for the Federal Pell Grant, but do demonstrate a substantial need as defined by the State each year. State grants are not available in the summer.

Scholarships: Financial awards from federal, state, local, and GTCC sources based on financial need, academic performance, and/or time of application. Some scholarships are open to all students while others are open to students in certain program areas. For a list of scholarships, visit <http://www.gtcc.edu/scholarships>

Federal Student Loans: Loans provided by the federal government based on financial need as determined by the FAFSA. Federal loans include Stafford loans, which are subsidized and unsubsidized, and PLUS Loans, which are for parents. To be eligible for a student loan, students must be enrolled at least 1/2 time (six credit hours) and maintain satisfactory academic progress. For additional federal student loan information, visit <http://www.gtcc.edu/applyFederalLoans>

Emergency Student Loans: Loans under the amount of \$250 to help students through qualifying emergency situations. For more information about emergency student loans, visit <http://www.gtcc.edu/emergencyLoan>

Federal Work Study: A program funded by the federal government that allows students to work part-time for GTCC. If students are eligible for Federal Work Study, as determined by the FAFSA, they may electronically apply for a part-time Federal Work Study position at GTCC. For more information, please visit <http://www.gtcc.edu/financial-aid/how-to-apply/apply-for-federal-work-study>

Satisfactory Academic Progress for Students who Receive Federal Aid

To receive financial aid, students must meet GTCC's guidelines for satisfactory academic progress on page 301.

In addition, if students receive financial aid through the Financial Aid office, they must maintain a cumulative 2.0 grade point average, complete at least 67 percent of all credit hours attempted, and complete their program of study within 1 ½ times the normal credit hours required to complete the program.

The Financial Aid office will check students' grades and progress at the end of each semester to be sure they meet the standards for Satisfactory Academic Progress. If students do not meet these standards, they will not be eligible for financial assistance programs, or they may be placed on a one-semester warning period during which they must meet the minimum standards or lose their eligibility for financial aid. Once students have earned a degree at GTCC, they may not be eligible for further financial aid. Please view the entire satisfactory academic progress policy at <http://www.gtcc.edu/media/73984/sappolicy.pdf>

Food Service

Titan Café: Jamestown Campus

Medlin Campus Center, Ground Floor

Titan Café is a 200-seat cafeteria that serves breakfast and lunch during the fall and spring semesters.

All GTCC campuses have vending machines that sell beverages and snacks.

GTCC Police

(336) 334-4822 ext. 52529

Jamestown: Medlin Campus Center #101

High Point: H1 #121

Greensboro: Continuing Education Center #148

Aviation: Aviation II #109

<http://www.gtcc.edu/campus-police>

GTCC police are sworn North Carolina law enforcement officers who enforce North Carolina criminal and traffic laws in addition to college rules and regulations. The GTCC police department oversees emergency and safety procedures, traffic and parking, and lost and found. They also provide student parking permits.

International Student Office

Jamestown: Medlin Campus Center #201
(336) 334-4822, ext. 50076
<http://www.gtcc.edu/internationalstudents>

The International Student Office offers a variety of services and activities for international students, including admissions, assistance with immigration requirements, advising, community referrals, and enrollment verification letters, among other services. Appointments are preferred, though walk-ins are welcome.

Libraries

(336) 334-4822 + extension
Jamestown: Learning Resource Center, ext. 50290
High Point: H4 #216, ext. 55052
Greensboro: Adult Education Center #224, ext. 53063
<http://www.gtcc.edu/library>
Email: eref@gtcc.edu

GTCC libraries offer students over 80,000 print and audiovisual items, in addition to professional librarian service 24/7 through a chat box on the library website. The libraries also provide digital access to premium content journals, books, streaming videos, audio books, eBooks and more. Most library services may be accessed at no cost to students, off-campus, through the library website.

The libraries have open computer labs with full access to library resources, Microsoft Office, the Internet, and other software related to course work. The Jamestown campus also has laptop computers available for use within the library. Printing is available at a nominal cost with a print card purchased at the bookstore. All campus libraries offer wireless access and space for quiet study.

Using a student ID card, students can borrow materials from GTCC libraries and most college libraries in the Triad area. Inquire at one of the GTCC libraries for more details.

Librarians and library staff are available to assist students with research, assignments, studying, or recreational reading. Students may reach them by phone, email, and chat box, or in person. In addition, free computer literacy courses on such challenges as how to set up research papers are available at each campus library.

Online Classes/Classrooms

<http://www.gtcc.edu/elearning>
Moodle (online classrooms): online.gtcc.edu

GTCC supports both instructors and students in their use of electronic means of instruction through Moodle, GTCC's learning management system. Students may use Moodle in traditional face-to-face, webbed, or online courses.

- Instructors in face-to-face courses use Moodle to post resources and deploy assignments.
- Webbed courses blend classroom and online instruction. Students in a webbed course are expected to complete homework assignments in addition to completing online activities.
- Online courses allow students to complete course work without coming to campus in most situations. GTCC assumes that students who sign up for one or more online courses have access to their own healthy computer with a strong internet connection.

Students interested in completing their program completely online should read the eDegree Program section on page 295 and visit the eDegree website: <http://www.gtcc.edu/edegrees>

eLearning Introduction

eLearning Introduction is a Moodle site that provides instruction on GTCC's online systems. Instructors may require students to complete eLearning Introduction and upload a certificate of completion. Students should keep a copy of their certificate of completion for future semesters.

Technical Assistance

Please note that only your instructor can provide you course-specific assistance such as quiz resets or assignment submission issues. For general help with online systems, visit <http://www.gtcc.edu/elearning-help>.

Student Life

Jamestown: Medlin Campus Center #132

(336) 334-4822, ext. 50517

<http://www.gtcc.edu/student-life>

The purpose of the Student Life Office is to enhance student learning by providing leadership development opportunities, volunteer experiences, and membership in student clubs. The Student Life Office publishes the Student Handbook, which is distributed to students free of charge. Student Life also houses Clubs and Organizations, the Food Pantry/Garden, and the Student Government Association.

Clubs and Organizations

Titan Cruiser: <http://www.gtcc.edu/titancruiser>

GTCC sponsors program-related and general-interest clubs for students. Clubs sponsor speakers, plays, talent shows, fund-raising activities, leadership opportunities and other ways for students to get involved in the campus community. A complete list of clubs and organizations is available on Titan Cruiser under the Student Life Tab.

Food Pantry/Garden

(336) 334-4822 + extension

Jamestown: Medlin Campus Center #010, ext. 50480

High Point: H3 #110, ext. 55060

Greensboro: Campus Center #103, ext. 53070

<http://www.gtcc.edu/food-pantry>

The Food Pantry is available to students, staff or faculty in need on all of our campuses. There is also a Food Pantry Garden located on the Jamestown campus where fresh fruit and vegetables are available to those utilizing the Pantry.

Student Government Association (SGA)

Jamestown: Medlin Campus Center #010

(336) 334-4822, ext. 50480

<http://www.gtcc.edu/student-government>

The Student Government Association promotes represents the student body's interests, needs and concerns, and keeps students informed about issues that affect them. It also has the responsibility to program events, such as comedians, novelty activities, and lecturers for the campus community to enjoy. The SGA is run by students and all curriculum students are considered members. Students are encouraged to participate in the SGA as officers or board members.

The president of the Student Government Association (SGA) of GTCC is an ex-officio, non-voting member of the college's Board of Trustees. The presidents of both the college and of SGA appoint students to serve on institutional committees, and students are encouraged to serve on many of the standing committees of the college. Students may make recommendations for changes to the college administration through the SGA, their representative body.

Transportation

High Point Transit System: <http://www.highpointnc.gov/hi-tran>

Greensboro Transit Authority: <http://www.greensboro-nc.gov/index.aspx?page=2182>

High Point Transit System (Hi TRAN)

The Jamestown Campus is also serviced by HI TRAN (High Point Transit) Route 25. The first stop at GTCC Jamestown Campus is at 7:45 a.m. and the last departure from GTCC Jamestown Campus via HI TRAN is 4:45 p.m. There is no Saturday or Sunday service on this route. GTCC's High Point campus is serviced by Route 11 of HI TRAN. The first stop for GTCC is at 6:18 a.m. and ends at 6:18 p.m.

Greensboro Transit Authority

GTCC's Greensboro Campus is served by Route 10 of GTA. The actual stop is Penry and Wendover. Buses make their first stop at 5:31 a.m. Between 6:24 a.m. and 6:54 p.m. buses run every 30 min at 24 and 54 past the hour.

GTCC provides a limited number of bus passes to students.

Veterans/Military Services

Jamestown Campus Center: Medlin Campus Center, Second Floor

(336) 334-4822, ext. 50521

<http://www.gtcc.edu/military-assistance>

The office of Veterans and Military Assistance Programs assists veterans and students serving in the military. The office handles Veteran Affairs educational paperwork and certification for educational benefits through the VA.

The Department of Veterans Affairs offers educational assistance to eligible individuals in the following programs:

- Post-9/11 GI-Bill/Chapter 33 - This benefit provides up to 36 months of education benefits. The benefit pays the school's in-state tuition & fees, and pays the student a housing (BAH) and book allowance. The Post-9/11 GI Bill® also offers some service members the opportunity to transfer their GI Bill® to dependents.
- Montgomery GI Bill® - This benefit encompasses both the Montgomery GI Bill® (MGIB) Active Duty (Chapter 30) & the MGIB-Selected Reserve (Chapter 1606). Under Chapter 30, Active Duty members contribute a \$100 a month for 12 months and are entitled to receive a monthly education benefit once they have completed a minimum service obligation. Under Chapter 1606, reservists must be actively drilling and have a 6 year obligation in the Selected Reserve to be eligible.
- Reserve Educational Assistance (REAP)/Chapter 1607 is a Department of Defense education benefit program designed to provide educational assistance to members of the Reserve components called or ordered to Active Duty in response to a war or national emergency (contingency operation) as declared by the President or Congress.
- Survivors & Dependents Assistance (DEA) Chapter 35 - Dependents' Educational Assistance provides education and training opportunities to eligible dependents of certain veterans. The program offers up to 45 months of education benefits.
- Veterans Retraining Assistance Program (VRAP) - The VRAP program offers 12 months of education and training assistance to veterans who are at least 35 but no more than 60 years old and are unemployed at the time of application. Veterans must have received an other-than-dishonorable discharge and not be eligible for any other VA education benefit. VRAP pays the student, who must be enrolled full-time in a community college or technical school. VRAP students must be enrolled in a program which will lead to a high demand occupation as outlined by the Department of Labor.
- Vocational Rehabilitation & Employment Service (Voc Rehab) Chapter 31 - This program assists veterans with service-connected disabilities to prepare for, find, and keep suitable jobs through education and training. Veterans should meet with a Voc Rehab Counselor for a comprehensive evaluation to determine if they are entitled for services.
- Tuition Assistance (TA) - Tuition Assistance may be provided to eligible Active Duty and Reserve members through their respective military units. Service members should consult with their units for availability and eligibility requirements.

To receive veterans' benefits, students must complete an admissions file, follow their prescribed program plan in the catalog, and maintain satisfactory academic progress, attendance, and conduct.

If students receiving veterans' benefits drop or withdraw from classes, they are required to report this change in hours to the GTCC Veterans/Military Assistance Programs Office. Students' benefits will be reduced for the rest of the semester unless they have circumstances which are approved by the Veterans/Military Assistance Programs Coordinator.

Independent courses must be approved by the Veterans/Military Assistance Programs Coordinator prior to enrollment. The Department of Veterans Affairs will not pay for courses that are audited.

Students receiving veterans' benefits through the Department of Veterans Affairs must maintain a 2.0 grade point average (GPA). Students whose GPA falls below the required 2.0 will be placed on Academic Probation. If the GPA remains below 2.0 after the second semester of study, the student will be placed on Academic Suspension from Veterans' Benefits until the required 2.0 GPA is achieved.

WebAdvisor/Titan Cruiser

WebAdvisor: <http://www.gtcc.edu/webadvisor>

Titan Cruiser

<https://www.gtcc.edu/titancruiser>

WebAdvisor is the web-based system through which students can register for classes, view grades, review their program evaluation, and make payments for courses. Titan Cruiser is an information portal for students that provides email, access to news, college announcements, college calendar, classes, and clubs.

SPECIAL PROGRAMS INCLUDING BUSINESS AND COMMUNITY RESOURCES

Adult Education

Adult Basic Education (ABE)

(336) 334-4822 + extension

High Point: H3 #124, ext. 55066

Greensboro: Adult Education Center, ext. 53107

<http://www.adultbasic-education>

The Adult Basic Education (ABE) Program is designed to help adults improve basic reading, writing, and math skills. ABE classes are held on the High Point and Greensboro campuses, as well as in many other locations throughout the community.

Adult High School (AHS)

(336) 334-4822 + extension

High Point: H3 #124, ext. 55008

Greensboro: Adult Education Center, ext. 53049

<http://www.adultbasic-education>

The Adult High School (AHS) Program is for adults who want to earn a high school diploma. Students must provide an official transcript from the last school attended, maintain strict attendance, and complete 24 credits to receive a diploma. AHS classes are held on the High Point and Greensboro campuses, as well as in many other locations throughout the community.

Compensatory Education (CED)

(336) 334-4822 + extension

High Point: H1 #129, ext. 55010

Greensboro: Adult Education Center, ext. 53084

<http://www.gtcc.edu/compensatoryEducation>

Compensatory Education (CED) is designed specifically for adults with intellectual disabilities. CED classes will help students to develop, improve, or master skills needed to function as independently as possible in the community and the workplace. Classes are held both on and off-campus. Compensatory Education students must be 17 years of age or older and must have a written diagnosis of an intellectual disability from a medical doctor, psychologist, or psychiatrist. CED classes are held on the High Point and Greensboro campuses, as well as in many other locations throughout the community.

English for Speakers of Other Languages (ESOL) or (ESL)

(336) 334-4822 + extension

High Point: H4 #128, ext. 55001

Greensboro: Adult Education Center, ext. 53038

<http://www.gtcc.edu/otherlanguages>

English for Speakers of Other Languages (ESOL) is for adults whose first language is not English. Students can improve their listening, speaking, pronunciation, reading, and writing skills. GTCC offers free basic, beginning, intermediate, and advanced level courses, as well as TOEFL (Test of English as a Foreign Language) preparation and citizenship classes. At the High Point campus, we also offer classes that help prepare students to take the General Educational Development (GED) test in Spanish.

General Education Development (GED)

(336) 334-4822 + extension

High Point: H3 #124, ext. 55043

Greensboro: Adult Education Center, ext. 53107

<http://www.gtcc.edu/GED>

The General Education Development (GED) Program is a self-paced, flexible program that prepares adults 18 years and older who want to earn a high school equivalency diploma. The GED diploma is the legal equivalent of a traditional high school diploma and serves the same purpose in meeting most college admissions and job requirements. GED classes are held on the High Point and Greensboro campuses, as well as in many other locations throughout the community. The GED test will change in 2014, and scores from the previous version of the test will expire at the end of 2013.

Business and Community Resources

Business and Industry Services

(336) 334-4822, ext. 57001

<http://www.gtcc.edu/the-center-for-business-and-industry.aspx>

<http://www.gtcc.edu/the-center-for-business-and-industry/corporate-training>

Email: corporatetraining@gtcc.edu

Business and Industry Services provides customized training for business and industry to meet specific needs. Programs range from a single course to a series of courses designed for a particular job area. Sample topics include computer skills, leadership and professional development, and technical and job-related training.

Occupational Training

GTCC offers a variety of non-credit programs to help adults develop job skills.

GTCC provides pre-licensing and post-licensing courses in real estate and insurance, and pre-licensing courses in nursing assistant 1 (CNA) and notary public. The college also offers continuing education credits for teacher re-certification and certifications for project management as well as many high-end information technology programs.

GTCC offers computer classes ranging from basic computer skills to advanced classes for professionals in the IT field. The Quick Jobs program offers job preparedness skills training in 90 days or less at affordable prices.

Personal Enrichment Classes

<http://www.gtcc.edu/personal-enrichment.aspx>

GTCC offers a wide range of affordable, non-credit courses for personal enrichment that held on campus as well as convenient off-campus locations. Most courses are offered evenings and weekends, and some courses are available online. Subject areas include arts and crafts, cooking, communications and human relations, dance, driving, health, fitness, home and garden, financial planning, foreign language, music, needlework, photography, quilting, sewing, and other special interest courses.

Small Business Center

1451 S. Elm Eugene Street, Suite 1201

Greensboro, NC 27406

(336) 334-4822, ext. 62001

Email: sbc@gtcc.edu

<http://tinyurl.com/gtccsbc>

The mission of the Small Business Center is to increase the success rate and the number of viable small businesses in North Carolina by providing high quality, readily accessible assistance to prospective and existing small business owners and their employees. The Small Business Center provides classes, small business counseling, and referrals to community resources.

High School Programs

Career and College Promise Initiative

(336) 334-4822, ext. 50562

<http://ccpi.gtcc.edu/>

Career & College Promise offers North Carolina high school students a clear path to success in college or in a career. The program is free to all students who maintain a B average and meet other eligibility requirements.

Career and College Promise students can earn:

- College credit completely transferrable to all UNC system institutions and many of NC's independent colleges and universities
- A credential, certificate or diploma in a technical career
- A high school diploma and two years of college credit in four to five years through innovative cooperative high schools (limited availability)

Early/Middle Colleges at GTCC

Jamestown: <http://www.gcsnc.com/education/school/school.php?sectionid=7035>

Greensboro: <http://schoolcenter.guilford.k12.nc.us/education/school/school.php?sectionid=13478>

High Point: <http://www.gcsnc.com/education/school/school.php?sectiondetailid=38963>

The GTCC Early/Middle Colleges are alternative high school completion programs in partnership with Guilford County Schools. The Early/Middle College is designed for students whose needs are not met in the traditional high school setting. Early/Middle College students must be referred and approved by Guilford County Schools prior to enrollment in the Early/Middle College at GTCC. Early/Middle College students are eligible to receive dual credit that will be applied toward a high school diploma and a college degree.

STUDENT RIGHTS & RESPONSIBILITIES

Campus Safety & Clery Act

Guilford Technical Community College is concerned about the safety, welfare, and protection of all students, faculty, staff, visitors, and college property. The college is committed to providing a safe and secure environment for everyone. A college community, like any other community, experiences accidents, crimes, and injuries. No wall exists to protect the college from dangers that exist in the surrounding community. Unfortunately, absolute safety cannot be guaranteed to anyone. Therefore, students, staff, and visitors are also responsible for taking measures to protect themselves and their possessions.

The GTCC Police Department holds crime prevention programs to promote primary crime prevention and awareness to the college community. Anyone wanting more information about these crime prevention programs should contact GTCC Police at (336) 334-4822 ext. 52529.

In November 1990, the Crime Awareness and Campus Security Act (Title II, Public Law 101-542) was signed into law. This law requires colleges and universities to produce and make available certain policy statements and statistics about campus crime. In November 1999, this Act was renamed The Jeanne Clery Disclosure of Campus Crime Statistics Act or simply, The Clery Act.

By October 1 of each academic year GTCC publishes an annual security report that informs current students and employees of:

- Safety and security policies, procedures, and practices
- Reported crime statistics from previous three years

Members of the GTCC community are encouraged to use this report as a guide for safe practices on and off campus. It is available on the web at: <https://www.gtcc.edu/media/190870/2012clerysr.pdf>.

The Clery Act report is found in its entirety at: <http://www.ope.ed.gov/security/search.asp>

Emergencies

If a student presents a threat to the health, safety or well-being of any member of the college community or any visitor, college employees should call a GTCC police officer at (336) 334-4822 ext. 52529 or a local law enforcement agency with jurisdiction by dialing 911 if a GTCC police officer is not available. A College employee can ask the student to cease their unlawful/dangerous action and should report this action to the Chief Disciplinary Officer (Jamestown) or Campus Dean (Greensboro/High Point).

Title IX

The Title IX Amendment states, "No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving federal financial assistance." As a student, Title IX allows you to participate in any club organizations, athletics, or major in any field of study. If you have any questions about Title IX, please contact the Associate Vice President of Student Support Services in room 320 of the Medlin Campus Center on the Jamestown Campus.

Sexual Harassment and Sexual Violence

Guilford Technical Community College values the health and safety of every individual on campus and expects its employees and students to treat other persons with respect and dignity. Sexual harassment or violence will not be tolerated.

Employees engaging in sexual violence or harassment are subject to disciplinary action up to and including dismissal. Students engaging in violence or harassment are in violation of the college's Student Conduct Policy and this type of behavior will result in sanctions against the student ranging from interim suspension to expulsion. Disciplinary action by the college does not preclude the possibility of criminal charges.

All students, employees, and others on campus have a duty to report incidents of sexual violence or harassment to Campus Police or another college official as soon as possible after they are observed. The college will respond to complaints of sexual violence or harassment by taking immediate action to eliminate the sexual violence or harassment, prevent its recurrence, and address the effects.

1. In compliance with Title IX regulations, the college has:
 - a. Disseminated this and other notices of nondiscrimination indicating that the college does not discriminate on the basis of sex.
 - b. Designated at least one employee to coordinate its efforts to comply with and carry out its responsibilities under Title IX.
 - c. Adopted and published grievance procedures providing for prompt and equitable resolution of student and employee complaints of sexual discrimination including sexual violence or harassment.
2. The Associate Vice President for Student Support Services, located in Medlin Campus center office 320, will serve as the college's Title IX Coordinator for students. The Director of Human Resources, located in Medlin Campus Center office 370, will serve as the college's Title IX Coordinator for employees. Any inquiries regarding Title IX will or may be referred to the appropriate Title IX Coordinator or the Office of Civil Rights.
3. Victims of sexual assault should do the following:
 - a. Go to a safe place as soon as possible.
 - b. Call 50911 from on campus. Call 911 from off campus. Either Campus Police or a local police agency will respond if the alleged assault occurred on one of the GTCC campuses.
 - c. Stay on the phone with the dispatcher as long as you are needed. Call someone you trust, such as a friend or relative, to help and support you.
 - d. The preservation of physical evidence may be critical for successful prosecution of the offender.
 - i. Do not change clothes. If you do, put the clothing you were wearing in separate paper bags (not plastic) and take them to the hospital. This clothing may be used as evidence for prosecution. If you wear the clothes to the hospital, bring a change of clothes with you. Most physical evidence cannot be recovered after seventy-two hours.
 - ii. Do not clean your body or your clothes. Preserve all physical evidence. Do not wash, bathe, douche, comb your hair, or use the toilet if you can help it. Washing might be the

first thing you want to do, but don't. You literally might be washing away valuable evidence. Wait until after you have a medical examination.

- iii. Do not alter or disturb the crime scene. Leave tables, fixtures, grass, etc., as they were after the assault so that investigators may view the area. Ideally, evidence should be collected within twenty-four hours of the assault.
 - iv. Campus Police will need your assistance to make a crime report. You may ask for a victim advocate to be present during the report-taking. GTCC has a trained group of counselors who will support you and can assist you in accessing medical and counseling services, and reporting the incident.
 - v. You have the right to file a Title IX sex discrimination complaint with the college's Title IX Coordinator in addition to filing a criminal complaint.
4. Sexual offenders are subject to arrest, prosecution through the state courts, and incarceration. Student sexual offenders are subject to college disciplinary proceedings that may result in permanent expulsion from GTCC. (See Student Conduct Policy above)
 5. In any college disciplinary proceeding that may occur pertaining to an incident of alleged sexual discrimination including complaints of sexual violence or harassment, the college will provide:
 - a. An adequate, reliable, and impartial investigation of the complaint.
 - b. Changes in the victim's schedule to try to avoid contact with the accused if necessary and possible.
 - c. A designated and reasonable prompt time frame for conducting the investigation, being notified of the outcome, and appealing, if applicable.
 - d. An equal opportunity for both parties to present witnesses and other evidence.
 - e. If there is a pending criminal charge against the accused or against any witness, the accused or witness against whom such a charge is pending may be accompanied to the hearing by a licensed attorney, who may confer with the accused or witness during the hearing, but may not address the committee, any other parties, or any other witness.
 - f. Any individual, including an attorney, who delays or disrupts the proceedings, may be excluded from further participation.
 - g. In its Title IX investigation of a sexual violence or harassment claim, the college will use a "preponderance of the evidence standard" (it is more likely than not that sexual harassment or violence occurred).
 - h. A notice to both parties of the outcome of the complaint.
 - i. Assurance that the college will take steps to try to prevent recurrence of any sexual violence or harassment and that the college will not tolerate retaliation relating to such complaints.

Student Grievance Policy

For information regarding student grievances, please visit the GTCC website at <http://www.gtcc.edu>.

Student Code of Conduct

For information regarding student conduct, please visit the Student Handbook on the GTCC website at <http://www.gtcc.edu/students>

GTCC FACTS

Accreditation

Guilford Technical Community College is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools (1866 Southern Lane, Decatur, Georgia 30033-4097; Telephone number 404-679-4501) to award Associate Degrees. GTCC is approved as a veterans training institution by the Veterans Administration. Accreditation documentation is available in the President's Office.

In addition, these career-technical programs are accredited by the following agencies:

Automotive Systems Technology:

National Automotive Technicians Education Foundation (NATEF), Automotive Student Service Educational Training (ASSET), Automotive Service Educational Program (ASEP)

Aviation Systems Technology:

Federal Aviation Administration (FAA)

Aviation Electronics Technology:

Federal Aviation Administration (FAA)

Aviation Management and Career Pilot:

Federal Aviation Administration (FAA)

Collision Repair & Refinishing Technology:

National Automotive Technicians Education Foundation (NATEF), Inter-Industry Training for Automotive Collision Repair (ICAR)

Cosmetology:

North Carolina State Board of Cosmetic Art

Criminal Justice Technology:

Criminal Justice Education and Training Standards Commission

Culinary Technology:

American Culinary Federation Educational Institute Accrediting Commission

Dental Assisting:

Commission on Dental Accreditation (CODA)

Dental Hygiene:

Commission on Dental Accreditation (CODA)

Early Childhood Education:

National Association for the Education of Young Children (NAEYC)

Emergency Medical Science:

Committee for Accreditation of EMS Programs (CoAEMSP) (*pending*)

Heavy Equipment and Transport Technology:

National Automotive Technicians Education Foundation (NATEF)

Medical Assisting:

Medical Assisting Education Review Board (MAERB) – A committee of Commission on Accreditation of Allied Health Education Programs (CAAHEP)

Nursing:

North Carolina Board of Nursing (NCBON)

Physical Therapy Assistant:

Commission on Accreditation in Physical Therapy Education (CAPTE)

Radiography:

Joint Commission on Education Radiologic Technology (JCERT)

Surgical Technology:

Accreditation Review Council on Education in Surgical Technology and Surgical Assisting (ARC/STSA) – A committee of Commission on Accreditation of Allied Health Education Programs (CAAHEP)

Welding:

National Institute of Metalworking Skills (NIMS), American Welding Society SENSE Training and Testing

History

GTCC is an accredited two-year community college accredited by the Southern Association of Colleges and Schools. It opened in 1958 with 50 students and two classes as the Guilford Industrial Education Center on the site of the Guilford County Tuberculosis Sanatorium, which operated from 1924 to 1955.

Guilford Industrial Education Center's Board of Trustees was established on September 3, 1963.

In 1965, when the school became Guilford Technical Institute (GTI), four members were added to the Board of Trustees. That same year, GTI was given authority to grant associate degrees.

In 1981, the State Board of Community Colleges began administration of the Department of Community Colleges. That board approved GTI's request to add a college transfer program in 1983, and GTI changed its name to Guilford Technical Community College.

The college was created as a training center designed to prepare people for jobs created by the rapid manufacturing growth of the early 1950s. Its purpose has remained basically unchanged: to give the people of Guilford County the training and education they need to compete in the job market.

GTCC offers certificates, one-year and two-year career-related programs, a two-year college transfer program, personal enrichment courses, a variety of adult education opportunities and training for business and industry.

Affirmative Action

Guilford Technical Community College is an affirmative action/equal opportunity college.

Mission

Guilford Technical Community College provides access to lifelong learning opportunities for personal growth, workforce productivity, and community service. It serves all segments of Guilford County's diverse population, delivering quality educational programs and services through partnerships with business, community groups, and other educational institutions.

Values

- We value our students.
- We value learning.
- We value challenging, innovative instruction and targeted services that meet the needs of individual students.
- We value employees who are committed to providing services that ensure student success.
- We value diversity.
- We value honesty and integrity.
- We value institutional effectiveness achieved through planning and teamwork.

Goals

Processes:

- GTCC will provide excellent/innovative teaching, appropriate technology for learning, and targeted student services.
- GTCC will pursue excellence in all it does, will make its facilities available to the public, and will support good citizenship by students and employees.
- GTCC will support area economic development efforts by responding promptly with high-quality programs that meet the needs of both new and existing businesses and industries.
- GTCC will empower, reward, and develop the skills and abilities of its employees.
- GTCC will identify and measure desired outcomes both in the operation of the college and in the classroom.
- GTCC will be alert to new approaches, technologies, and knowledge, and will apply them in the context of its mission and goals.

Results:

- GTCC students will learn the skills and knowledge that will enable them to reach their educational goals.
- GTCC will be respected and valued by residents of Guilford County. It will be regarded as a major contributor to the quality of life in the county.
- GTCC will be a partner in attracting and retaining business and industry, contributing to the economic development of the county.
- GTCC will attract and retain qualified and caring employees.
- GTCC will be accountable to students, taxpayers, and the public.
- GTCC will be a benchmark by which other community colleges measure their progress.

Positioning Statement

Guilford Tech has a broader, more profound and more productive impact on business, professional and personal lives in Guilford County than any other institution by raising the standard of living and helping people retool their lives.

Vision Statement

Creating Successful Futures

GTCC Quick Facts (2011-2012)

- Third-largest community college in NC
- School mascot: Titans
- Campus locations can be found in Jamestown, Greensboro, High Point, the Aviation Centers at the Piedmont Triad International Airport, and the Small Business Centers
- 19,938 students in curriculum programs
- 25,474 students in continuing education programs
- Average age of curriculum student: 28
- 57% of curriculum students are female
- 43% of curriculum students are male
- 59% of curriculum students are minority students
- 367 full-time faculty members
- 378 full-time staff members

GTCC Foundation

The GTCC Foundation is a tax-exempt, 501(c)(3), non-profit organization that supports efforts to ensure educational excellence through fund raising, advocacy, and promoting awareness of GTCC's positive impact on the community. The purpose of the Foundation is to raise financial resources beyond those provided by the state and county that enable the College to more fully carry out its mission. Gifts to the Foundation provide scholarships to students and support faculty and staff development, innovation, and key initiatives.

Catalog

This catalog is for information purposes and does not constitute a contract. This catalog expires and cannot be used for graduation after the end of the summer semester 2017. A student may receive a certificate, diploma, or degree from Guilford Technical Community College in accordance with the requirements stated in the catalog in effect at the time he/she enters GTCC or those catalogs of any subsequent years. The requirements must be completed within five years of the beginning of the catalog selected. A minimum of three semester hours must be completed during the year the selected catalog was in effect. All regulations and conditions other than those above are subject to change. These changes may supersede catalog regulations. Guilford Technical Community College reserves the right to make changes in this catalog as needs arise and to make final interpretations of the statements contained therein. Without notice, the College reserves the right to change tuition, fees, and related requirements and regulations as prescribed by the Board of Trustees, the North Carolina Community College System Office, or Legislative action by the North Carolina General Assembly.

Please Be Advised: The contents of this catalog represent the most current information available at the time of publication. However, during the period of time covered by this catalog, it is reasonable to expect changes to be made with respect to this information without prior notice. The course offerings and requirements GTCC are under continual examination and revision.

personnel

BOARD OF TRUSTEES

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Alison Wiers	Associate Vice President of Student Support Services
Manuel Dudley	Dean, Greensboro Campus
Janette McNeill	Dean, High Point Campus

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