



Academically  
**YOURS.**

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The statements in this catalog are not to be regarded as a contract between a student and the College. The College reserves the right to change course descriptions and academic requirements at any time within a student's enrollment. It will not be responsible for interruptions in a student's educational program due to circumstances beyond its control, such as inadequate enrollment in offered classes. A student planning to transfer is responsible for arranging a course of study acceptable to the transfer institution. HACC, Central Pennsylvania's Community College, in full accordance with the law,

does not discriminate in employment, student admissions, and student services on the basis of race, color, religion, age, political affiliation or belief, sex, national origin, ancestry, disability, place of birth, General Education Development Certification (GED), marital status, sexual orientation, gender identity or expression, veteran status, or any other legally protected classification. HACC recognizes its responsibility to promote the principles of equal opportunity for employment, student admissions, and student services, taking active steps to recruit minorities and women. Inquiries should be directed to the Chief Inclusion and Diversity Officer, One HACC Drive, Harrisburg, PA 17110, telephone 717-736-4100.

# About HACC



## **Mission:**

Creating opportunities and transforming lives to shape the future –  
*TOGETHER.*

## **Vision:**

HACC will be the first choice for a quality and accessible higher  
education opportunity.

## **HACC, Central Pennsylvania's Community College**

One HACC Drive  
Harrisburg, PA 17110  
717-780-2300

Toll-free: 800-ABC-HACC (222-4222)

### **Gettysburg Campus**

731 Old Harrisburg Road Gettysburg, PA 17325  
717-337-3855

### **Harrisburg Campus**

One HACC Drive Harrisburg, PA 17110  
717-780-2300

### **Lancaster Campus**

1641 Old Philadelphia Pike Lancaster, PA 17602  
717-293-5000

### **Lebanon Campus**

735 Cumberland Street Lebanon, PA 17042  
717-270-4222

### **Virtual Learning**

One HACC Drive Harrisburg, PA 17110  
800-ABC-HACC, option 7  
virtual@hacc.edu

### **York Campus**

2010 Pennsylvania Avenue York, PA 17404  
717-718-0328

## **History**

Harrisburg Area Community College was established February 14, 1964, as the first community college in Pennsylvania. HACC welcomed its first class of 426 students on September 21 of the same year. In seeking to fulfill its mission of “providing educational and cultural opportunities to the community it serves,” HACC has become the largest community college in Pennsylvania, with over 18,000 students enrolled in the fall 2017.

Over the past 53 years HACC has grown and expanded its mission to include campuses at Gettysburg, Harrisburg, Lancaster, Lebanon and York, as well as a robust online education program and two Midtown Harrisburg locations to house the College’s technology and trade programs. HACC now has more than 110 associate degree, certificate and diploma programs. Study abroad opportunities also are available.

HACC's Workforce Development and Continuing Education Division offers professional development, job training, and personal enrichment courses/programs designed for both individuals and corporations. The College is one of the largest providers of workforce training in the state serving over 150 companies with over 25,000 enrollments in the areas of public safety, job skills, healthcare, technology and trades training, and computer skills.

Today, HACC, Central Pennsylvania’s Community College, has many strengths: exceptional faculty, student-centered libraries, well-equipped laboratories and studios, modern, well-maintained campuses, and quality programs and services. HACC’s reputation reflects the quality and dedication of its faculty and staff and its commitment to meeting the needs of the 11 counties and students it serves.

### **Accreditation**

HACC is accredited by the Middle States Commission on Higher Education (MSCHE). MSCHE is an institutional accrediting agency recognized by the U.S. secretary of education and the Council for Higher Education Accreditation. MSCHE granted initial accreditation in April 1967 and reaffirmed that accreditation most recently in June, 2014. Visit the Middle States website at [www.msche.org](http://www.msche.org) for more information. The Pennsylvania Department of Education has authorized the College to award the associate degree, with specific programs receiving national accreditation.

In full accordance with the law, HACC does not discriminate in employment, student admissions, and student services on the basis of race, color, religion, age, political affiliation or belief, sex, national origin, ancestry, disability, place of birth, General Education Development Certification (GED), marital status, sexual orientation, gender identity or expression, veteran status or any other legally protected classification. HACC recognizes its responsibility to promote the principles of equal opportunity for employment, student admissions, student activities and student services taking active steps to recruit minorities and women. Inquiries should be directed to the Title IX Coordinator/College Diversity Officer, One HACC Drive, Harrisburg, PA 17110, telephone 717-736-4100.

## HACC Locations

**Gettysburg Campus**  
**731 Old Harrisburg Road**  
**Gettysburg, PA 17325**  
**717-337-3855**

The Gettysburg Campus, established in 1990, is located at 731 Old Harrisburg Road, close to downtown Gettysburg. The campus enrolls nearly 2000 students in credit courses and offers a selection of workforce development courses and customized employee training programs for business and industry, including a new Industrial Manufacturing (IMT) Apprenticeship program.



The Gettysburg Campus renovated a 1960s shopping mall into a modern college campus. A Welcome Center brings admissions, registration, student accounts and financial aid services together in one location. An innovative Learning Commons incorporates library information resources, instructional technology, career services, academic support services and comfortable study areas.

Our spacious and colorful student commons, known as The HUB, features a fireplace lounge, Subway restaurant, Ragged Edge coffee bar, full-service bookstore, and the Robert C. Hoffman Community Room for college and community events. The Gettysburg Hospital WellSpan Health Care Learning Center houses HACC's Associate Degree Nursing, Medical Assisting Certificate and Physician Office Assistant programs. Campus technology includes SMART equipped classrooms, campus-wide wireless Internet access, podcasting capabilities, and a laptop loan program for students.

Campus renovation projects have incorporated environmentally friendly materials, sustainable design and energy efficient systems, including a geothermal heating and cooling system.

HACC's Gettysburg Campus features small class sizes, individual attention from faculty, an active Student Government Association and Student Programming Board, and a full array of student services. The Office for Academic Success offers free tutoring services, academic skills workshops and writing instruction.

The Gettysburg Campus offers full-or- part-time study, day or evening classes, and online courses for 51 associate degree, certificate and diploma programs. For more information, see the individual program descriptions in this catalog or call HACC's Gettysburg Campus at 717-377-3855.

**Harrisburg Campus**  
**One HACC Drive**  
**Harrisburg, PA 17110**  
**717-780-2300, or toll-free 1-800-ABC-HACC (222-4222)**

The Harrisburg Campus, was HACC's first campus. Between 1964 and 1967, classes were offered at locations throughout Harrisburg. In 1967, McCormick Library, Blocker Hall and a student center (now Stabler Hall) opened their doors at the current location.



The Harrisburg Campus enrolls nearly 8,000 students every semester in credit courses in over 100 associate degree, certificate and diploma programs. Program offerings include a variety of liberal arts, fine arts, science, technology, engineering, and math transfer and career programs.

The Harrisburg Campus spans over 200 acres and consists of 27 academic and student service buildings. The campus serves as a public garden to the community and boasts nine distinct gardens and over 900 trees. The campus facilities

include the McCormick Library; the Bruce E. Cooper Student Center which houses the cafeteria; and the Rose Lehrman Arts Center which contains a 380 fixed-seat theatre.

The Select Medical Health Educational pavilion houses an up-to-date nursing lab and dental hygiene lab. Students and the public can visit the dental hygiene clinic for professionally supervised dental services at an affordable cost.

The Grace M. Pollock Childcare and Early Childhood Educational Center is a daycare facility operated by U-Gro® Learning Centers, along with classrooms and offices for our education program.

The James W. Evans Physical Education Center is a teaching and general recreation facility that includes a swimming pool, fitness center, gymnasium, dance studio, and racquetball and squash courts. Nearby are lighted tennis courts, a golf putting green and athletic fields. It is home to HACC's athletic programs in the National Junior College Athletic Association (NJCAA). The College participates in region XIX for intercollegiate sports, including golf, soccer, volleyball, basketball, and cross country.

The Harrisburg Campus has extensive technology and trade offerings through associate degree, certificate, and diploma programs as well as through Workforce Development training. Workforce Development opportunities including welding, industrial maintenance, and precision metal working technology available at our Midtown Site in midtown Harrisburg. Business and manufacturing companies can train their employees in areas of concentration such as machining, electrical, mechanical, pneumatics, CDL, logistics and more.

The Harrisburg Campus is also home to the Senator John J. Shumaker Public Safety Center that serves as a regional public safety training center for fire, police, and emergency medical personnel.

Students can choose from day, evening, or weekend offerings, blended offerings, or online courses. For more information, see the individual program descriptions in this catalog or call HACC's Harrisburg Campus at 717-780-2300.

**Lancaster Campus**  
**1641 Old Philadelphia Pike**  
**Lancaster, PA 17602**  
**717-293-5000**

Conveniently located on a beautiful and accessible campus in the heart of Lancaster County, HACC's Lancaster Campus has served its surrounding communities for over 25 years. Students at HACC's Lancaster Campus can fully complete over 40 programs of study on campus. With such diverse offerings and multiple partnerships with four-year institutions, it is not surprising that *LNP*, the newspaper for Lancaster County, has awarded HACC's Lancaster Campus with the Readers' Choice Award for "Favorite Place to Take College Courses" 12 years in a row.



A campus is only as strong as its faculty, and HACC's Lancaster Campus boasts an impressive collection of award-winning full-time and part-time faculty, including a Fulbright Scholar. In addition to 20% of full-time faculty having an earned doctorate degree, HACC's Lancaster Campus has been home to 14 National Institute for Staff and Organizational Development (NISOD) Excellence in Teaching Award winners. The ranks of HACC Lancaster's adjunct faculty include local police chiefs, published researchers, exhibited artists, nurse managers, former college and high school administrators, business entrepreneurs, music composers, attorneys, and clinical psychologists. As innovative content experts and practitioners in their respective fields, the dedicated faculty at HACC's Lancaster Campus are committed to providing students with an academic experience that is both rigorous and rewarding, one that will position them for success after graduation.

While enrolled at HACC's Lancaster Campus, students are well supported by faculty, staff, and administrators. HACC's Lancaster Campus provides an inviting Welcome Center, a supportive Counseling and Advising team, a resource-rich

Campus Library, and a helpful Tutoring and Testing Center. Consequently, the entire campus aims to create a positive college experience for students, part-time and full-time alike.

As a community leader, HACC's Lancaster Campus proudly partners with the Spanish American Civic Association's Tec Centro, which is Lancaster's first and only bilingual vocational training school. Additionally, as a leader in the region's economic and workforce development training, HACC's Lancaster Campus plays an active role in assisting industry leaders with recruiting and retaining the highly skilled workforce required to compete in increasingly competitive markets. The Industrial Manufacturing Technician program, first of its kind in the Commonwealth, is available to manufacturing companies to both upskill current employees and assist in employee recruitment. Individuals learn components of quality, production, maintenance and safety, adding value to the manufacturing bedrock of Lancaster County.

Known for its quality academic programming in all disciplines, the programs with the highest enrollments at HACC's Lancaster Campus are Allied Health and Nursing, Business, Social Sciences, Biology, Engineering, and Early Childhood Education. Each year, over 600 students completed clinical rotations, practicum experiences, child care and education placements, and internships at over 100 sites in Lancaster County. Consequently, HACC's Lancaster Campus is proud to support those students who are working to directly enter the workforce or transfer to a baccalaureate institution. For more information, please contact the Lancaster Campus at 717-293-5000.

**Lebanon Campus**  
**735 Cumberland Street**  
**Lebanon, PA 17042**  
**717-270-4222**  
**[lebadmit@hacc.edu](mailto:lebadmit@hacc.edu)**



The rich history of HACC's Lebanon Campus, providing educational excellence to the Lebanon Valley, began in the fall of 1990 when the newly renovated Francis J. Dixon Hall opened its doors. However, soon after, a fire in November 1990 destroyed the campus and nearby businesses. The campus was rebuilt on its original site, and the new \$8 million building opened in January 1992. In the spring of 2014, the campus added two modernized classrooms and a collaborative learning space for faculty and students. In more recent years, the campus has added a one button studio for video recording and continues to add state of the art technology to support programs.

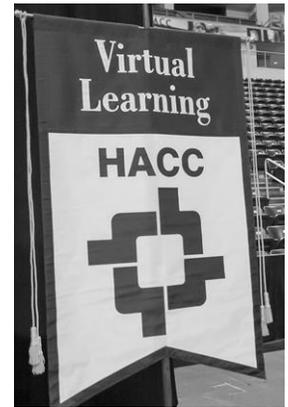
Serving the Lebanon Valley for more than 25 years, the Lebanon Campus offers a Welcome Center that brings admissions, registration, financial aid and advising into one convenient location. Lounge areas and wireless internet throughout the campus provide students with the opportunity to study and socialize conveniently. A student life space features Quest Cafe, lounge area, and meeting rooms for student government, clubs and student events. The Pushnik Family Library provides on-site help and comfortable space for individual and group study. Students can access over 11,000 volumes for research, study and personal enrichment. Computers and laptops are available for student use within the library. Online access to academic information and virtual reference service off campus are provided 24/7 for HACC students.

The Lebanon Campus offers associate degree, certificate and diploma programs, as well as workforce development courses. Much of the general education course work for HACC's other programs can also be completed at the Lebanon Campus.

Students can choose from day or evening offerings, blended offerings, or online courses. In addition, a variety of developmental courses are offered to develop math and language skills. The Office for Academic Success provides free tutoring skills workshops and exam proctoring for current students and placement testing services for new students. In addition, students have access to services offered by academic advising and counseling, career and transfer services, veteran's affairs and disability services. For more information, please contact the Lebanon Campus at 717-270-4222.

**Virtual Learning**  
**One HACC Drive**  
**Harrisburg, PA 17110**  
**1-800-222-4222, press 7**  
**[www.hacc.edu/virtual](http://www.hacc.edu/virtual)**

Virtual Learning opened in July of 2004 as an extension of the college's successful distance learning program. Virtual Learning currently schedules over 750 online sections each semester in a wide variety of subject areas. In addition, students can major in one of eighteen fully online associate degree programs.



Online classes adhere to the same tuition, admission, and registration procedures as on-campus classes and follow the standard HACC fall, winter, spring, and summer semester schedules. Classes are available in full-term and accelerated sessions. Online classes can be accessed anywhere at any time using a computer with a high-speed Internet connection. Communication with the instructor and classmates takes place through discussion board postings, chats, and email. Special hardware or software may be required for some online classes. Web resources and multimedia materials may be used in addition to the textbook or other printed materials. On-campus or proctored exams may also be required.

Busy adults who are challenged with travel concerns or personal and/or professional time constraints may find online classes offer them a convenient way to achieve their educational goals. They may take classes in order to gain job skills, earn a HACC degree, or transfer credits to another college or university.

High school students who meet certain admissions and placement test criteria may take classes to fulfill high school graduation requirements while earning college credits. Guest students from other colleges may take transfer classes that fit their busy schedules and save them tuition dollars. Students should check with their educational advisors before taking a class to ensure the credits will apply to the degree they are seeking.

The Virtual Learning website has a self-assessment tool to help students determine if their learning style is a fit for online learning. Students can also explore a sample class prior to taking a class. Successful online students are self-directed, motivated learners who actively participate and complete assignments and assessments by the due dates. Many services are available to help online students succeed, including admission, registration, advising information, tutoring, career planning, and library resources. Students are also encouraged to use the services and resources provided at any of HACC's physical campuses.

For more information, please see the individual class and program descriptions listed in this catalog. Visit the Virtual Learning website at [www.hacc.edu/virtual](http://www.hacc.edu/virtual) for additional information regarding online degree options. To speak with a HACC Virtual Learning team member, call 1-800-222-4222 and choose option 7; or email [virtual@hacc.edu](mailto:virtual@hacc.edu).

**York Campus**  
**2010 Pennsylvania Avenue**  
**York, PA 17404**  
**717-718-0328**  
**[yorkinfo@hacc.edu](mailto:yorkinfo@hacc.edu)**



The York Campus is located at 2010 Pennsylvania Avenue, one half mile north of Route 30 and behind The Crossroads shopping center. The campus complex includes three academic buildings, the Arthur J. Glatfelter Community Room, a campus services building, large parking lots, and a Rabbit Transit bus transfer station. Over 2,500 students are enrolled in classes making the York Campus the third-largest campus of HACC.

The York Campus offers over 40 associate degree, certificate, and diploma programs as well as workforce development courses and employee training for business and industry. Our career training programs provide students with hands on, skills- based learning in preparation for the workforce while our transfer programs enable students to begin working toward a bachelor's degree while staying close to home.

Students attending the York Campus will receive a quality educational experience in a student-centered environment. The Governor George M. Leader building is home to a full- service bookstore, library, allied health and science labs, and a new student common complete with food service and PSECU e-center. The William F. Goodling Center is home to our trade and technology programs and houses computer and networking labs, an electrical occupations lab, automotive lab, HVAC lab and new state-of-the-art welding lab. The Cytec building houses an art studio, computer graphics lab, classrooms and a fitness classroom. Wireless internet access in all buildings is part of our campus learning environment. The Office for Testing and Tutoring offers free tutoring, academic skills workshops and a writing lab. Student Government Association, clubs, and an active Phi Theta Kappa chapter provide students with opportunities to be involved on campus and in their local community.

With students from over 50 countries attending classes, the York Campus is one of the most diverse places in York County. This multicultural learning environment prepares students to work and live in a global community.

There are flexible day, evening, and Saturday class schedules offered at the York Campus. Most of the general education and science courses for health career programs can be completed at the York Campus. For more information, please contact the York Campus at 717-718-0328.

## **Workforce Development and Continuing Education**

**HACC's Workforce Development and Continuing Education Department** conducts a variety of industry-driven training programs designed to increase employee productivity and organizational efficiency. Some courses are offered directly to the public, while contract and customized training are offered to employers.

Workforce training gives working professionals a competitive edge in their careers and provides companies with an excellent training opportunity for their employees. Programs are provided at HACC's five campus locations or at the company's location. Workforce development certificate programs are designed to be completed in less than 18 months. For more information, call 717-780-2324.

**Computer Training** provides customized and public subscription computer training in a comprehensive assortment of software packages including Microsoft Office and Intuit QuickBooks. Certification training is available for Cisco CCNA, CompTIA A+, Linux+, Network+, and Security+. HACC is also a Microsoft Imagine Academy member. For information, call 717-780-1179.

**Manufacturing and Technical Training** are available in a variety of fields including AutoCAD, SolidWorks, GIS, and GPS basics, as well as electrical and electronics, welding, HVAC, programmable logic controllers (PLC), precision measuring, print reading, machining (including CNC), hydraulics, pneumatics, warehouse/logistics operations, and more. For information, call 717-736-4212.

**Environmental, Regulatory and Green Technology** training programs are available for environmental technician, aggregate certification, wastewater treatment, solar photovoltaic systems and other green technology programs. For information, call 717-221-1338.

**Automotive** provides training in the automotive field for current employees. Training includes GM Certified Technician training, Safety Inspection, Emissions Inspection, and customized industry-driven courses. For more information, call 717-780-2411.



**Transportation and Logistics** training offers CDL class A and B truck driver training, refresher classes and customized driver training. The program is a licensed third party testing site for the Commonwealth of Pennsylvania. Testing is available to the public by appointment only. For more information, call 717-221-1357.

**Corporate Training** creates bottom-line results for stronger organizational performance. HACC's workforce staff coordinates with your team to customize curriculum and deliver professional training that facilitates achievement of strategic company goals. Training is suitable for all employees within an organization, but can be focused on particular levels of management, employee classes or locations as needed. Highly qualified instructors host learning sessions in a variety of locations and provide in-demand topics including, but not limited to: performance management, leadership, communication, team building, and interpersonal skills.

**Career Readiness** programming delivers essential job readiness skills through the S.T.E.P Academy as well as offers workforce skills assessments as a local provider of the National Career Readiness Certificate (WorkKeys). Please call 717-780-1112 for more information.

**Adult learning** classes in various subjects, including ServSafe® certification, retirement planning, fitness classes, photography, and languages are available. Classes in Adult Literacy, GED, English as a Second Language (ESL) and PA KEYS Early Childhood Education as well as certification programs in Brewing Science, Winemaking, Call Center Representative, and Office Professional are currently available. Please call 717-780-1112 for more information.

In **Healthcare**, HACC offers an ever-expanding variety of workforce development training programs, including Medical Billing and Coding, Nurse Aide, Massage Therapy, Cardiology Technician, Pharmacy Technician, Physician Office Assistant, Personal Trainer, Phlebotomy, and RN/LPN Re-entry. These comprehensive programs prepare students to enter healthcare careers, and continuing education offerings help current healthcare professionals meet their continuing education requirements. Many of the entry-level programs prepare students to sit for professionally-recognized certification exams.



Completed coursework can often be converted into college credits for those students who continue their healthcare education in HACC's programs. For more information on workforce development healthcare programs, call 717-221-1352.

### **Public Safety**

At HACC's Senator John J. Shumaker Public Safety Center, we provide a wide variety of training programs for law enforcement, fire, rescue, hazardous materials, and emergency medical services personnel, as well as response and safety training in business and industry environments. Most programs are provided throughout South Central Pennsylvania at locations which are convenient to the students or at HACC. Some public safety courses require criminal background checks or related prerequisites prior to enrollment.

Our **Law Enforcement** training programs meet the needs of current law enforcement professionals, as well as those seeking to enter the law enforcement field. The Municipal Police Academy is authorized to provide the Act 120 certification required for all new and prospective municipal police officers as well as mandated and elective continuing education for veteran police officers. In addition to training officers who have already been hired by police departments, the Academy accepts pre-service cadets. Those who complete the Police Academy can also obtain college credit for their work when transferring into HACC's Criminal Justice or Police Science programs. County probation and parole officers across the Commonwealth are also provided continuing education. Finally, HACC is an authorized provider of Act 235 (lethal weapons) certification training under the authority of the State Police.

The Indoor Firing Range at the Piccola Law Enforcement Complex is utilized for a wide range of law enforcement training programs as well as for basic handgun safety and marksmanship courses for civilians. It is also rented to a wide variety of law enforcement agencies, including private, local, county, state and federal. There are also civilian Laser Shot® programs offered at this facility, as well as, utilizing a firearms simulator.

In the **Fire Training Unit**, HACC's Career Fire Academy is designed to recruit, to prepare for a career in the fire service. The Academy offers structured training in firefighting, emergency medical services, hazardous materials and rescue. Participants test for Firefighter I, Firefighter II, Emergency Medical Technician and Hazardous Materials Awareness and Operations level certifications throughout the course of the Academy. Academy graduates may be awarded college credit applicable to HACC's Associate Degree in Fire Science Technology. Also offered at the Shumaker Public Safety Center are the following:

- Entry level fire suppression training for volunteer firefighters and emergency services personnel
- National Incident Management System (NIMS) Incident Command System (ICS) training
- Pennsylvania Emergency Management Agency (PEMA) G series emergency management courses and training
- National Fire Protection Association (NFPA) professional certification testing for various levels in accordance with the National Board on Fire Service Professional Qualifications and the International Fire Service Accreditation Congress
- Business/industry OSHA related emergency response training

**Emergency Medical Services** training is available for HACC's entire service region. Certification programs are currently offered at the Emergency Medical Responder (EMR), Emergency Medical Technician (EMT), Advanced Emergency Medical Technician (AEMT), Emergency Medical Technician – Paramedic (EMT-P) and Pre-Hospital Registered Nurse (PHRN) levels. Along with the traditional program delivery models, the EMT and AEMT programs are also available in an online format which combines elements of online instruction with traditional face-to-face practical sessions. The EMS Academy provides a full-time educational opportunity for those interested in beginning a career in EMS. All of these programs prepare students to become eligible for the PA Department of Health certification and National Registry exams.



HACC also offers EMS continuing education programs such as International Trauma Life Support and Critical Care Emergency Medical Transport. These, as well as other HACC programs can be used to fulfill continuing education requirements for Emergency Medical Service personnel. Finally, as an American Heart Association Community Training Center, HACC offers various certifications in First Aid, and CPR/AED for both the lay public and for Health Care Professionals, in addition to Advanced Cardiac Life Support and Pediatric Advanced Life Support.

For general information on all public safety programs, call toll free 800-222- 4222, ext. 2510, or 717-780-2510.

## **HACC Foundation**

The HACC Foundation is a private nonprofit organization established in 1985 by visionary leaders who believed in the College's mission and the value of investing for the future. The mission of the HACC Foundation is to develop and leverage strategic partnerships for financial support of teaching and learning at HACC. In fact, the HACC Foundation typically provides approximately \$2 million annually to the College in support of these initiatives.

The HACC Foundation Board of Directors is comprised of accomplished business and community leaders who are committed to raising funds and awareness for HACC and its students.

Individuals and organizations interested in contributing to the HACC Foundation and individuals interested in applying for membership on the HACC Foundation Board should visit <http://www.haccfoundation.org>.

## **HACC Alumni Association**

Former students of the College who have graduated from a degree, certificate or diploma program or have earned 30 or more credit hours are automatically members of the HACC Alumni Association. HACC alumni receive a variety of benefits and services through the association. Alumni are also invited to a myriad of educational, social and career development events held annually at HACC campuses.

The Alumni College Card enables alumni to use HACC facilities and services, including library privileges, access to HACC's career services, the use of the gym, tennis courts and swimming pool at the Harrisburg Campus, the use of the fitness facilities at the Lancaster Campus; and discounts at HACC bookstores, events held at the Rose Lehman Arts Center, restaurants [and more](#).

For more information, please visit <http://www.hacc.edu/Alumni/index.cfm>.





# Student Affairs

## Application Information

### **Applicants who meet the following criteria will be admitted to the college:**

Earned a high school diploma or received a General Education Development Diploma (GED)  
Satisfied the conditions for early admission of secondary school students  
Are 18 years or older

### **Who should apply for admission to the college?**

Anyone who has never previously applied for credit courses  
Anyone who has previously applied for credit courses, but never took classes  
Anyone who previously studied at HACC but has not attended for one or more years



### **How to apply for admission to the college:**

Complete and submit the online application for admission found at [www.hacc.edu](http://www.hacc.edu).  
Apply as early as possible to ensure that there is adequate time to complete the enrollment process. The Office of Financial Aid Services encourages all students to apply for financial aid by completing the Free Application for Federal Aid (FAFSA). For detailed information visit [www.hacc.edu](http://www.hacc.edu).

Submit an official high school transcript or copy of high school equivalency diploma if you are:

- Applying as an international (F-1) student
- Seeking admission into to a selective program. Admission to the college does not ensure acceptance into selective programs because of available physical facilities, clinical spaces, student/faculty ratios, or other factors. Admission into selective programs is competitive. These programs are identified with an asterisk(s) (\*) (\*\*) on the Major Codes page of the application.
- Applying for Federal Student Aid (FAFSA)

Submit an official college transcript if you are:

- Transferring credits to HACC
- Seeking acceptance to a selective program (see 3.b.)

Other documents may be required for the following admission types:

**College in the High School and Dual Enrollment Programs** – Students seeking enrollment into college courses at HACC while attending high school.

**Guest Student Admissions** – Students currently enrolled at another institution and taking courses at HACC to fulfill the home institution's degree requirements

**International Student Admissions** – Student seeking enrollment with an F-1 Visa need to complete the International Admissions Application. Please contact the International Admissions Coordinator for an application at 717-780-2403.

**Permanent Resident/Non- Resident Alien** – Those living in the United States who are not U.S. citizens are required to submit either a copy of their permanent resident card or a current visa with the application for admission. A non-resident alien is defined as a person who is not a citizen and who is the United States on a visa or temporary basis without the right to remain indefinitely.

Upon admission, you will receive an admission letter with instructions on how to proceed with enrollment.

### **Who to contact for more information and tours of the campus:**

The college welcomes and encourages applicants to visit any campus and learn more about HACC. Call 800-ABC-HACC or meet your admissions counselor by visiting [www.hacc.edu](http://www.hacc.edu)

### **Where do I find an application?**

Go to [www.hacc.edu](http://www.hacc.edu) to apply online. If you are unable to apply online, you may download and print the application at [www.hacc.edu](http://www.hacc.edu) or contact the Welcome Center nearest you at 800-ABC-HACC.



### **Where do I mail the application? Mail your paper application to:**

Harrisburg Area Community College  
Central Enrollment Services, H122  
One HACC Drive  
Harrisburg, PA 17110

Once a student is admitted to the college, a letter of acceptance is sent. The letter includes the student's assigned HACC ID as well as information on the next steps of the enrollment process, such as placement testing, advising, and scheduling classes.

### **Placement Testing**

All new applicants – including students who desire to enroll in an English or mathematics course or in a course which has an English or mathematics prerequisite – will be tested in reading, writing, and math skills prior to enrollment. Students whose second language is English will take the English as a Second Language (ESL) test before taking any other placement tests.

Students who submit an SAT critical reading score or SAT Evidence Based Reading and Writing (ERW) of 480 or above or ACT Reading score of 18 or above are exempt from the Reading placement test. Students who submit an SAT critical reading score or SAT Evidence Based Reading and Writing (ERW) of 480 or above or an ACT English score of 21 or above are exempt from the writing placement test. Students who present evidence of successful completion of prerequisite, college-level courses or the equivalent are exempt from the test. Students who submit an SAT math score of 590 or higher or an ACT score of 23 or higher are exempt from math placement testing.

Students who have completed a baccalaureate degree from an accredited institution of higher education will be exempt from reading, writing, but not mathematics, placement testing. Students who enroll only in courses without English or mathematics prerequisites are exempt from the test. English as Second Language students will be exempt from the ESL test if they present acceptable TOEFL scores. Students with an IELTS score of 6.5 or higher should take standard placement exams, not ESL exams.

All students are allowed to retake the Placement Test. After the original placement test, it is recommended that any student choosing to retest wait at least two weeks after the initial test. The initial test and the first retest are free of charge. Any subsequent retest will incur a \$25.00 non-refundable fee.

Once placement tests have been completed, students will receive their placements and should meet with an advisor to interpret the scores. A student with a documented disability who requires special assistance with testing should contact the Office for Disability Services at the appropriate campus to schedule testing.

### **Meeting with an Advisor**

Advising is an important part of the educational experience. The student and advisor can discuss program objectives and the student's goals to develop an educational plan that fits the student's needs. Students who choose to register without seeking advice or register in classes not recommended by their advisor assume full responsibility for their actions.

Students should refer to the Academic Programs pages of this catalog, or go to [www.hacc.edu](http://www.hacc.edu) for information on the suggested sequence of courses for the program they are pursuing and planning suggestions for those students who plan to transfer to another college after completing their education at HACC. Class schedules are also available online at [www.hacc.edu](http://www.hacc.edu).



## Applying for Admissions

### MAJORS AND MAJOR CODES

#### SPECIAL MAJOR CODES

<b>General Studies</b> (Pursuing a General Studies Degree)	<b>7606</b>	<b>General Studies/Undecided</b> (Undecided about degree program choice)	<b>7661</b>
<b>Guest Student</b> (Currently enrolled in good standing at another college but taking course(s) at HACC to fulfill that institution's degree requirements)	<b>GTST</b>	<b>Non-Degree/Personal Enrichment</b> (Seeking non-degree personal enrichment. Not eligible for financial aid.	<b>NDGR</b>

*\*These programs have additional requirements, procedures and deadlines beyond admission to the college.*

*\*\*Students initially enroll in a pre-clinical portion of the program before entering clinical components. Clinical programs are selective and competitive. Admission to the college does not guarantee acceptance into the clinical portion of the program.*

### DIPLOMA PROGRAMS

Diploma programs are designed to provide essential entry-level skills for immediate employment and can be completed in one semester. In some programs, some diploma credits may not apply to the certificate and associate degree. Ask your advisor for specific information.

<b>Program</b>	<b>Code</b>	<b>Program</b>	<b>Code</b>
Auctioneering	0100	Introduction to Residential HVAC/R	0280
Architecture	0656	Music Audio and Recording Technology	0161
Computer Information Systems – Software Specialist	0220	Welding	0500
Gerontology	0231		

### CERTIFICATE CURRICULA

Certificate curricula are concentrated programs in specific skill areas. They are designed to provide skills for employment that can be completed in one year (two semesters). Students may continue to study for the associate degree in most curricula.

<b>Program</b>	<b>Code</b>	<b>Program</b>	<b>Code</b>
Administrative Office Management	1371	Heating, Ventilation, Air Conditioning/Refrigeration (HVAC/R)	4280
Architecture	4476	Home Building and Remodeling	4430
Automotive Service Advisor*	4206	Hospitality and Tourism Management	1101
Baking and Pastry Arts	1321	Restaurant/Food Service Management	RM_C
Building Construction Management	4250	Hotel and Lodging Management	HM_C
Computer Information Systems	1312	Tourism, Convention & Event Management	TM_C
Business Intelligence Application Developer	BI-C	Mechanical Technology	4350
Computer Support Specialist	SS-C	Mechatronics	4261
Database Analyst	DA-C	Medical Assisting**	321P
Computer Networking Technology	4230	Paralegal Studies	5301
Culinary Arts Catering	1261	Paramedic**	333P
Dental Assisting**	320P	Photography	2400
Early Childhood Care and Education	5170	Practical Nursing**	327P
Electrical Technology	4370	Professional Bookkeeping	1206
Electronic Technology	4310	Structural Engineering Technology	4581
Geospatial Technology	4410	Structural Engineering Technology	4581
Gerontology	3300	Web Development and Design	1450
Graphic & Interactive Design*	2200	Welding Technology	4161

## CAREER ASSOCIATE DEGREE CURRICULA

Career curricula are Associate Degree programs that provide students with specific skills for employment.

<b>Program</b>	<b>Code</b>	<b>Program</b>	<b>Code</b>
Administrative Office Management	1926	Graphic & Interactive Design*	2841
Architecture	4476	Health Science**	365P
Automotive Technology – GM ASEP*	4570	Health Care Management	3606
Automotive Technology*	4480	Heating, Ventilation, Air Conditioning/Refrigeration (HVAC/R)	4780
Building Construction Management	4510	Hospitality and Tourism Management	1906
Business Management	1510	Restaurant/Food Service Management	REST
Business	1516	Hotel and Lodging Management	HTLM
Accounting	ACCT	Tourism, Convention & Event Management	TOUR
General Business Management	BGMR	Human Services	5556
Marketing	MKTG	Mechanical Engineering Technology	4700
Computer Information Systems	1796	Mechatronics	4711
Business Intelligence Application Developer	BIAD	Medical Laboratory Technician**	348P
Computer Support Specialist	SUP	Music Business	1806
Database Analyst	DATA	Nanofabrication Manufacturing	4690
Computer Networking Tech	4590	Nursing**	345P
Culinary Arts	1586	Paralegal Studies	5706
CVT-Invasive Cardiovascular Technology*	351P	Photography	2850
CVT-Cardiac Sonography**	353P	Police Science	6806
Dental Hygiene**	341P	Radiologic Technology** (College Based)	376P
Diagnostic Medical Sonography**	342P	Respiratory Therapist**	392P
Early Care and Education	5506	Surgical Technology**	364P
Electronic Engineering Technology	4580	Radiology Informatics	3786
Electrical Technology	4750	Structural Engineering Technology	4850
Fire Science Technology	6636	Industrial Technology	4680
Geospatial Technology	4760	Theatre	2500
Gerontology	3476	Web Development and Design	1816
		Wellness and Health Promotion	3610

## TRANSFER ASSOCIATE DEGREE CURRICULA

Transfer curricula are the equivalent of the first two years of a four-year program. After earning an associate degree, students transfer to a four-year institution to complete the last two years of the bachelor's degree.

<b>Program</b>	<b>Code</b>	<b>Program</b>	<b>Code</b>
Art	2130	Early Childhood – Elementary Education	5070
Biology	3096	Engineering	4120
Business Administration	1026	Environmental Science	3046
Chemistry	3026	Liberal Arts	2091
Communication	2036	International Studies	5030
Human Communications	HCOM	Mathematics - Computer Science	4030
Public Relations	PREL	Mathematics	4076
Journalism	JOUR	Philosophy	2050
Computer Information Security	1030	Exercise Science	3121
Criminal Justice	6050	Physical Science	3076
Law Enforcement	LWEN	Psychology	5156
General Transfer	GNRL	Social Sciences	5090
Criminal Justice (PASSHE)	6051	Social Services	5060
Pre-Health Professions	3150		

All Programs are not necessarily offered at all campuses. Please contact the campus you plan to attend for more information.

## Registration

Registration includes the selection of and registration for classes, plus the payment of tuition and fees. Registration generally begins several months prior to the start of classes and ends the day prior to the start of class. Early registration is encouraged, and full payment is not required until the tuition due date. Registration, dates, times, deadlines, and details about registration methods can be found online at [www.hacc.edu](http://www.hacc.edu).

## Purchasing Textbooks and Supplies

Textbooks and supplies are available before the beginning of the term in the campus bookstores, as well as online at [www.bookstore.hacc.edu](http://www.bookstore.hacc.edu) then pick your location/campus. Financial aid if available can be used three weeks before the beginning of classes for the fall and spring term and two weeks prior for summer and winter. It is recommended that students purchase textbooks before the term begins so you have them on the first day of class.

## Independent Study

There are opportunities for students to engage in independent study courses to complement the traditional educational program. This permits a student to conduct special study or pursue an academic interest. A special fee beyond tuition will be charged. See the Tuition and Fees Schedule. Students interested in applying for an independent study should consult a faculty member in the discipline. Preparation for the study must be completed prior to the opening of the term in which the independent study will be completed. When several students desire to pursue the same study, an Independent Study Seminar may be arranged. Students should be aware that transfers schools may not accept independent study credits.

## Audits

Students eligible to enroll in courses for credit may also audit courses. Students may change credit and audit status of a course during the tuition refund period. Students auditing courses pay the regular course tuition charge and are expected to attend all lectures and laboratory classes but are not required to take examinations. Students who do not meet the instructor's attendance requirements may be dropped from the class. The audit grade does not reflect mastery of material covered in a course and no credit is awarded. Financial aid and tuition aid cannot be used to pay for an audited course.

## Academic Load

In order to be considered full-time in a fall or spring term, a student must be enrolled in courses totaling at least 12 credit hours. Recommended sequences of classes are generally based on at least 15 credits per term in order to facilitate timely completion of the program of study. A student who wishes to schedule more than 18 credit hours during a fall or spring term must obtain approval from their academic advisor. During a summer term, the normal load should not exceed one credit hour for each week of classes.

To give one's self the best opportunity to succeed, the college recommends that students plan weekly study time of at least two hours for each hour of class. It is unwise to plan work and study totaling more than about sixty hours a week.



## Class Attendance

Students are expected to attend, participate, and engage in all scheduled academic activities in the lecture, laboratory, or online course and are responsible for all class work and assignments. Instructors will present an outline of class work and an attendance policy on the first day of class. (Students who miss the first day of class are responsible for requesting this information.) Students who do not plan to attend a class or classes must initiate a drop or withdrawal to avoid possible charges and failing grades.

An instructor's attendance policy must be approved by the Department Chair. Some programs are accredited by external agencies that mandate specific attendance requirements; students must observe these special attendance policies, which are contained in the course syllabus. Students should be careful to observe the college and course specific attendance policies since these policies may sometimes affect either grades or continued status in the class. Students who miss all classes during the first week of a class risk being dropped from the course. Students dropped for this reason may be allowed to reenter the course if space is available and upon receiving instructor approval. Instructors must withdraw students who have missed all of the first three weeks of a regular term (or the equivalent of a shorter term).

The college is sometimes required to make attendance reports to outside agencies concerning students who are receiving veterans' benefits, social security payments, and various other federal, state, and financial aid. Faculty are required to maintain accurate attendance records for reporting purposes.



### **Adding Classes**

After initial registration and prior to the start date of the class, a student may add a class for which the prerequisites have been met providing that the class is not restricted and has seats remaining. Entrance to a class that is closed or full requires the approval of the instructor. Students seeking entrance to restricted classes such as Nursing, Allied Health, Graphic Design, etc., must obtain the appropriate approvals and signatures.

### **Dropping a Class**

Prior to the start of a term and through the full refund period, a student may drop a class with no withdrawal status and no course charges. From the end of the full refund period through the end of the partial refund period, a student may drop a class with no withdrawal status but will be responsible for the published percentage of tuition and fees. Students who initiate a drop or withdrawal after the refund period has ended and prior to the published last day to drop for the part of term will receive a withdrawal status of 'W' and will be responsible for tuition and fee charges. Incidents of Academic Dishonesty may result in the student being withdrawn with a failing grade. Students who do not plan to attend a class or classes must initiate a drop or withdrawal to avoid possible charges and failing grades. Students receiving financial aid, veterans' benefits, other state or federal benefits should determine the impact of dropping classes on their benefits or coverage of policies.

### **Request for Graduation**

At registration for the last term of a program, a student must complete an Application for Graduation. A student is not automatically certified and without applying will not receive a credential. A student may apply to graduate online at *myHACC*, Student tab, Registration/Records, Student Records. Applications are also available in the Registrar's Office and at the Welcome Center at each HACC location.

## **Finances**

The College strives to maintain its position as the lowest-cost institution of higher education in the area as the tuition and fee schedules below indicate. However, students should investigate the possibility of financial aid. Each year, students at the College receive over \$100 million in financial aid every year. There are many aid programs sponsored by government agencies, the College itself, and private groups.

### **Tuition and Fees**

Tuition and fees vary depending on the residence of the student and must be paid in order to complete the registration process. Students who fail to pay the tuition and fees or make payment arrangements by the payment deadline risk being dropped from classes.

Students who reside in one of the twenty- two sponsoring school districts must submit a Certificate of Residence by the tuition due dates in order to pay sponsoring district rates. Students who reside outside one of the sponsoring districts will be required to pay out-of- district tuition and a capital outlay fee. The list of sponsoring school districts and contacts is available on our website. Tuition and fees are subject to change and may be viewed at [www.hacc.edu](http://www.hacc.edu).

### **Laboratory and Special Fees**

Many programs and courses require additional fees. These are stated in the Credit Course Schedule, in course descriptions in this catalog, and in other informational materials. They often are labeled laboratory fees, and cover special costs in certain courses that include insurance, equipment and materials, software use, special testing, and transportation for field trips.



### **Residence Requirements for Tuition Subsidy**

Students are considered Pennsylvania residents if they maintain continuous residence in the Commonwealth for 12 months prior to the start of the enrolled term. A student may rebut this presumption by convincing evidence. Exceptions also apply to citizens of foreign countries depending upon one's Visa status.

Students who wish to claim subsidy from one of the 22 sponsoring school districts of the College must obtain a Certificate of Residence and present it when paying tuition. The College itself does not determine residency in one of the districts. The student's address as of July 1 determines the district responsible for issuing a Certificate, and each district sets its own requirements for residency. A Certificate of Residence is valid from July 1 to June 30, and a new Certificate must be obtained yearly.

### **Students Who Wish Sponsorship at another Pennsylvania Community College**

Students who live in school districts that sponsor HACC may pursue associate degrees at other Pennsylvania community colleges (with sponsorship only in curricula not offered by HACC) by making application to the Board of Trustees. HACC will provide tuition assistance to cover the sponsoring district's share of the tuition, but will not assist in payment of any fees or other costs to the other community college.

Some school districts may refuse to sponsor students at other colleges; therefore, students should check with their school districts concerning this matter. A list of sponsoring school districts is available at [www.hacc.edu](http://www.hacc.edu). Students must complete an Application for Approval to attend a Non-Sponsored Pennsylvania Community College, available from the Dean of Enrollment Services. Students seeking sponsorship must submit to the Dean of Enrollment Services a current, valid Certificate of Residence from their school district. Only after the Board of Trustees approves each application submitted by the Dean of Enrollment Services will the student be assured of sponsorship at another community college in Pennsylvania.



### **Time and Method of Payment**

A student is expected to pay their account in full for the term as of the published due date or enroll in HACC's tuition payment plan. The due dates are available on the Schedule/Bill or at [www.hacc.edu](http://www.hacc.edu).

The College accepts payment by credit card (MasterCard, VISA, and Discover), by check, or by cash. Credit card or check payment may be made online via HACCWeb. A \$20 service fee is charged for returned checks and repeat offenders will be required to remit payment via only cash, a money order, or a certified check. The College offers a tuition payment plan designed for students to pay tuition over a period of time rather than all at one time. See [www.hacc.edu](http://www.hacc.edu) for details.

The College may refuse to issue grades or transcripts and deny registration or readmission to students who owe money to the College or who have failed to return college books or equipment.

### **Refunds**

Students who choose to withdraw from courses according to published deadlines may receive a refund. The refund amount is based upon the total cost of the course and the premise that a student paid the balance in full. A refund is calculated as follows: full refund of all tuition charges and fees up to the end of the first week of classes (or the equivalent for shorter parts of terms), refund of one half of tuition charges up through the third week of classes (or the equivalent). Course drops or withdrawals are not eligible for a refund after the third week of class of the major part of term or the equivalent for shorter parts of term. Refund dates are published on the reverse side of the Schedule/Bill and at [www.hacc.edu](http://www.hacc.edu).

Students dropped or withdrawn for disciplinary reasons may not be eligible for a refund. Students who withdraw prior to the completion of 60 percent of the term and are receiving federal grants or loans, such as a Federal Pell Grant, SEOG and Direct Loan, will have their financial aid recalculated which may result in a balance owed to the College.

## Financial Aid Services

Many students benefit from a variety of financial aid programs at HACC. The financial aid process can be divided into five main areas:

- Applying for Financial Aid
- Determining Aid Eligibility
- Awarding Financial Aid
- Disbursing Financial Aid
- Financial Aid Programs

In addition to information provided here and on the HACC website at [www.hacc.edu](http://www.hacc.edu), the Financial Aid staff at each campus provides assistance to students throughout the year. Students may contact the Office of Financial Aid Services at their campus:

Harrisburg.....	717-780-2330
Gettysburg .....	717-337-3855
Lancaster .....	717-358-2992
Lebanon.....	717-270-6358
York .....	717-718-3217



## Paying for College

**Academic Year 2018-2019**

**Tuition and Fees are subject to change at the discretion of the college.**

**In-State Resident, Sponsored** (Fall 2018 and Spring and Summer 2019):

Credits	Tuition	Activity Fee	Campus Revitalization	Capital Outlay Fee	Institutional Fee	Technology Fee	Security Fee	Total Cost
1	\$180.25	\$3.50	\$ .50	\$0	\$12.00	\$25.00	\$1.50	\$222.75
3	\$540.75	\$10.50	\$ 1.50	\$0	\$36.00	\$75.00	\$4.50	\$668.25
6	\$1,081.50	\$21.00	\$3.00	\$0	\$72.00	\$150.00	\$9.00	\$1,336.50
9	\$1,622.25	\$31.50	\$4.50	\$0	\$108.00	\$225.00	\$13.50	\$2,004.75
12	\$2,163.00	\$42.00	\$6.00	\$0	\$144.00	\$300.00	\$18.00	\$2,673.00
15	\$2,703.75	\$52.50	\$7.50	\$0	\$180.00	\$375.00	\$22.50	\$3,341.25

To calculate tuition for credits not listed, multiply \$222.75 by the total number of credits.

**In-State Resident, Non-Sponsored** (Fall 2018 and Spring and Summer 2019):

Credits	Tuition	Activity Fee	Campus Revitalization	Capital Outlay Fee	Institutional Fee	Technology Fee	Security Fee	Total Cost
1	\$217.00	\$3.50	\$ .50	\$5.00	\$12.00	\$25.00	\$1.50	\$264.50
3	\$651.00	\$10.50	\$1.50	\$15.00	\$36.00	\$75.00	\$4.50	\$793.50
6	\$1,302.00	\$21.00	\$3.00	\$30.00	\$72.00	\$150.00	\$9.00	\$1,587.00
9	\$1,953.00	\$31.50	\$4.50	\$45.00	\$108.00	\$225.00	\$13.50	\$2,380.50
12	\$2,604.00	\$42.00	\$6.00	\$60.00	\$144.00	\$300.00	\$18.00	\$3,174.00
15	\$3,255.00	\$52.50	\$7.50	\$75.00	\$180.00	\$375.00	\$22.50	\$3,967.50

To calculate tuition for credits not listed, multiply \$264.50 by the total number of credits.

**Out-of-State Resident,** (Fall 2018 and Spring and Summer 2019):

Credits	Tuition	Activity Fee	Campus Revitalization	Capital Outlay Fee	Institutional Fee	Technology Fee	Security Fee	Total Cost
1	\$262.00	\$3.50	\$ .50	\$10.00	\$12.00	\$25.00	\$1.50	\$314.50
3	\$786.00	\$10.50	\$1.50	\$30.00	\$36.00	\$75.00	\$4.50	\$943.50
6	\$1,572.00	\$21.00	\$3.00	\$60.00	\$72.00	\$150.00	\$9.00	\$1,887.00
9	\$2,358.00	\$31.50	\$4.50	\$90.00	\$108.00	\$225.00	\$13.50	\$2,830.50
12	\$3,144.00	\$42.00	\$6.00	\$120.00	\$144.00	\$300.00	\$18.00	\$3,774.00
15	\$3,930.00	\$52.50	\$7.50	\$150.00	\$180.00	\$375.00	\$22.50	\$4,717.50

To calculate tuition for credits not listed, multiply \$314.50 by the total number of credits.

### **Additional Fees**

Independent Study Fee = \$50.00 per course

Private Music Lessons Fee

Return Check Fee = \$20.00 (All returned check payments must be made in cash, money order or by certified check. After the third offense, all future payments must be in cash, money order or by certified check.)

Other miscellaneous fees (e.g. laboratory, liability, clinical experience, etc.) may be charged for certain courses. These fees vary by course and will be noted in the credit course schedule adjacent to the course information.

NOTE: Tuition and Fees are subject to change and pending Board approval.

## Applying for Financial Aid

To begin the financial aid process, students complete a Free Application for Federal Student Aid (FAFSA) online at <http://www.fafsa.gov>. HACC's Title IV school code is **003273**.

The recommended filing date is February 15<sup>th</sup> before the academic year begins. Students can complete the FAFSA at any point during the academic year; however, students who apply by February 15<sup>th</sup> receive maximum consideration for aid eligibility.

After completing the FAFSA online, students receive the results of the application in the form of Student Aid Report (SAR) within three to five business days via email and/or letter mail. Students should check the SAR for accuracy to ensure all information reported on the FAFSA is correct.

Some students may be required to submit additional documentation before they receive financial aid. If this occurs, the student will be notified via HawkMail and the required items listed on the Financial Aid Tab in *myHACC*.

Students who have their financial aid file complete by June 30 are guaranteed to have their aid processed by the first day of fall classes. The date for students attending in the Spring is October 31. Students who apply after these dates may need to sign up for HACC's payment plan until their aid is finalized.

## Determining Aid Eligibility

Federal student aid programs are based on the principle that students (and their parent/stepparent or spouse, if applicable) is considered the primary source of financial support for postsecondary education. Financial aid is intended to supplement, not replace, family resources.

Formula for determining financial need:

$$\begin{array}{r}
 \text{Cost of Attendance} \\
 - \text{Expected Family Contribution} \\
 \hline
 = \text{Financial Need}
 \end{array}$$



The Cost of Attendance (COA) estimates the cost to attend HACC for an academic year. It includes direct charges (tuition and fees) and related expenses (room and board, books, transportation, and other miscellaneous expenses).

The Expected Family Contribution (EFC) is calculated using the information provided on the FAFSA and determines eligibility for financial aid. Financial Need is simply the difference between the Cost of Attendance and the student's Expected Family Contribution. If there is a remaining figure, the student is considered to have financial need. Most aid programs require students to have financial need; however, if there is no remaining need the student may still be eligible for a Federal Direct Unsubsidized Loan.

The chart below uses estimated costs for two semesters for the 2018-19 academic year:

COMMUTER - Students who reside with their parents.		
Commuter Expenses	Full Time	Part Time
Tuition and Fees	\$5,988	\$2,994
Living Expenses	\$3,450	\$3,450
Books and Supplies	\$1,968	\$ 984
Miscellaneous Expenses	\$1,762	\$1,762
Transportation	\$2,707	\$2,707
<b>Total</b>	<b>\$15,875</b>	<b>\$11,897</b>

OFF-CAMPUS - Students not residing with their parents.		
Off-Campus Expenses	Full Time	Part Time
Tuition and Fees	\$5,988	\$2,994
Living Expenses	\$8,072	\$8,072
Books and Supplies	\$1,968	\$ 984
Miscellaneous Expenses	\$1,762	\$1,762
Transportation	\$2,707	\$2,707
<b>Total</b>	<b>\$20,497</b>	<b>\$16,519</b>

Non-Pennsylvania Residents – attending full time will pay approximately \$7,548 for tuition and fees and approximately \$3,774 for part-time status.

**Special Circumstances** – If the student’s family has unusual circumstances that change their financial situation, the student should contact the Office of Financial Aid Services at the campus they attend. Examples include: loss of employment, divorce, separation, or death of a parent or spouse.

### **Additional Eligibility Criteria**

To be eligible for Federal Student Aid a student must:

- Be enrolled in an eligible degree, certificate or diploma program;
- Be a citizen or eligible noncitizen of the United States;
- Have a valid Social Security Number;
- Have a high school diploma or GED certificate, or have completed homeschooling;
- Maintain satisfactory academic progress;
- Not owe a refund on federal student aid or be in default on a federal student loan;
- If a male, register (or already be registered) with Selective Service;
- Not have a conviction for the possession or sale of illegal drugs for an offense that occurred while receiving federal student aid;
- Not have received financial aid in excess of annual or aggregate limits.

Federal regulations mandate that students should only take courses that apply to their program of study. No aid is awarded for audited courses or credit by examination.

### **Satisfactory Academic Progress (SAP)**

In order to receive financial aid, you must make Satisfactory Academic Progress (SAP) as defined by the U.S. Department of Education. SAP is different from the College’s definition of academic standing. All HACC students who have completed a Free Application for Federal Student Aid (FAFSA) and wish to be considered for federal financial aid must meet the criteria stated in this policy. These requirements apply to part-time as well as full-time students for all terms of enrollment within an academic year. Evaluation of SAP is made at the end of each semester (Fall, Spring, Summer) by the Financial Aid Office once grades are available in the system. This review looks at grades received, courses attempted, GPA, and pace towards graduation.

1. Satisfactory Academic Progress (SAP) will be checked after **every** term (Fall, Spring, Summer).
2. Students must pass 67% of all their coursework.
3. Students must maintain a specific cumulative GPA after each term according to the credits they have earned

Total Credit Hours Earned	Minimum Cumulative GPA Required
Up to 12	1.0
13 - 24	1.20
25 - 36	1.40
37 - 48	1.60
49 - 60	1.80
61 or Greater	2.00

**Warning Status:** Students who do not meet the cumulative GPA and 67% credit hour completion rate each semester will be placed on financial aid warning. During their warning term, students are permitted to receive federal aid. However, if students do not meet the SAP criteria after their warning term, they will be placed on financial aid suspension and their aid cancelled for all upcoming terms.

**Appeal Process:** Students placed on financial aid suspension may appeal the decision if there are extenuating circumstances. All financial aid appeals require the completion of an Academic Plan as described in the appeal application. If the appeal is approved, students may receive financial aid but must meet SAP criteria by the end of that term. If they do not make progress, their aid is cancelled. Aid will not be reinstated until the student clearly makes the required SAP criteria (67% and GPA). If the appeal is denied, students must meet SAP criteria before aid will be reinstated.

**Maintaining Eligibility:** Students are expected to follow the Academic Plan submitted with their appeal to maintain financial aid eligibility after an appeal approval. Failure to follow the Academic Plan can lead to the loss of financial aid eligibility.

**Returning to good SAP standing:** Aid will not be reinstated until the student clearly makes the required SAP criteria (67% and GPA). Students meeting SAP standards will return to good standing and be eligible to receive financial aid. However, aid will not be reinstated retroactively.

**PHEAA State Grant regulations:** The Satisfactory Academic Progress policy for Pennsylvania State Grants is not covered under this policy, but is instead determined separately by the Pennsylvania Higher Education Assistance Agency (PHEAA).

### **Awarding Financial Aid**

Eligible students who complete the aid process will receive an award letter, identifying the type(s) and amount(s) of aid for which the student is eligible. Generally, aid is awarded for a full academic year. These awards are divided between the terms for which the student plans to enroll. Financial aid awards may be modified at any time during the award year due to the situations listed below.

- Failure to maintain Satisfactory Academic Progress.
- Any change in status (including grade level, program study or credit hours attempted).
- Receipt of additional funding not listed on the award letter such as PHEAA State Grant, private scholarships, vocational rehabilitation assistance, veteran benefits, Pennsylvania EAP, tuition waivers, employee tuition assistance, etc.
- Previously submitted inaccurate, incomplete or conflicting information.

Students will be notified of changes through their student email and should review awards through myHACC.

### **Disbursing Financial Aid**

The financial aid listed on the award letter should appear on the student's schedule bill. If the student does not have enough financial aid to pay charges, it is the student's responsibility to pay the difference by the tuition due date or be at risk of being dropped from classes. Students who have financial aid in excess of their tuition and fees can charge their books at the bookstore.

*Payment of Financial Aid* – Generally, financial aid is paid to a student's account 30 days after the student's first day of class each term. Single-term student loans are disbursed in two disbursements during the term with the second disbursement occurring after the middle of the term. Aid must be applied to charges on the student's account before a refund will be generated.

*Refunds* – Students whose financial aid award is greater than their charges will receive a refund within 14 days from the date their award is paid to their account. This refund is to be used for other educationally related expenses. Refunds are distributed to students through Bank Mobile, a third-party servicer. Refunds are sent based on the student's refund preference through Bank Mobile.

### **Withdrawing or Failing courses**

Students who receive all "F" grades or a combination of all "F" and "W" grades for a term will have their aid recalculated at the end of that term. When this occurs, students may owe money on their account even if the term is over. Students should meet with Financial Aid Staff before withdrawing from courses. This is important because a withdrawal may affect the student's eligibility for financial aid and result in the student having to repay all or a portion of their financial aid. If the student officially or unofficially withdraws from HACC prior to completing 60 percent of the term, the aid received (or a calculated portion of the aid) will be returned to its source.

### **Financial Aid Programs**

There are two types of aid programs, Gift Aid and Self Help. Gift aid is not repaid and includes Grants and Scholarships. Self Help are funds which are repaid or earned and include loans and Federal Work Study. With the exception of the Pell Grant program, enrollment of six (6) or more credits is required to receive financial aid Grants.

Federal Pell Grants are awarded to undergraduate students with high need. Students are limited to six years of full-time Pell regardless of when or where they receive the Pell Grant.

Supplemental Educational Opportunity Grant (SEOG) – awarded to students with high need who complete the FAFSA by February 15th. Funds are awarded on a first come, first served basis.

PHEAA State Grant – limited to Pennsylvania residents who have resided in the state for one (1) year without attending college AND are pursuing an associate degree. Students are limited to the equivalent of two full time years of State Grant. This award is not determined by HACC but is determined by the PHEAA State Grant Agency. Students who enroll for more than 50 percent online courses are ineligible for PHEAA Grants.

**Scholarships** are offered through the HACC Foundation or from outside groups. They can be based on merit, financial need, or other criteria. To be considered for HACC scholarships, students must file a FAFSA and complete a scholarship application. For more information, visit. For a list of outside scholarships, please visit HACC’s website <http://www.hacc.edu/scholarships>.

**Federal Work-Study (FWS)** provides jobs to students with financial need, allowing them to earn money to help pay for educational expenses. Jobs may be available on campus and at approved off- campus locations. Students are paid bi-weekly based on the number of hours worked. The money is earned and is not deducted from the student’s bill.

**Loan Programs:** Loans are borrowed money that must be repaid with interest. For Federal Direct Stafford loans, repayment does not begin until six months after the student graduates, withdraws, or drops below six (6) credits. If students drop below six (6) credits, they may not be eligible to receive a student loan disbursement. HACC automatically awards loans to all students who file the FAFSA and are eligible. HACC will award loans up to a student’s maximum eligibility. Annual base loan limits are \$3500 for freshman students and \$4500 for sophomores (30 or more earned credits). Dependent students may be eligible to receive up to an additional \$2000 in unsubsidized loans and independent students an additional \$6000. Before loans are applied to the bill, students are required to take action by accepting, declining or reducing their loan funds. Students should borrow wisely and reduce or cancel their loans with HACC if they do not need the full amount listed on their award letter. Dependent students are limited to \$31,000 and independent students are limited to \$57,500 in lifetime loan undergraduate borrowing.

**Federal Direct Stafford Loans** are either subsidized or unsubsidized. A SUBSIDIZED loan is awarded on the basis of financial need. Students will not be charged any interest while enrolled in a least six credits. An UNSUBSIDIZED loan is NOT awarded on the basis of need. Students will be charged interest from the time the loan is disbursed until it is paid in full. The student has the option of paying or not paying the interest and principle while in school.

First-time are required by the Federal government to complete loan entrance counseling and sign a Master Promissory Note (MPN) online at [www.studentloans.gov](http://www.studentloans.gov). The FSA ID is required to complete both.

**PLUS loan:** Parents of dependent students may also borrow to pay for educational expenses. The annual limit is equal to the student’s cost of attendance minus any other financial aid received by the student. Dependent students whose parents are denied a PLUS loan may be eligible to borrow up to an additional \$4,000 through the Unsubsidized Federal Stafford Loan program. The parent PLUS loan application is available in the student’s *myHACC* account.

### **Gainful Employment**

Gainful Employment pertains to programs which are financial aid eligible but do not lead to an associate degree. This includes: diploma and certificate programs as well as some programs within Workforce and Community Education areas. Federal regulations require the College to disclose specific information about these programs. Information on occupations, rates for completion and placement, program costs, and median loan debt are included in these disclosures. Students may find this information by going to [www.hacc.edu](http://www.hacc.edu) where they can select an area of study. The Gainful Employment information can be found on each specific webpage for those programs that are eligible.

### **Veteran Benefits**

A Military and Veteran Affairs Office is located at each HACC campus. These offices provide information about GI Bill® benefits for veterans, eligible dependents of veterans, members of the National Guard, Selected Reserves and Active Duty service persons. The Military and Veteran Affairs Offices also assist students in applying for veterans benefits. Students may contact the MVAO at their respective campus:

Central, Harrisburg & Virtual Learning	717-780-2331	Gettysburg Campus	717-337-3855 x113534
Lancaster Campus	717-358-2954	Lebanon Campus	717-270-6346
York Campus	717-718-0328 x513226		

Information about the VA work-study program and tutorial assistance is also available. Students should refer to the Military and Veteran Affairs page at [www.hacc.edu/students/veterans](http://www.hacc.edu/students/veterans). Information and current benefit rates can be found at <http://www.benefits.va.gov/gibill>. The major benefit programs are:

- GI Bill® – Chapters 30, 32, 33 (Post 9/11), and 34
- GI Bill® – National Guard & Selected Reserves – Chapter 1606, 1607
- Survivors & Dependents Education Assistance Program – Chapter 35
- Vocational Rehabilitation & Employment – Chapter 31
- PA National Guard Education Assistance Program (EAP)
- Federal Tuition Assistance (FTA/TA)

Application: Veterans must complete an initial application for GI Bill benefits at <http://www.benefits.va.gov/gibill>. A Veterans Benefits Request Form (Yellow Sheet) must be completed each semester to continue to receive benefits. The Yellow Sheet is found in your myHACC account under the student tab.

Advance pay: Veterans may request Advance Pay (GI Bill Chapters 30, 35 & 1606) if they are new students or have a 30-day break between terms. Advance Pay checks are sent directly to the school.

Disabled Veterans: Veterans with service-connected disabilities can contact a VA Vocational Rehabilitation Counselor at 717-221-4445 or our VetSuccess VA Counselor at 717-780-2310.

Eligibility: All credit programs offered by HACC are approved for VA Education Benefits. Most workforce development programs are also approved for benefits. Please contact HACC's MVAO-Central office for additional details. HACC is a fully accredited Service members Opportunity College, NAVPA and a ConAP member.

Financial Aid: Veterans are encouraged to apply for financial aid by submitting a Free Application for Federal Student Aid (FAFSA). Veterans must report on the FAFSA if they will be receiving veterans' benefits.

Guard members: Education Assistance Program (EAP), Federal Tuition Assistance, and Loan Repayment Program may be available. Students should contact their unit of assignment on these additional programs.

Satisfactory Progress: Veterans should be aware of the requirements for satisfactory academic progress mandated by the Department of Veterans Affairs in accordance with College academic policy described in this catalog. The VA will be notified when a student is not making satisfactory progress.

Selected Reserves: Federal Tuition Assistance and other benefits may be available. Students should contact their unit of assignment on these additional programs.

Summer terms: Summer benefit rates will vary for each summer term. A Training Time Equivalency Table can be found on the MVAO web page. The Military and Veteran Affairs Office will assist students in calculating their benefit estimate.

VA Work-Study Allowance Program: Veterans attending  $\frac{3}{4}$  time or more and receiving GI Bill benefits may apply for VA Work-Study to work in the Military and Veteran Affairs Offices on a HACC campuses. For more information on this program call 717-780- 2331.

Veterans Benefits Request Form (Yellow Sheet): This form must be completed each term a veteran/ dependent registers for classes in order for HACC to certify attendance to the Department of Veterans Affairs (VA). Failure to complete this form will result in an interruption of benefits.

*\* GI Bill® is a registered trademark of the U.S. Department of Veterans Affairs (VA). More information about education benefits offered by VA is available at the official U.S. government Web site at <http://www.benefits.va.gov/gibill>*

## **Academic Support Services**

### **Tutoring**

Free tutorial assistance and workshops in academic skills development are provided to HACC students. The office is staffed with professional and peer tutors who assist students seeking to improve their skills in reading, writing, accounting, math, science, and academic success. Tutorial sessions may be arranged for students who require assistance in other subjects. All inquiries regarding these and other services, including Smarthinking (online tutoring), should be

directed to the tutoring and testing office at your location. Tutoring in Harrisburg is located chiefly in Whitaker Hall and includes an Accounting/CIS/Economics Center (W121), Writing/Communications Center (W122), Mathematics/Science Center (W117), and Biology Center (W123). Tutoring in Lancaster is located in Main room 232. Tutoring in Lebanon is located in room D220. Tutoring in Gettysburg is located in the Learning Commons. Tutoring in York is located YL103 and the York Writing Center is in Cytec 130. Hours for tutoring are posted at the beginning of each term.



### **Academic Coaching**

Academic coaching is a voluntary support service for students who want to improve their academic and study skills. Academic coaches assist students in determining their academic concerns, identifying campus resources available to help them, and refining their time management, organizational, and test preparation skills. Personalized sessions are conducted by appointment and are confidential.

### **The Test Center**

The Test Center provides a variety of services that promote academic success, personal growth, and career development. Its mission is to provide a secure, comprehensive environment for testing candidates while maintaining testing integrity within a system of support for faculty and professional organizations.

Exams offered by the Test Center may include:

- Academic Placement Testing
- Academic Make-Up Exams
- CLEP Exams
- TEAS exam (all campuses) and Health Occupations Aptitude Exam (Lancaster and York only)
- HS ACT, PearsonVUE, NBCC, Comira, PAN and MOS Testing (Harrisburg only)
- Proctoring for other institutions on a pre-arranged basis

For additional information regarding Test Center services, contact the Tutoring and Testing office at any HACC location.

### **Carl D. Perkins Vocational and Technical Education**

Students enrolled in career programs who need assistance to successfully complete their programs may have access to support services through the Perkins Act. These federally funded projects help sponsor eligible students with resources such as academic advising, tutoring and academic support.

### **Academic Monitoring**

HACC's academic monitoring system is an early-alert method. This method is used to identify students who may be in danger of academic failure to suggest avenues of assistance available—from tutorial services to academic advising and personal counseling.

### **Foundational Studies**

Courses are designed to help students realize personal and career goals based on their values, needs, skills, and interests. The classes are limited in size so that greater attention may be directed to individual students, and classes are designed so that a great deal of interaction among class members is encouraged. Credit from these courses will count as elective credits toward the associate degree, and many FS courses fulfill the first year seminar requirement.

### **Office for Disability Services**

In admission to its programs, courses, and facilities, the College will not discriminate against a qualified student with a disability. However, admission to a particular program may require students to meet technical standards required by the program. With this exception, the College will make reasonable and appropriate accommodations and adjustments.

The College will assist in providing academic accommodations to students with documented disabilities. Documentation of a disability by a licensed professional should be submitted to the Office for Disability Services. Dependent upon the disability, qualified students may receive accommodations such as extra time for testing, testing in a limited distraction environment, ability to record class, etc.

Each HACC campus/ center provides physical accommodations according to ADA guidelines. Electric doors are installed throughout the campuses providing access for students with mobility impairments. Parking spaces for individuals with disabilities are identified at all campuses.

Accommodations or special arrangements for students with disabilities may be made by contacting the Office for Disability Services at the student's primary campus. Additional information is available online at [www.hacc.edu](http://www.hacc.edu).

### **KEYS Program**

A 12 year-old collaboration of the PA Department of Human Services and all 14 PA Community Colleges, the KEYS Program is designed to help students succeed. Eligibility is for those receiving cash benefits (TANF) or food stamps (SNAP).

The KEYS Program provides academic support, career counseling, job search assistance, financial aid guidance, personal encouragement, college and community resource information, peer support, and incentives for accomplishments. All majors are open to KEYS students. Class and study hours count towards county requirements for an approved activity, and may also provide child care allowance, books and supplies and transportation allowance.

The KEYS Program is represented on all 5 HACC campuses. All referrals must come from the County Assistance offices for those who are already enrolled or wish to enroll (high school diploma or GED required). For more information, contact a County Caseworker or visit the KEYS office at any HACC campus or call 717-780-1181.

### **Transferring from HACC**

The College provides advising and resources for students planning to transfer. The earlier a student decides where he or she intends to transfer, the more likely a suitable HACC program can be arranged with the help of academic advising.

HACC has formed partnerships with many colleges and universities that assure admission with junior standing providing an approved program of study is followed, the required GPA is maintained, and an associate degree is earned. A list of these colleges/ universities is located on the HACC website. Many other transfer options are available for students. Transfer representatives from many colleges and universities visit the HACC Campuses each semester.

### **Career Services**

An integral part of any college student's educational experience should be career development. To be successful in the challenging workforce of the twenty-first century, students need to be proactive and have the foresight to connect their education to the world of work. For this reason, each campus of HACC offers a Career Services office to assist students in attaining career success.

The Career Services offices at each campus can help students at all stages of their educational journey. Early in their experience, students can use Career Services resources to explore career options and make informed decisions about majors and occupations. Once a student has decided on a major, the Career Services staff can help design a career development plan and explore in-field experience options. As students begin to move toward completion of their programs, Career Services staff can help them prepare for the job search. Thus, the Career Services office at each campus is a "one-stop shop" for everything career related.

Students are encouraged to visit their local campus career office and to explore the Career Services webpage at [www.hacc.edu](http://www.hacc.edu) in order to learn more about how Career Services can—and should—be a vital part of their educational experience at HACC.

## **Student Development**

HACC students who participate in college activities are more satisfied with their college experience. These students feel connected to the College and they enjoy meeting other students while developing their leadership qualities and skills. Activities are organized at all campus locations. HACC offers a variety of activities, and they can consume as much or as little time as a student prefers. Bulletin boards, *myHACC*, college newspapers, and HAWKmail e-mail updates are resources for students to stay informed of campus activities and happenings.

The funds collected as activity fees from currently enrolled students support student groups and activities. Students will find clubs based on shared interests in recreational activities, intramural sports, career or special interests. New clubs can be formed by interested students by contacting the campus Student Development office. Students may access Student Development information online at [www.hacc.edu](http://www.hacc.edu).

## Multicultural Programs

HACC is committed to diversity—promoting a wide range of ideas, and working to foster mutual respect among people of every race, ethnicity, economic class, religious preference, gender and gender expression, physical ability, sexual orientation, and age. We believe that meaningful interaction with others from different backgrounds is one of the best ways to build understanding and to prepare students for the diverse world into which they will graduate, work, and live. HACC strives to provide a supportive atmosphere for students of diverse backgrounds by sponsoring activities that increase awareness and build mutual respect and understanding. Multicultural celebrations at HACC present an opportunity to enjoy the richness that a variety of cultures, ethnicities, and backgrounds bring to the community. These special events include distinguished speakers, panel discussions, art exhibits, cultural dances, ethnic food festivals, arts and crafts and poetry readings. For more information on multicultural programs, contact your campus Student Development office or online at [www.hacc.edu](http://www.hacc.edu).

## Student Programming Boards

Student Programming Boards (SPB) plan and develop student activities and events for the student body at each campus. SPB members select events, organize details and marketing, and contribute to establish the sense of community on each HACC campus. Events are student-directed and include opportunities to learn, socialize, have fun, and make a connection to campus life. If you are interested in becoming involved in your campus Student Programming Board, contact your campus Student Development office.



## Student Government

Student Government Association (SGA) senators are chosen through general elections in which all students are eligible to participate as candidates and electors. The SGA prepares a budget that allocates funds to student organizations and events. SGA represents student views on current issues to the faculty and administration. Student representatives participate in the college's Shared Governance process, ensuring that the student voice is heard in matters pertaining to the HACC student experience. Further information about the Student Government Association at HACC may be obtained by visiting the Student Development office at your campus. As a resource for students, the Student Handbook is published online in *myHACC* and includes information about College resources, student activities, and school regulations.

The Virtual Learning Student Advisory Council (VLSAC) is the student governing body for students attending classes online through the College's Virtual Learning unit. Participation in VLSAC is available to all students (regardless of location) through the use of conferencing software. If you are a student interested in being involved in VLSAC, please contact [vlsc@hacc.edu](mailto:vlsc@hacc.edu).

## Student Publications

There are several student publications for those interested in writing, editing and publishing. At HACC's Harrisburg Campus, the Fourth Estate, a student newspaper, is published monthly; students assume responsibility for gathering news and expressing opinion. The student newspaper at HACC's Lancaster Campus, the Live Wire, is also published monthly.

The Wildwood Journal is an annual literary magazine that includes the writing of HACC students as well as the writing of winners of a national competition sponsored by the Alumni Association. The Lancaster Campus also publishes a literary journal entitled, Voices. More information about student publications may be obtained by contacting the Student Development office of your campus.

## Athletics and Recreation

The HACC Athletics program is composed of seven varsity intercollegiate teams and one club team. The varsity intercollegiate sports participating in the National Junior College Athletic Association offered are: men's and women's basketball, golf, soccer, men's and women's cross country and women's volleyball. Men's volleyball is a club sport. Participation is open to students at all HACC campuses, as long as they meet the eligibility requirements.

The Evans Center and outdoor athletic facilities, which are comprised of a fitness center, gym, swimming pool, racquetball court, sand volleyball court, tennis courts, and athletic fields are available for all students to enjoy with a current HACC ID.



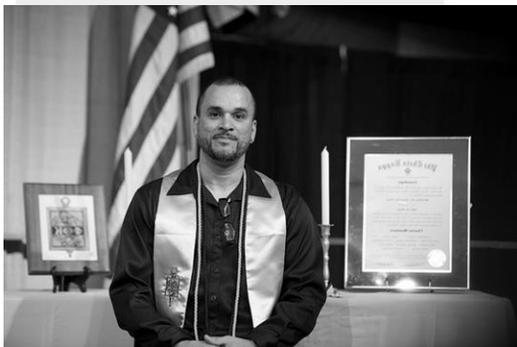
Intramural sports are offered in a diverse array of sporting activities that include team sports, individual sports and events. Credit courses are available in Physical Education/Exercise Science Department information. More information can be found online at <http://www.hacchawks.com>.

### **Honor Societies**

**Alpha Delta Nu:** Alpha Delta Nu is the Honor Society for Associate Degree Nursing Programs, established to promote scholarship and academic excellence in the profession of nursing. Membership is offered to nursing students who have maintained a cumulative GPA of 3.0 and have earned a grade of B or better in each nursing class in the program. Students have also demonstrated conduct on campus and the clinical areas that reflect integrity and professionalism. Members of this honor society are wearing peach colored honor cords.

**Lambda Beta National Honor Society for Respiratory Care:** Lambda Beta is a national honor society for those in the profession of respiratory care. The purpose of the society is to promote, recognize and honor scholarship, scholarly achievement, service and character of students, graduates and faculty members of the profession. The name of the society is based on the goals of the profession: sustaining life (lambda) and breath (beta) for all. Lambda Beta members can be recognized by the blue and green honor cords worn on their gowns. The HACC chapter was formed in 2010.

**Mu Alpha Theta National Mathematics Honor Society:** Mu Alpha Theta, a National Mathematics Honor Society, is dedicated to inspiring interest and scholarship in two-year college students for the subject of mathematics. Members are recommended by mathematics faculty, have completed college algebra, and have at least a 3.0 GPA overall and in mathematics. The HACC Chapter was established in 2000.



**Phi Theta Kappa International Honor Society:** HACC is home to the Alpha Nu Omega chapter of Phi Theta Kappa, the national honor society serving two-year colleges. Since its founding in 1918, Phi Theta Kappa has sought to recognize and encourage scholarship among associate degree students. HACC's chapter has received national recognition for the excellence and integrity of its programs. Membership in Phi Theta Kappa is extended by invitation. To be considered, a student must be enrolled in classes, have completed at least twelve hours of course work leading to an associate degree, have a grade point average of at least 3.5, have established a record of academic excellence as judged by the faculty, be of good moral character, and possess recognized qualities of citizenship. For more information, see [www.ptk.org](http://www.ptk.org).

### **Child Care**

Many HACC students are also parents and for their convenience the Grace Milliman Pollock Childcare and Early Childhood Education Center offers child care for preschool children on the Harrisburg Campus. U-Gro® provides the care for the children. Children are eligible for acceptance into the center if they are between 6 weeks and 8 years of age.

Elementary school children (up to eight years of age) may be accepted during summer terms and on an emergency basis if space is available. Applications are accepted on a first come, first-served basis until enrollment limits of 29 are reached. Applications and specific information can be found at [www.hacc.edu](http://www.hacc.edu) or by calling 717-780-2581. Parents must take the completed application to room 118 of the Grace Milliman Pollock Childcare and Early Childhood Education Center.

U-Gro® provides childcare at the Lancaster Campus for infants, toddlers, and preschoolers, ranging in age from six weeks to six years old. Specific information for U-Gro® at HACC's Lancaster Campus is available by calling 717-293-5000.

### **Cultural Programming**

A leading south central Pennsylvania center for the fine and performing arts, the Rose Lehrman Arts Center is home to the College's Live at Rose Lehrman performing artist series, an annual season of live theatre, music, and dance events. The center's facilities include the Auditorium Theatre, the Studio Theatre, Costume and Scenic Shops, Movement Studio, Makeup Lab, a Gallery, the Rose Garden, box office, and concession.

Programming showcases international, national, and regional talent. Events are often supplemented by artists' residencies and free workshop/performances conducted for students and the community.

HACC Theatreworks produces diverse theatre offerings to include the classics and contemporary works. The Theatre for Young People, a specialty theatre group, annually produces professionally mounted children's theatre. Auditions for productions are open to all students and the community. The center supports a successful theatre outreach program that brings thousands of young people to the campus to experience and learn about live theatre. The HACC Choir, a faculty-led student choral group, presents two concerts each year. The Rose Lehrman Art Gallery in the Rose Lehrman Arts Center features the work of guest artists from across the country as well as student honors shows. Shows change monthly; admission is free. The Gallery is open weekdays on Monday- Friday, 11 a.m. – 3 p.m., and Tuesdays and Thursdays from 5-7 p.m. For more information, call 717- 780-2478.



Student tickets are available at a substantial discount for cultural events. Information and season brochures and flyers may be obtained by phoning the Rose Lehrman Arts Center Box Office at 717-231-ROSE. Live at Rose Lehrman performing artist series website, [www.liveatroselehrman.org](http://www.liveatroselehrman.org).

### **Health**

HACC does not have an infirmary or a student health center. Students who become ill or need emergency treatment may be taken to nearby medical facilities for treatment. College public safety & security officers are trained in basic first aid which is the medical attention that is given to an ill or injured person before medical experts are requested or arrive on the scene. The College neither assumes financial responsibility for medical treatment of students, nor assists with additional medical services. Students who need routine medication or medical assistance must provide for their own care, as the College may not serve such medical needs. Information regarding medical insurance for students is available in the Student Development Office at each HACC campus.

### **Housing**

HACC has no dormitories and does not approve, or supervise housing for students. Any agreements concerning rent or conditions of occupancy are made between the student and/or parents and the landlord. The College does not participate in any housing arrangements or assume responsibility for any housing contracts.

## **College Policies**

### **College Disciplinary Policy Statement of Individual Rights of All Members of the College Community, Visitors, and Guests.**

These rights of all members of the College community, students, faculty, administration, authorized visitors and guests, shall remain inviolable:

- To learn, teach, study and search for truth without interference or harassment.
- To move about the campus and in campus buildings freely and without interference or harassment of any kind.
- To express opinions freely and without interference, individually or in groups, as long as such expression does not interfere with any other individual rights hereby guaranteed, other College policies/procedures, or result in damage to property.
- To be treated at all times with the courtesy and respect due to all human beings, regardless of ethnic origin, cultural background, sex, gender identity, sexual orientation, religion, creed, or ideology, as long as one displays a decent regard for the rights of others as provided in this Statement of Individual Rights.

The right to express oneself is strongest in those campus places and activities that are organized for the purpose of speaking and listening. Examples include the classrooms and organized academic discussions. In such situations, it is expected that diverse views may be voiced, including those that may be distasteful. In other such places and situations where members of the College community do not gather primarily for the purpose of speaking and listening in an open forum, such as common dining areas, the right to express oneself is tempered by the right to be free of harassment. In situations involving External Entities, the rights articulated herein are subject to the College's policy on Facilities and Grounds Use by External Entities (College Policy 372) and other policies of the Board pertaining to the same subject.

Outside individuals and groups invited by recognized faculty, student, or staff organizations are not subject to CP 372 but may be subject to other policies of the Board.

### **Statement of Practices Constituting Unacceptable Conduct**

The following list constitutes practices and conduct, which are unacceptable for any member of the College community, students, faculty, administration, visitors and guests.

- Physical obstruction or interference with College classes or activities or approved activities of External Entities:
- Any person participating in such activities
- Any person going to or from such activities
- Permanently posting materials on any walls, windows, doors, sidewalks, trees, light poles, etc., or any other College equipment (except in designated posting areas) or writing graffiti.
- Violating College harassment policy (College Policy 871, Harassment).
- Physical abuse of or detention of any person on College-owned property, or at any College-sponsored or supervised function, including the detention of any person by the actual threat of serious bodily harm or the destruction of property, or conduct which unreasonably endangers the health or safety of any person.
- Theft of or damage to College-owned or controlled property or that of any person lawfully on the campus.
- Threatening other individuals with physical harm.
- Committing any act likely to create an imminent safety or health hazard.
- Entry to or upon, or use of College grounds, buildings, or facilities, when such entry or use constitutes a violation of College policies and procedures.
- Engaging in speech that includes fighting words, which are those words that by their very utterance tend to incite an immediate breach of peace.
- Interfering with, impeding or causing blockage of the flow of vehicular or pedestrian traffic.
- Use, possession, distribution, or being under the influence of alcohol, narcotics, or prescription drugs (not as legally prescribed) on College-owned or controlled property, or at any off- campus College-sponsored or supervised activities.
- Use or possession of firearms, explosives, dangerous chemicals, or other items commonly used primarily for the purpose of inflicting harm on human beings or causing damage to property, on College owned or controlled property, except to the extent that permission to possess the same is granted by the person or persons duly authorized for this purpose.
- Failure to comply with the lawful directions of College personnel acting in performance of their duties.
- Willful and persistent conduct, by noise or other action, which unreasonably interferes with any lawful activity on College-owned or College-controlled property. In the enforcement of this policy, care shall be exercised to avoid inhibiting the right of free speech guaranteed in the Statement of Individual Rights.
- Hunting, fishing, or trapping animals or engaging in other conduct designed to harm or remove animals from the premises of the College unless authorized to do so by the Vice President, Finance and College Resources.
- Willful misuse of College-owned or controlled technology infrastructure including, but not limited to software, computers, telephones, Internet access, classroom instructional technology, network systems, etc.
- Violations of law on College-owned or controlled property, or at any off- campus College-sponsored or supervised activities.
- Violation of College policies or procedures not already noted above.

A complete copy of the College's student disciplinary regulations and procedures may be obtained from the Dean of Student Affairs. The regulations are also located on the HACC website.

### **Dismissal**

The College reserves the right to dismiss a student whose conduct proves unsatisfactory. Students found to have violated behavior regulations established by the College may be dismissed. The HACC website contains detailed information about College regulations governing student behavior and about Student Disciplinary Action (SGP 592).

The College may require that any student submit evidence of satisfactory physical or mental health, certified by a licensed medical practitioner. To qualify for honorable dismissal, students must settle all outstanding obligations to the College and account for all College property that may have been issued to them. Students satisfying these requirements are then eligible to receive a copy of their College transcripts. Students who do not qualify for honorable dismissal will not be recommended by HACC to another institution.

## **Student Grievances - Shared Governance Procedure 591**

### **Purpose:**

To establish procedures related to the response to and resolution of student grievances.

### **References:**

ALS – Administrative Level Supervisor

CSAO – Chief Student Affairs Officer

### **Definitions:**

Student Grievance Committee (SGC) – A committee, made up of representatives from multiple college constituency groups, responsible for adjudicating and resolving formal complaints from students.

### **Handbook Detail:**

#### **STUDENT GRIEVANCES (formerly AP 591)**

1. In order to ensure speedy resolution of a grievance, the time limits prescribed herein shall be strictly adhered to unless a waiver is granted by the Chief Student Affairs Officer (CSAO) or designee. The College will maintain the confidentiality of grievances among those persons who have a need to know. The Student Grievance Committee (SGC) will also observe confidentiality throughout its processes.
2. Informal Phase
  - a. Within ten\* (10) business days of the date the student knew of the occurrence of the circumstance(s) causing the grievance, the student shall, if possible, contact the source of the grievance first. If that is not possible, or if the grievance alleges intentional misconduct by the source of the grievance, the student may contact that person's Administrative Level Supervisor (ALS) to attempt resolution of the problem. If neither of these two persons are available, a College Ombudsperson (Administrative Procedure 121, Ombudspersons) must be contacted in an effort to obtain an informal resolution to the problem. The ALS or College Ombudsperson may require the student to submit the concern in writing. The ALS or College Ombudsperson will maintain notes on any action taken on student complaints according to HACC documentation retention guidelines. Administrative Procedure (AP) 139, Records Management
3. Formal Phase
  - a. If a student is unsuccessful in resolving the grievance in the informal phase, or if a student chooses to grieve a decision or action by the College, the student must compose a grievance letter. This letter must be sent to the CSAO or designee within ten\*(10) business days of the occurrence of the circumstance(s) causing the grievance or after exhausting attempts at resolving the matter during the informal phase. The letter shall state the circumstance(s) of the grievance and the remedy requested, and include any documents supporting the request.
  - b. The CSAO or designee shall schedule a meeting with the student and the SGC no later than ten\*(10) business days after the receipt of the written grievance.
  - c. The CSAO or designee in consultation with the participants will determine the meeting site.
  - d. The CSAO or designee will forward any documents detailing previous action to date to the SGC members at least three (3) business days prior to the meeting date.
  - e. At least five (5) SGC members including at least one representative from each constituency group must be present for the meeting to proceed. These members can be any representative from the established constituency group pool.
  - f. Any party involved in the formal phase may bring witnesses and/or counsel to the meeting. If the SGC or any party intends to have another person in attendance at the meeting, they must notify the CSAO or designee at least three (3) business days before the meeting and the CSAO or designee must notify all parties within two (2) business days before the meeting, if possible. The role of the student's legal counsel is limited to advising the student. Any person who becomes disruptive shall be removed from the meeting at the discretion of the CSAO or designee.
  - g. Recordings or verbatim records may be maintained only upon agreement of all parties concerned. The records are to be maintained per AP 139.
  - h. After hearing all available evidence, the SGC shall render a decision within five (5) business days using the standard of preponderance of evidence (more likely than not).

- i. The CSAO will notify all parties of the decision and include a written summary of the decision rendered. The notification of the student will be sent via certified letter (return receipt requested) or emailed with read receipt response.
  - j. The CSAO will retain a summary of notes of the meeting with other pertinent material of the grievance, for a minimum of five (5) years.
  - k. The decision of the SGC ends the formal grievance process.
4. Student Grievance Committee (SGC) Composition
- a. SGC shall consist of the Chief Student Affairs Officer (CSAO) or designee, two (2) administrators appointed by the Administrative and Professional Organization (APO), two (2) full-time tenured faculty appointed by Faculty Organization, and two (2) students appointed by the SGAEC (Student Government Association Executive Council). Administrators and faculty members shall be appointed for three-year terms; students will be appointed for one-year terms. Pools of representatives from each constituency group will be recruited at least one time per year and must be trained. Anyone trained can be the representative for the constituency group during a hearing.
  - b. The Grievance Committee membership pool shall be appointed for three-year terms with staggered term dates. The pool will be designated effective July 1 of each year:
    - 1. Twelve (12) full-time faculty members from each academic department of the college including the library and counseling.
    - 2. Twelve (12) students designated by the president of SGAEC.
    - 3. Twelve (12) administrative/professional employees designated by APO.
  - c. The Grievance Committee will be comprised of six (6) members from the pool as defined above and contingent on the constituency group's membership of the parties involved in the grievance as follows:
    - 1. The committee for grievances involving parties from the same constituency group will be selected from that constituency group pool.
    - 2. The committee for grievances involving parties from different constituency groups will contain two members from the respective constituency groups, with a fifth member selected by mutual agreement of the respective constituency heads.
    - 3. Members of the grievance committee will be randomly selected from the committee pool to ensure members are not over utilized and/or continued objectivity of the grievance process.
  - d. The CSAO or designee will serve as the Ex-Officio Chair of the SGC and will be responsible for communicating the rules of order to all parties and documenting proceedings. The CSAO is a voting member of the committee.
  - e. Any member of this committee who has a potential conflict of interest shall be replaced only for the duration of the grievance. Any party involved in the grievance may request in writing that a member be removed and the CSAO or designee will make the determination if a conflict of interest does exist. The appropriate organizational body shall replace the member. In the event that there is a claim of a conflict of interest for the CSAO, the President of the College will make the determination. If a conflict of interest does exist, the President shall appoint a replacement to chair the committee.
- *Time limits may be extended by the mutual consent of both parties at any step of the grievance. In cases where a grievance is filed after the time limit specified in this Administrative Procedure, the CSAO may authorize the grievance to continue under these procedures at his/her sole discretion.*





# **Academic Affairs**

## Program Requirements

The College awards Associate in Arts (AA), Associate in Science (AS), Associate in Fine Arts (AFA) and Associate in Applied Science (AAS) degrees, Certificates of Proficiency, and Diplomas. Program guides outline the required courses needed to obtain the credential that is awarded upon successful completion. Most programs are offered at the Harrisburg Campus, and many are available at all of HACC's five campus locations, as well as through Virtual Learning. Program descriptions provide information about their availability.

### **Diploma**

Diploma programs offer a concentrated study of technical job skills, are usually chosen by students who need to acquire a specific technical skill as quickly as possible, and require the equivalent of one full-time semester completion. A diploma is awarded to students who complete an approved Program of Study of at least 15 credits with a Cumulative and Program grade point average of at least a 2.0. A Diploma must include coursework totaling at least nine credits earned at the College.



### **Certificates of Proficiency**

Certificate programs require one year or two terms (full-time) for completion, and all of the required courses focus on an occupational skill. These programs are most suitable for students with a specifically defined occupational goal. A certificate is awarded to students who complete an approved Program of Study of at least 30 credits with a Cumulative and Program grade point average of at least 2.0. A Certificate must include coursework totaling at least 15 credits earned at the College. Of those 15 credits, six credits must be taken in the area concentration of the certificate.

### **Associate Degrees**

The College offers degree programs that are designed for transfer to a four-year institution, as well as ones that prepare students to enter the workforce upon graduation. Full-time students, who are not placed into developmental courses, may complete associate degrees within two-years.

Students must complete an approved Program of Study of at least 60 credits with a Cumulative and Program grade point average of at least a 2.0. Coursework for a degree must include at least 15 credits earned under HACC faculty instruction and at least six of those credits must be in the student's area of concentration. Courses numbered below the 100-level may not be used to meet graduation requirements.

#### *General Education Outcomes*

General Education Outcomes are a common body of knowledge and skills that are integrated throughout the coursework of every associate degree program.

**Quantitative Literacy:** Select and apply mathematical tools to draw conclusions from quantitative data.

**Written Communication:** Write appropriately for audience, purpose and genre; demonstrate appropriate content, organization, syntax, and style; and acknowledge the use of information sources, according to convention.

**Critical Thinking:** Generate a new idea or artifact by combining, changing, or reapplying existing ideas or products.

**Technology Literacy:** Properly utilize technology to complete an assigned task.

**Oral Communication:** Competently construct and effectively present orally, information designed to increase knowledge, to foster understanding, or to promote change in the listeners' attitudes, values, beliefs, or behaviors.

**Information Literacy:** Demonstrate the ability to find, evaluate, organize and use information effectively and ethically.

These outcomes are taught and reinforced through Core Knowledge Area courses selected in the knowledge areas of written communication, oral communication, humanities and arts, social and behavior sciences, mathematics, natural and physical science and wellness. The chart below outlines the course requirements for each degree designation. Please see the list of approved Core Knowledge Area courses on page 40.

<b>Subject Areas</b>	<b>AS</b>	<b>AA</b>	<b>AFA</b>	<b>AAS</b>
Written Communication	6 Credits	6 Credits	6 Credits	3 Credits
Oral Communication	3 Credits	3 Credits	3 Credits	3 Credits
Humanities & Arts Elective	3 Credits	3 Credits	3 Credits	3 Credits
Social & Behavioral Science Elective	3 Credits	3 Credits	3 Credits	3 Credits
Humanities & Arts Elective or Social & Behavioral Science Elective	-----	3 Credits	-----	-----
Mathematics Elective	3 Credits	3 Credits	-----	-----
Science w/ a Laboratory Elective	3 Credits	3 Credits	-----	-----
Mathematics or Science Elective	3 Credits	-----	3 Credits	3 Credits
Wellness	1 Credit	1 Credit	1 Credit	1 Credit
First-Year-Seminar	1 Credit	1 Credit	1 Credit	1 Credit

Degree-seeking students are required to complete a First-Year Seminar (FYS). It is recommended that they complete this course prior to their 13th credit hour. The FYS course is designed to introduce students to essentials of college life, including goal setting, decision-making, academic skill building, and identifying college resources to facilitate academic success.



## Core Knowledge Area Courses Effective Fall 2018

### Humanities and Arts (H & A)

Arabic 101, 102  
Art 181, 182  
Chinese 101  
English 201, 202, 203, 204, 205, 206, 207, 207H, 217  
French 101, 102, 201, 202  
German 101, 102, 201, 202  
Spanish 101, 102, 104, 201, 202  
Humanities 101, 101H, 115, 201, 201H, 202, 202H  
Music 102, 102H, 104  
Philosophy 101, 101H, 102, 200, 225, 225H  
Theatre 101

### Social and Behavioral Sciences (S & BS)

Anthropology 101, 201, 205  
Communication 253, 253H  
Economics 201, 202  
Geography 201, 230  
Geographic Information Systems 141, 141H  
Government and Politics 201, 202  
History 101, 101H, 102, 103, 103H, 104, 107, 201, 202, 214  
Psychology 101, 213, 221, 229  
Sociology 201, 201H, 202, 203, 205

### Mathematics (Math)

Mathematics 100, 103, 104, 110, 111, 111H, 119, 121, 122, 202

### Natural and Physical Sciences (Sci/Lab)

Astronomy 103, 104  
Biology 101, 103\*, 103H\*, 108, 111, 121, 122, 221  
Biotechnology 101\*  
Chemistry 100, 101, 102, 113, 203  
Environmental Science 201  
Geology 101, 101H, 102, 201, 201H  
Meteorology 101  
Physical Science 113, 114  
Physics 105, 201, 202, 211

*\*Notes courses that do not contain a laboratory component. Indicated by abbreviation of (Sci).*

### Wellness (W)

Nursing 150  
Physical Education 109, 119, 130, 131, 132, 135, 137, 138, 139, 141, 142, 143, 165, 166, 169, 178, 179, 180, 181, 182, 183, 184, 201, 184, 201

### First Year Seminar (*fulfill the 1-credit FYS requirement*)

Allied Health 140 (3-credits)  
Architecture 111 (3-credits)  
Business 101 (3-credits)  
Cardiovascular Technology 100 (3-credits)  
Communication 110 (3-credits)  
Dental Hygiene 101 (6-credits)  
Education 110, 111 (4-credits)  
Emergency Medical Services 231 (4-credits)  
Engineering 102 (2-credits)

Foundational Studies 100 (3-credit)  
Foundational Studies 101 (1-credit)  
Foundational Studies 102 (1-credit)  
Foundational Studies 103 (3-credits)  
Geospatial Technology 201 (1-credit)  
Honors Studies 101H (3-credits)  
Medical Laboratory Technology 100 (2-credits)  
Paralegal 101 (3-credits)  
Science 100 (1-credit)

### 3 Credit First Year Seminar (*fulfill FYS requirement for students advised to take 3-credit FYS*)

Foundational Studies 100

Foundational Studies 103

**\* Note: The Core Knowledge Area Course Requirements listed above are required for students enrolling into program in the 2018-19 Academic Year. Students who enrolled at HACC in prior years should consult the appropriate college catalog for elective requirements.**

### **Subsequent Degrees**

After earning a degree from HACC, students must complete a minimum of 15 additional credits at HACC to be eligible for an additional degree.

### **Special Application Requirements**

Additional documents and procedures are required for students seeking admission into certain programs. Some programs may require the student to submit to State and/or Federal Criminal Background Checks, child abuse clearance, and other verifications prior to enrollment, the start of a clinical experience, testing and/or obtaining employment. Some clinical placements require physicals and proof of immunizations. The student should consider this factor before enrolling in programs which require these checks. If the student has any questions regarding this, he or she should contact the chair of the appropriate academic department.

## **Articulated Credit**

Students earn credits for successful completion of courses under faculty instruction at the College, including independent study. Students may also earn credits through a variety of other avenues.

### **Credit by Examination**

The College allows and encourages students who have completed advanced classes in high school or who have previous training or experience in an academic area to take examinations in those areas (see SG Handbook: "Credit by Examination"). HACC allows up to 30 credits to be awarded by examination and/or Life Experience.

Upon successful completion of an examination and proper notification to the Registrar's Office, the student will be awarded credit, which may be used to meet program requirements. Information on accepted exams and required scores is available for review in the Registrar's Office.

*The Advanced Placement (AP) Program*, administered by the College Entrance Examination Board, is designed for high school students who wish to earn college credits while in high school. These are national examinations which are designed to measure the competence of the student. The specific tests accepted and the scores necessary to receive credit have been determined by HACC faculty, and are reviewed and updated periodically as necessary.

*College Level Examination Program (CLEP)*: Students who wish to earn credit for courses because of previous training or experience may complete examinations offered through CLEP. The specific tests accepted and the scores necessary to receive credit have been determined by HACC faculty, and are reviewed and updated periodically as necessary.

*Excelsior College Examinations (ECE)*: These exams are administered through Excelsior College on a variety of subjects. Students may be eligible to earn credit based on ECE exam scores.

*International Baccalaureate (IB) programs* are offered by approved schools throughout the world. Student performance on IB assessments may allow students to earn credit for some HACC scores.

*HACC Credit by Examination*: Credit by an examination, similar to a comprehensive final examination, is available for many of the courses offered by the College. These examinations may be taken by students who have reason to believe that they can pass examinations of this nature because of previous training or experience. Examinations offered under this program are scored on a pass/fail basis. A student who wishes to earn credit by examination should contact the Chair of the Department that offers the course. A fee is required.

### **HACC Credit for Life Experience, Experiential Learning and Certification**

Students may request credit for knowledge, experience or skills gained outside the normal educational structure. In such cases, the student should go to <http://www.ccfasttrack.org/Home/About> and submit a petition. Students must be currently enrolled at the College and may not request credit for a course they have previously received a grade for (including Y, W or F). Students are required to submit credentials and/or a portfolio for evaluation. Upon assessment of the credentials and/or portfolio, the assigned assessor from the discipline may recommend awarding credit. A fee is required.

### **Other Professional Certifications**

The College also awards credit for certain certifications from professional bodies, agencies, and institutions. Please contact the Registrar's Office for information. The College may also award credit for training completed in the military,

industry or other non-collegiate setting that has been evaluated by the American Council of Education (ACE) or the National Program on Non-collegiate Sponsored Instruction (PONSI). Credit will be granted only when the training is directly relevant to the student's program of study. Credit from the military is awarded on a limited basis. To request an evaluation of non-collegiate training contact the Registrar's Office.

### **Credit by Transfer**

Students admitted to HACC seeking to earn a degree, certificate or diploma and who are currently taking or have completed courses at another post-secondary school, may request to have official transcripts from other schools officially evaluated for transfer of credits (see SG Handbook: Transfer of Credit into HACC Credit Programs). Transcripts from foreign educational institutions must be sent by the student to a recognized national credential evaluation service for possible transfer of credit to HACC. World Education Services, Inc. is the service normally used by HACC. Additional information can be found at [www.wes.org](http://www.wes.org).

Developmental Education courses do not transfer. When taking course work at another college with the intent to transfer this course work to HACC, a HACC student is advised to submit a prior authorization for transfer of credit. This confirms for the student how the course will transfer to HACC. This form is available in the Registrar's Office. Generally, credit is awarded only for coursework in which the student received credit with a letter grade of A, B, or C, except for Physical Education credit, which will transfer if a grade of P or S was received, where P or S grades are considered the equivalent of a C or above.



Students wishing to apply for transfer credit must submit an official transcript from the originating institution. In some instances, it may be necessary to provide course descriptions or syllabi. The official transcript and any supporting documentation should be sent directly to the HACC Registrar's Office. An official transcript is one that is officially authorized by the Records official at the institution and sent directly to the HACC Registrar's Office. Questions regarding transfer of credit requirements should be directed to the Registrar's Office, phone 717-780-2373 or email at [record@hacc.edu](mailto:record@hacc.edu).

### **Articulation of Courses with Area High Schools/Career and Technical Education Centers**

Many secondary school students may earn college credit through articulated coursework taken at an area high school or vocational-technical school. When it is determined that work comparable to that in a college course is taught at the secondary level, HACC enters into an articulation partnership with the secondary school. These articulation agreements enable students to earn college credit while at the secondary level if they meet a designated performance standard. Students must enter a program at HACC within two academic years of completing high school in order to be awarded articulated credit. Articulation agreements are in effect at many area secondary schools. Since additional agreements are being negotiated, a student should check with a guidance counselor at his or her secondary school.

HACC is a partner post-secondary institution in the statewide articulation of career and technical programs of study with the Pennsylvania Department of Education Bureau of Career and Technical Education. High school students who complete a career and technical education program of study may qualify for advanced credit. For more information on the articulated programs of study, contact an admissions counselor.

### **Dual Enrollment for High School Students**

HACC offers dual enrollment options for high school students looking to enhance their academic profile, save money on a future bachelor's degree or just get a jump-start on life after graduation. High school juniors and seniors can earn college credit at their high school, at a HACC campus or online. Students can choose from a variety of courses but are not permitted to take developmental level courses. For more information, contact the admissions office at the nearest campus.

## **The Honors Program**

The Honors program is designed to meet the scholarly needs of students demonstrating academic excellence. Qualified students who are interested in interdisciplinary, seminar-style learning and rigorous General Education curricula are encouraged to enroll. This program provides curricular, co-curricular, and experiential educational opportunities that promote student excellence. The program encourages the knowledge, skills, experience, critical thinking, and leadership abilities essential for a lifetime of integrative learning.

Honors classes are small, and enrollment is limited to no more than 15 students. They are often conducted as seminars and tutorials within which students do independent research. The classes are discussion based and interdisciplinary, linking developments in arts, humanities, sciences, and technologies. Focusing on diverse intellectual questions, students explore multiple points of view.

### **Honors Application Process**

Students may apply to the Honors program prior to, or at any time during, their enrollment at HACC. To apply, students should submit the online application, which can be accessed at [www.hacc.edu/honors](http://www.hacc.edu/honors), and email any required support materials to: [honors@hacc.edu](mailto:honors@hacc.edu). Qualified students will be invited for an interview with the Honors Co-Directors. A letter will be emailed to all accepted Honors students.

To be admitted to the Honors program, incoming high school students must have at least a 3.5 GPA, or be in the top 20% of their class at the time of High School graduation, have a combined 1150 SAT score (Reading and Math), or an ACT Composite score of 24. Current HACC students must have at least a 3.5 GPA. All English developmental course requirements (writing and reading) must be satisfied prior to enrollment in the program. Qualified students will also have to place into MATH 022 (or MATH 020) or higher at the time of enrollment. Students who do not meet these criteria must submit a recommendation letter from a HACC faculty member together with the online application to be considered. Any interested and motivated student may sign up for Honors courses without being enrolled in the program.

### **Honors Program Requirements**

The total number of college credits to earn an Associate degree is the same as for non-Honors students. The critical difference is in the depth and content of Honors courses. In order to graduate with the “Honors Scholar” designation, students must complete 15 credit hours of Honors (including the required HONS 101H: Honors Foundation Seminar) and maintain at least a 3.25 overall GPA. The Honors Foundation Seminar satisfies the first-year seminar requirement; therefore, it should be taken during the first year in the program. Honor students are expected to take at least one Honors course each academic year to maintain their Honor status. For the list of currently offered Honors courses please go to [www.hacc.edu/honors](http://www.hacc.edu/honors).

Students who have completed the Honors program as well as their Associate degree will have the “Honors Scholar” designation on their transcript. As part of the student’s regalia, a distinctive purple Honors cord will symbolize successful completion of the program.

#### **Honors Program Director**

David Liu  
Professor, Sociology  
[drliu@hacc.edu](mailto:drliu@hacc.edu)  
(717)780-2517

#### **Honors Program Coordinator, Harrisburg Campus**

Iva Balic, Ph.D.  
Associate Professor, English  
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(717)780-2557

#### **Honors Program Coordinator, Lancaster Campus**

Sarah Jacobson, Ph.D.  
Assistant Professor, Sociology  
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#### **Honors Program Counselor**

Maureen Osborne  
Professor, Counseling  
[nbosborn@hacc.edu](mailto:nbosborn@hacc.edu)  
(717)780-2326

### **Services for Students in Transition**

New students often require preparatory courses for college level work. This need is most commonly identified by the College’s Testing and Placement Program, which measures reading, writing and mathematical knowledge. HACC’s Developmental Education Services include diagnostic assessment and placement services as well as advising, academic monitoring, tutoring and other support services.

### **Developmental Courses**

HACC offers several courses designed for students who need assistance in sharpening their skills for college-level work. Students who would benefit from developmental courses are identified through the HACC Testing and Placement Program. Students placing into two or more developmental areas are required to enroll in FS 100 College Success prior to attempting 13 credits. Students should consult with their academic advisor to determine if FS 100 is a required course.

## **English as a Second Language**

HACC offers semi-intensive instruction in English for those adults whose native language is not English. Those who identify themselves as ESL students will be screened prior to class assignment and registration to determine second language needs and appropriate placement. English as a Second Language (ESL) is offered in concentrated eight-week sequences or in a less intensive sixteen-week schedule, depending on the campus location. For further information on HACC's ESL Program, refer to the Academic Planning section of this catalog, or online at [www.hacc.edu](http://www.hacc.edu).

## **GED® Testing**

HACC's Harrisburg Campus administers the General Educational Development (GED®) test on a regular basis. Those who achieve a satisfactory score on the test receive a Commonwealth Secondary School Diploma. This diploma, issued by the Department of Education and regarded as the equivalent of an earned high school diploma, certifies that the recipient meets the high school graduation requirements set by the State Board of Education. The Commonwealth Secondary School Diploma is also issued to applicants who successfully complete 30 semester hours of college level work.

To be eligible to take the GED test, a Pennsylvania resident must be 18 years of age or older and must not be enrolled in an approved or licensed secondary school. Persons 16 to 18 years of age may take the GED test at the written request of an employer who requires a high school equivalency diploma; a college, technical/trade school or university official who requires GED test scores for admission to their institutions; a recruiting officer of the armed forces who requires a high school equivalency diploma for enlistment; or a director of a state institution for residents, patients or inmates who is requiring testing for persons prior to their release or discharge from the institution. It should be noted that the Commonwealth Secondary School Diploma is issued only to persons 18 years of age or older. GED tests are scheduled on-campus regularly. An admission ticket and photo ID are required. The test consists of four parts and costs \$30 per part. Call 717-780-2619 for GED test information and registration.

## **Center for Global Education**

### **International Students**

Each year, HACC welcomes over 200 international students (F1 student visa holders) from more than 60 countries around the world to our campuses. A diverse student population helps create a global perspective in our classrooms and around our campuses.

International Student Admissions and Services within the Center for Global Education exist to support international students from admission to graduation in all aspects of their attendance at the College. Staff members are dedicated to assisting students with immigration responsibilities and benefits, academic advising, supporting academic success, promoting activities that lead to social integration, and acting as a reference point for all College services.



### **Study Abroad Program**

HACC offers students a wide variety of study abroad opportunities led by HACC faculty. Study Abroad programs afford students an excellent opportunity to learn more about themselves and the people and cultures that make up our country and the world. Courses are offered in many academic disciplines and can be used to fulfill major and general education requirements. Scholarships are available through HACC Foundation. In the last ten years, nearly 1,000 HACC students have taken part in a short-term, faculty led study abroad course. Applying for scholarships does not guarantee receipt of funds. For those who qualify, Financial Aid can be applied to the program fee. Contact the Financial Aid office on your campus for more information. Questions about Study Abroad? Contact the Center for Global Education at 717-780-1100, email [studyabroad@hacc.edu](mailto:studyabroad@hacc.edu) or online at [www.hacc.edu/global](http://www.hacc.edu/global).

## **Library Information Services**

*Empowering student success. Inspiring lifelong learning.* The HACC Library is here to meet this mission. The Library has five physical locations, online resources, and a dynamic group of librarians and staff to assist faculty, staff, and students at the college.

Library faculty are available to teach students face-to-face in campus libraries or classrooms, on the phone, and via online chat. Librarians work with students to define research topics and to find and use appropriate resources for their research. Librarians are also involved in classroom instruction, embedded in online courses and available for individual reference appointments with students.



When the HACC Library is closed, students continue to have librarian support 24/7 through Ask Here PA. Students are automatically referred to the Ask Here PA login when they click the HACC chat link if no HACC librarian is available.

HACC Library resources include physical books, magazines, journals, DVDs, and medical models. The Library's online resources include databases that include reference materials, magazine, journal, and newspaper articles, streaming video, and ebooks and ejournals. These online materials are available both on and off campus. Students use their HACC login credentials to access these materials when off campus.

The HACC Library provides study rooms and computer work spaces on each campus for individual or collaborative work. Laptop computers may be checked out at the service desks for use on campus or at home. Other equipment and medical models are available in some campus libraries for use in the library.

HACC students may borrow materials from other libraries through interlibrary loan. Students may also present their HACC ID at many local colleges to access these colleges' resources and borrow materials. Visit the Library website <http://www.hacc.edu/Library> to find all the resources available, contact information, online chat connections, and hours of operation.

## **Academic Policies**

### **Final Exams**

A final examination period is scheduled at the conclusion of each term. The Provost's Office, in conjunction with the Campus Deans, determines the schedule for exams. The schedule allows for examinations to be up to two hours in length.

### **Academic Achievement Policies**

Board of Trustees Policies, Shared Governance Policies, and Shared Governance Handbook documents may be examined by any member of the College community. A file of these documents is available in any College office and through *myHACC*. The statements of policy in this section are summaries, not the full policies, procedures, and guidelines that the College will follow.

Students have a right to appeal academic decisions affecting their academic status, including final grades, if they believe they can show that a decision was unfair. The first step for appeal is discussion with the person who made the decision. If resolution is not achieved, a formal appeal may be started following the procedures outlined in SG Handbook: Appeal of Academic Decisions. These steps must be taken within thirty days of the decision.

### **Grading System**

Midterm and final grades are available to students on-line through the student *myHACC* portal. Students access *myHACC* from the home page of HACC's website, [www.hacc.edu](http://www.hacc.edu). Midterm grades are issued in the fall and spring terms for courses meeting 12 or more weeks. Midterm grades are not issued during the summer terms. Final grades are available online at the conclusion of each term.

The following grading system is used:

Letter Grade	Grade Definition	Points Per Credit
A	Superior	4.00
B	Good	3.00
C	Average	2.00
D	Passing	1.00
YD	Work in Progress, Converted to a D	
F	Failure	
IF	Incomplete Work, Not Completed	
YF	Work in Progress, Not Completed	
W	Withdrawal	0.00
I	Incomplete	
Y	Work in Progress	0.00
S	Audit (No Credit)	0.00
CR/DR/FR	Academic Renewal	0.00



**The W (withdrawal) grade** should not be construed as prejudicial to a student’s record, although excessive use of the W may jeopardize academic standing and financial aid or veterans’ benefits. (Refer to the definition of Satisfactory Academic Progress.)

During the tuition refund period, no grade is recorded if a student drops the class. After the tuition refund period has ended and during the Drop/Withdrawal Period (prior to the completion of 70% of class time), a student must submit a request to drop the course either online through the *myHACC* portal or in-person at the Welcome Center. The request to drop is in pending status for 7 days during which time the student and instructor may communicate about the decision to withdraw. If no action is taken prior to the end of the pending status period by either the student or instructor, the course drop will be processed with a ‘W’ status.

**The I (incomplete) grade:** An “I” grade may be awarded by the approving faculty member to students who, because of extenuating circumstances, request additional time beyond the term to complete course work. The course work must be completed within the deadline set by the faculty member prior to the upcoming Fall or Spring term. An incomplete grade is computed as an F in the student’s cumulative grade point average when not completed within the allotted period. On the recommendation of the instructor and subject to the department chair’s approval, the deadline to complete may be extended.

**The Y (work in progress) grade** is restricted to 0-level courses, unless otherwise approved by an academic department and the Provost/VP of Academic Affairs. The Y is assigned only after consultation with the student, who agrees to the following conditions:

- In the judgment of the instructor, the student has shown sufficient progress but needs more time to complete the course objectives.
- The student will be given the option of accepting the D or F grade.
- At the time the grade is agreed upon, the student must complete the Y grade form provided by the instructor.
- The student must re-enroll in the course no later than the next regular term in which the course is offered.
- The student may not receive a Y grade twice in the same course.
- If a student is already registered for the next term, the student must sign a Drop/Add Form to re-enroll in the course for which a Y grade is given.
- If the student has not completed the course by the end of the next regular term in which the course is offered, the Y grade will be counted as an F grade in computing the student’s cumulative grade point average.

## Course Repeat Limitations

A student may take a course three times for credit. Thereafter, the student must meet with an advisor or a counselor to discuss the educational plan and obtain permission from the department chair to repeat the course. Certain programs and academic disciplines may have time and frequency limitations on course repeats. In all repeats, the highest grade earned for the course will be used to calculate the grade point average; however, all grades will be recorded on the student's transcript. (Complete information is found in SG Handbook: Credit Enrollment, Withdrawal, Attendance, and Refunds).

## Satisfactory Academic Progress

The College has established standards for overall academic achievement, for progress toward a degree, and for advancement from one course to the next in a sequence. Students should be aware of the several meanings of Satisfactory Academic Progress. Failure to progress according to standards will result in probation or suspension. Students placed on probation or suspension will be notified of their status and the conditions for continuing.

Beyond the information given here, there is a special definition of satisfactory progress for students receiving financial aid; this definition is explained in the Financial Aid section of this catalog and in SGP and Handbook: Financial Aid Satisfactory Academic Progress (FASAP) and Appeals.

- A 2.0 Grade Point Average must be maintained.
- Students who have attempted more than 30 credit hours of coursework may not have received a W (withdrawal) grade for more than half of the credit hours they have attempted.
- While credit is given for grades of D or higher in all courses, some courses must be completed with a grade of C or higher in order to advance to the next course in a sequence. The course descriptions in this catalog identify the courses with this requirement.

Certain programs with special accreditation have standards for progress that are more stringent than the general college standards. These include the programs in: Nursing and other programs within Health Careers (for specific programs and their standards, refer online to <http://www.hacc.edu>).

## Honors/Dean's List

Each term the College publishes a Dean's List naming students who have achieved the academic distinction of at least a 3.25 grade point average. Full-time students on the Dean's List have completed 12 or more college level credit hours in a term. Part-time students are eligible for the Dean's List issued in August if they have not been full-time in either the fall or spring terms and have completed a minimum of 12 college level credits during the year (beginning fall and ending second summer term). The Dean's List is distributed for publication to area news media. Students on the Dean's List will receive a Certificate of Commendation.

Students with a cumulative Grade Point Average (GPA) of 3.25 or better will graduate with academic honors. The honor is recorded on the student's transcript, using the following definitions:

- summa cum laude 3.75 or higher GPA (Highest Honors)
- magna cum laude 3.50-3.74 GPA (High Honors)
- cum laude 3.25-3.49 GPA (Honors)

## Academic Probation

At the end of each term, a student whose minimum required cumulative grade point average is below the levels outlined below is placed on probation (unless the student meets suspension criteria):

### Minimum Required Cumulative Grade Point Average

1.20  
1.4  
1.6  
1.8  
2.00

### Cumulative GPA Credit Hours

12-24  
25.36  
37-48  
49-60  
61 or more

Students on academic probation must see their assigned advisor to register for classes and may register for a maximum of 13 credit hours per fall or spring term and 7 credit hours per summer term. Students are removed from academic probation only when the cumulative Grade Point Average reaches 2.00 or above. Students on academic probation are required to enter an advising code when registering online. The advising code is available from the student's advisor/counselor. It is the student's responsibility to consult with his/her advisor/counselor to devise a plan for academic success.

### **Academic Suspension**

A student is placed on academic suspension if he/she is already on academic probation and earns a semester GPA below 2.0. At the end of each term, a student who receives a grade of "W" in 50% or more credits, after attempting 30 credit hours, is placed on Suspension Due to Excessive W's. Students placed on academic suspension are notified by letter and the standing is listed as a part of the students' final grades. Reinstatement Applications are available on HACC's website at <http://www.hacc.edu>. Applications must be submitted at least two weeks before the term begins. The reinstatement Committee reviews applications and makes decisions to approve or deny reinstatement and assigns stipulations, including, but not limited to, credit restrictions and course recommendations. Students who are denied readmission may appeal in writing to the Provost/Vice President of Academic Affairs within five days of receipt of their notification letter. The decision of the Provost/Vice President of Academic Affairs is final.

### **Change of Curriculum**

Students wishing to change their program of study must complete and sign a Change of Major Program Form. The completed form must be submitted to the Welcome Center or the Registrar's Office. Program changes made after the audit date for each term will become effective for the subsequent term. Students will follow the graduation requirements in effect for the term in which the change of program was made.

### **Academic Renewal**

The Academic Renewal process allows students to continue their academic careers without being penalized for past academic performance. The sole purpose is to allow a student to improve his/her grade point average. While courses and grades are never deleted from a student's record, an Academic Renewal allows certain courses to be excluded from the GPA calculation. An Academic Renewal may be requested when a student has not attended HACC for at least five consecutive years (Complete Academic Renewal) or when a student changes majors (Curriculum-Based Academic Renewal).

*Complete Academic Renewal* - Students who have not completed any credit classes at HACC for at least five consecutive years, and who upon their return complete 12 credits at HACC (100 or higher level courses) with a grade of "C" or higher in each course, may request to begin anew the accumulation of their grade point average. When a Complete Academic Renewal is granted all courses with grades of "C" or higher taken prior to the student's return to HACC will remain in the calculation of the GPA. All courses with grades of "D" or "F" taken prior to the student's return will be removed from calculation in the GPA and may not be used to fulfill graduation requirements.

*Curriculum-Based Academic Renewal* - All technical courses taken in the original curriculum are deleted from computation in the GPA. Excluded from the renewal process are courses that satisfy English writing requirements of the new major; courses that meet current core requirements; and courses numbered below 100.

An Academic Renewal may be granted only once. Once an Academic Renewal has been processed, the courses excluded may not be re-entered into the GPA calculation and may not be used to fulfill requirements for any HACC program.

Students attempting to complete a second or subsequent degree may not have courses needed to fulfill graduation requirements in a previously completed curriculum deleted from inclusion in the GPA. Students who wish to find out more about the Academic Renewal process should contact the Records Office at 717- 780-2373, or via email, [record@hacc.edu](mailto:record@hacc.edu).

### **Transcript Requests**

Students may request a transcript of their permanent academic records through the secure student portal *myHACC*, Student tab, HACCWeb, Student Records, submitting a transcript request form to the Welcome Center or utilizing our Electronic (eTranscript) service with the National Student Clearinghouse. All official transcript requests require a fee of \$6. A student may request to have their official transcript mailed or picked up. Students with a financial obligation to the

College must satisfy the obligation prior to requesting a transcript. Students may also view and print their unofficial transcript through [www.hacc.edu](http://www.hacc.edu).

## **Family Educational Rights and Privacy Act (FERPA)**

### ***What is FERPA?***

The Family Educational Rights and Privacy Act of 1974 helps protect the privacy of student education records. The Act provides for the right to inspect and review education records, the right to seek to amend those records and to limit disclosure of information from the records. The intent of the legislation is to protect the rights of students and to ensure the privacy and accuracy of education records. The Act applies to all institutions that are recipients of federal aid administered by the Secretary of Education.

### ***What rights does FERPA afford students with respect to their education records?***

#### ***STUDENTS HAVE THE RIGHT TO INSPECT AND REVIEW THEIR EDUCATIONAL RECORDS.***

A student seeking to review their records should contact the Welcome Center at any campus and ask for a Records Review Request form. HACC must comply with the request to review the records within 45 days of receiving the request. Students may request copies of their records, which will be reproduced at a cost of \$0.10 per page, the cost to be borne by the student. However, the College may refuse to duplicate records in situations where the student has outstanding financial or other obligations to the College.

#### ***STUDENTS HAVE THE RIGHT TO SEEK TO AMEND THEIR EDUCATIONAL RECORDS.***

Students may ask HACC personnel to amend a record if they believe it is inaccurate or misleading. They should write to the Registrar, clearly identifying the part of the record they want changed, and specifying why it is inaccurate or misleading. If the decision is not to amend the record as requested by the student, HACC staff will notify the student of the decision and advise the student of the right to a hearing regarding the request for amendment. If the student requests a hearing, the Registrar or designee shall gather the records which are being challenged and appoint a committee of one faculty member, one administrator, and a member of the Student Affairs staff to hold a hearing with the student to review and discuss the information in question. The following conditions must be met:

- The hearing must take place within 45 days of the written request of the student at a time which is convenient for both the student and the other parties involved.
- Minutes shall be recorded from the hearing.
- Due process shall be the guideline used for the conduct of the meeting.
- If the records cannot be mutually agreed upon, the student has the right to submit information for the file to explain more adequately the information in question.

#### ***STUDENTS HAVE THE RIGHT TO LIMIT DISCLOSURE OF INFORMATION FROM THEIR EDUCATIONAL RECORDS.***

With certain exceptions (described below) HACC may not release or disclose personally identifiable information unless the student has given prior consent in writing. A student may contact the Welcome Center at any campus for Consent to Release Information form.

There are exceptions to non-disclosure. FERPA allows the release of directory information to anyone without the student's consent, although HACC does not promote the widespread release of directory information. Directory information is defined as that information which would not generally be considered harmful or an invasion of privacy if disclosed. Designated directory information at HACC includes:

- Student name, address, telephone listing
- Email address
- Date of birth
- Major field of study at HACC
- Participation in officially recognized activities and sports
- Dates of attendance at HACC
- Degrees and awards received
- Photograph
- Educational institution most recently attended
- Full or part-time enrollment status
- Academic level (i.e. Freshman or Sophomore)

Students have the right to refuse to permit the release or disclosure of directory information by making a request in writing. Contact the Welcome Center at any HACC location or the Records Office for information.

Students should be aware that requesting non-disclosure may have negative consequences. (For instance HACC personnel will not be able to confirm the student's degree to a prospective employer; their names will not be listed in the graduation program.) A request for non-disclosure will remain in effect unless revoked with a written request from the student.

HACC personnel may provide non-directory information to school officials with legitimate educational interest. A school official is defined as:

- a person employed by HACC in an administrative, supervisory, academic or research, or support staff position (including law enforcement unit personnel);
- a person or company with whom HACC has contacted as its agent to provide a service instead of using HACC employees or officials (such as attorney, National Student Clearinghouse, auditor, or collection agent);
- a person serving on the Board of Trustees;
- a student serving on an official committee, such as disciplinary or grievance committee, or assisting another school official in performing his or her tasks.

A school official has a legitimate educational interest if the official needs to review an education record in order to fulfill his or her professional responsibilities for HACC. HACC personnel may disclose education records without consent to officials at another school in which a student seeks or intends to enroll.

There are certain other situations where non-directory information may be released without consent. These situations include: to parents of dependent students, as defined by the Internal Revenue Code; to accrediting organizations; to federal, state, and local authorities involving an audit or evaluation of compliance with educational programs; to organizations conducting studies for or on behalf of educational institutions; to respond to a subpoena or court order; in connection with financial aid; in health or safety emergencies; to release the results of a disciplinary hearing to an alleged victim of a crime of violence.

***STUDENTS HAVE THE RIGHT TO FILE A COMPLAINT CONCERNING ALLEGED FAILURES BY THE COLLEGE TO COMPLY WITH FERPA.***

Complaints alleging FERPA violations may be made with the U.S. Department of Education. The name and address of the Office that administers FERPA is:

Family Policy Compliance Office  
U.S. Department of Education  
400 Maryland Avenue, SW  
Washington D.C. 20202-0001

## **College Computer Use, Security, and Internet Access Policy**

The purpose of this policy is to accommodate reliable access to technology hardware, software, Internet, and network accounts in support of the educational mission while remaining in accordance with state, federal and industry compliance requirements. *Reference Acceptable Use of Technology Code of Conduct* for complete details.

### **Computer Security**

Computer security is critically important to the College. Each person at HACC who gains access to the computer system, including students and student workers, should do so under that individual's unique user ID and password. Use of another person's user ID and password is prohibited by law and by College policy. User IDs and passwords should not be loaned to another person even on a temporary basis. Any compromise of security is a serious matter, and College employees and students are responsible for all actions performed under their user IDs and passwords.

The College may monitor access to and use of the equipment and networking structures and systems for the following purposes:

- To insure the security and operating performance of its systems and networks
- To investigate possible violations of federal or state laws as well as College policies.

## **System Maintenance**

Authorized College staff may monitor equipment, systems and network traffic at any time. Personal privacy of information stored on the College's network systems is not guaranteed. Information stored on the College's network systems may be copied.

## **Family Education Rights and Privacy Act**

Employees at HACC may have access to education records that contain personally identifiable information, the disclosure of which is prohibited by the Family Education Rights and Privacy Act of 1974. Disclosure of this information to any unauthorized person (including a parent or a spouse) is contrary to College policy.

## **Software License and Copyrights**

It is the policy of the College to honor the copyrights of all software packages used by or licensed to the College and to recognize the intellectual property rights of the owner. All software run on computers owned or controlled by the College must be purchased and used in accordance with College policies and procedures. Participating in the unauthorized distribution of copyrighted material using College resources, including unauthorized peer-to-peer file sharing, may subject students to civil and criminal liabilities. HACC has implemented technology-based deterrents in accordance with the statutes in the Higher Education Opportunity Act of 2008 (HEOA). HACC researches, documents and responds to each DMCA (Digital Millennium Copyright Act) notice received. Legal alternatives for legally downloading copyrighted materials can be found at the following web address: [www.educause.edu/legalcontent](http://www.educause.edu/legalcontent).

## **Business Records**

Any and all records generated by the College, including but not limited to personnel records, payroll records, business and other related records are considered to be confidential. Willful or intentional unauthorized disclosure of such information violates College policy.

## **System Tampering**

It is a violation of College policy to intentionally disrupt the performance of the College's computer system or the College network; introduce computer viruses; read, execute, modify or delete any file belonging to someone else without permission; or damage or remove without permission from Office of Information Services and Technologies (OIST) any hardware that supports the College's computer system or College network.

## **Internet**

### *User Online Behavior*

Resources available on the Internet are used to support the College's educational mission. In interacting online, a user's behavior is subject to the College Policies 071, Statement of Individual Rights, and 074, Statement of Practices Constituting Unacceptable Conduct. Users may make incidental personal use of Internet resources, provided that such use does not interfere with the fulfillment of that user's job responsibilities or disrupt the College network environment. Users who make incidental personal use of the college's Internet resources do so at their own risk and the college cannot guarantee the security or continued operation of any Internet resource.

### 1. Illegal Activity

- a. Use of the Internet, including email, to create, display, or transmit language and/or materials which violate local, state or federal laws or regulations is strictly prohibited. Such use includes, but is not limited to, the violation of applicable laws regarding copyright and trademark infringement, fraud, forgery, harassment, discrimination, obscenity, libel, identity theft or slander.
- b. Access to the Internet is a privilege and not a right, and is made available to the entire College community of users. The College reserves the right to terminate any network session at any time.
- c. Unless use is for scholarly or medical purpose or pursuant to a formal College investigation, users may not utilize the college network resources to store, display, or disseminate pornographic or other sexually explicit content. Child pornography is illegal and in the event it is discovered on the college's premise, it will be reported immediately to the local authorities.

### 2. User Responsibility/College Liability

- a. Users, NOT the College or its staff, are responsible for the Internet information selected and/or accessed. The College does not generally monitor Internet use and is not responsible for its content, and consequently has no

control over information accessed, either on workstations on campus, or remotely. The College assumes no responsibility and shall have no liability for any direct, indirect or consequential damages arising from the use of information found on the Internet, and any communications sent through College Internet connections.

## **Email Privacy, Distribution and Usage**

### *Email Privacy*

Users should have no expectation of privacy in anything they store, send or receive on the College's email system. However, with the exception of automated scans which monitor email communications for sensitive content, the College does not monitor the content of electronic mail as a routine procedure. The College reserves the right to inspect, copy, store, or disclose the contents of electronic mail messages, but will do so only when it believes these actions are appropriate to: prevent or correct improper use of the College email facilities; ensure compliance with College policies, procedures, or regulations; satisfy a legal obligation; or ensure the proper operations of College email facilities; ensure compliance with College policies, procedures, or regulations; satisfy a legal obligation; or ensure the proper operations of the College email facilities or data network. (See Administrative Procedure 651, "Disclosure of Information and Students.")

### *Anti-Virus*

All inbound email services must be directed through the College's spam and antivirus scanners at the Internet gateway. Once email is scanned, the antivirus scanners will relay the email to the respective location for delivery.

### *Email Courtesy*

When emailing, be respectful, professional and courteous. Defamatory, abusive, discriminatory, harassing, intimidating, profane and/or offensive language is prohibited and will be subject to disciplinary actions following personnel policies. Emails sent through the employee email distribution service shall not be shared with individuals other than employees unless there is prior written permission from the author of the email.

### *Disclaimer*

The College makes no warranties of any kind, whether expressed or implied, with respect to the College email services it provides. The College will not be responsible for damages resulting from the use of College email, including, but not limited to, loss of data resulting from delays, non-deliveries, missed deliveries, service interruptions caused by the negligence of a College employee, or by User error or omission. The College specifically denies any responsibility for the accuracy or quality of information obtained through College email except material represented as an official document.

## **Wireless Access**

The College grants wireless access to the Internet and network resources as a privilege and must manage them responsibly to maintain the integrity and availability of all wireless information assets. Only wireless access points installed and managed by the Office of Information Services and Technologies (OIST) will be allowed on the College's wireless network.

## **Removable Media**

College faculty and staff are responsible for the secure and responsible use of removable media. The College reserves the right to disable or restrict access for USB ports and writable CD and DVD drives on College-owned and maintained systems.

## **Remote Access**

Access of the College's network resources remotely shall follow the same policies and procedures as an on-site connection to College network resources.



# Academic Programs

# ADMINISTRATIVE OFFICE MANAGEMENT, Associate in Applied Science Degree - 1926

Engineering & Technology Department

The Administrative Office Management AAS degree program prepares students to perform clerical, administrative, management, and information systems support in a variety of office-related environments. Students are able to gain exposure to emerging technologies and other online and mobile business solutions through hands-on application and conducting research. Graduates utilize skills in office transcription, written and oral communication, and integrate various software applications. The complete program is available at the Harrisburg Campus.

## Career Opportunities

Graduates find employment in business offices, private industry, public service, state and federal government, and specialized environments such as legal, medical, financial, insurance, law enforcement, engineering, and management as administrative office specialists.

## Competency Profile

This curriculum is designed to prepare students to:

- Show proficiency in keyboarding and machine transcription
- Apply advanced software skills to produce business documents
- Integrate software applications
- Research using the Internet
- Manage records manually and electronically
- Perform basic accounting functions
- Create effective presentations
- Implement up-to-date office technologies and procedures
- Assess current business-related technologies and resources to enhance professional administrative productivity

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 62)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	AOS 101 Document Processing	3	CIS 105 Introduction to Software for Business	3
ENGL 106 Business Writing	3	AOS 110 Microsoft Word	3	CIS 108 Introduction to Power Point	1
COMM 101 Effective Speaking (or)	3	AOS 111 Grammar & Punctuation Essen.	3	CIS 135 Intermediate Spreadsheet Applica	3
COMM 203 Interpersonal Communication	(3)	AOS 160 Office Accounting (or)	3	CIS 145 Using Mobile Technologies	3
Humanities & Arts Elective*	3	ACCT 101 Principles of Accounting I	(4)	CIS 207 Desktop Publishing	3
Mathematics or Science Elective - MATH 100	3	AOS 203 Records & Imaging Management	3	WEB 102 Web Exploration & Design	3
Social & Behavioral Science Elective	3	AOS 224 Office Applications	3		16
First-Year Seminar Elective - BUSI 101	3	AOS 225 Office Procedures	3		
Wellness	1	AOS 226 Office Transcription	3		
	22		24		

\*Select from the following courses: ART 181 or 182; ENGL 206; HUM 101, 115 or 201; MUS 104; PHIL 200; THTR 101; or a foreign language course.  
Note: A grade of C, or higher, is required for all courses in this program.

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part time students can complete this program by taking one or more courses each semester.

Fall Semester I	Spring Semester I	Fall Semester II	Spring Semester II	
AOS 101	3 AOS 110	3 AOS 203	3 AOS 160 or ACCT 101	3 or 4
AOS 111	3 CIS 135	3 AOS 224	3 AOS 225	3
BUSI 101	3 ENGL 101	3 CIS 108	1 AOS 226	3
CIS 105	3 Humanities/Arts Elective	3 CIS 145	3 COMM 101 or 203	3
MATH 100	3 WEB 102	3 CIS 207	3 Social/Behavioral Science Elective	3
	1 Wellness	1 ENGL 106	3	

# ADMINISTRATIVE OFFICE MANAGEMENT, Certificate - 1371

Engineering & Technology Department  
CIP Code: 52.0401

The Administrative Office Management certificate prepares students with little or no office management skills or who are currently employed and need additional training to perform clerical, administrative, management, and information systems support in a variety of office-related environments. Students are able to gain exposure to emerging technologies and business solutions through hands-on application and conducting research. Graduates may continue their education by pursuing the Administrative Office Management AAS degree. The complete program is available at the Harrisburg Campus.

## Career Opportunities

Graduates find employment in business offices, private industry, public service, state and federal government, and specialized environments such as legal, medical, financial, insurance, law enforcement, engineering, and management as administrative office specialists. (SOC Code: 43-6014 Secretaries)

Link to Occupational profiles on O\*NET: <http://www.onetcodeconnector.org/>

Application and Admission information: <http://www.hacc.edu/NewStudents/Apply/index.cfm>

## Competency Profile

This curriculum is designed to prepare students to:

- Show proficiency in keyboarding and machine transcription
- Apply advanced software skills to produce business documents
- Manage records manually and electronically
- Perform basic accounting functions
- Create effective presentations

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 31)

General Education		Major Requirements		Other Required Courses	
ENGL 110 Foundations in Professional Writing	3	AOS 101 Document Processing	3	CIS 105 Introduction to Software for Business	3
		AOS 110 Microsoft Word	3	CIS 108 Introduction to Power Point	1
		AOS 111 Grammar & Punctuation Essentials	3	CIS 207 Desktop Publishing	3
		AOS 203 Records Management	3	MATH 100 College Math for Business	3
		AOS 225 Office Procedures	3		10
		AOS 226 Machine Transcription	3		
			18		

Note: A grade of C or higher is required for all courses in this program.

## RECOMMENDED COURSE SEQUENCE

Summer		Fall Semester I		Spring Semester I	
CIS 105	3	AOS 101	3	AOS 110	3
		AOS 111	3	AOS 225	3
		AOS 203	3	AOS 226	3
		CIS 207	3	CIS 108	1
		MATH 100	3	ENGL 110	3

Please see the College's website at <http://www.hacc.edu/ProgramsandCourses/Administrative-Office-Management-1371.cfm> for the most current Gainful Employment Information.

# ARCHITECTURE, Associate in Applied Science Degree - 4476

Engineering & Technology Department

The Architecture AAS degree prepares students for both employment in an architecture, engineering, or construction (AEC) professional's office and to transfer to a four-year institution to obtain a Bachelor's degree. This program introduces students to the art and science of architecture and explores aesthetics, architectural design, the creation of presentation drawings, and the development of architectural working drawings utilizing Computer Aided Drafting (CAD) and Building Information Modeling (BIM). Technical issues relating to materials, building codes, structural systems, and environmental systems are covered, as well as an introduction to sustainable architecture.

Students should be aware that the minimum educational requirement to become a Registered Architect in the Commonwealth of Pennsylvania is a Bachelor of Architecture degree. Since the requirements of senior institutions vary widely, it is essential that students choose their intended transfer institution as soon as possible and carefully follow the program requirements outlined in that institution's catalog. In addition to the educational requirement to become a Registered Architect, there is also an experience or internship requirement, which occurs primarily in an architectural office. Many architecture schools are now integrating internships into their curricula. HACC's Architecture AAS program provides transfer students with the skills they need to qualify for internships in architectural firms. The complete program is only available at the Harrisburg Campus.

## Career Opportunities

Graduates secure positions as CAD/BIM operators preparing construction documents for a wide variety of building types. Employment opportunities exist in architecture, design-build, construction and interior design firms, including positions such as drafters, modelers, code researchers, detailers, construction supervisors, facility planners, and interior designers.

## Competency Profile

This curriculum is designed to prepare students to:

- Conceptualize the technical requirements of an architectural project and prepare preliminary construction documents using CAD and BIM software
- Explain environmental and structural systems and their integration into the building process
- Explain construction materials, systems, and methods used in architectural construction
- Assist in building code research and analysis
- Explain the principles of sustainable architecture and integrate these concepts into drawings
- Recognize architecture as both a cultural phenomenon and an artistic and technological achievement involving social, economic, environmental, material, and aesthetic elements
- Identify basic design principles through visual analysis
- Develop a philosophy and process for preparing architectural designs
- Produce design solutions and utilize hand-drawing, constructed models, and digital methods of representation
- Prepare presentation graphics and an architectural portfolio using a variety of software tools
- Articulate ideas using technical and formal vocabulary of architecture and construction
- Transfer into an architecture, landscape architecture, facilities management, interior design, technical leadership or other program at a four-year institution
- Work at a computer in the office of an architecture, engineering, or construction professional

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 60)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	ARCH 101 Architectural Design	3	Program Electives*	9
COMM 101 Effective Speaking (or) COMM 203 Interpersonal Communication	3 (3)	ARCH 102 Architectural Design II	3		
Humanities & Arts Elective - HUM 115, 117 or 118	3	ARCH 112 Architectural Working Drawings I	3		
Mathematics or Science Elective - MATH 103 or 121	3 or 4	ARCH 130 Construction Materials & Methods	3		
Social & Behavioral Science Elective	3	ARCH 135 Codes, Specifications and Safety	3		
First-Year Seminar Elective - ARCH 111	3	ARCH 211 Architectural Graphics II	3		
Wellness	1	ARCH 212 Architectural Working Drawings II	4		
	19	ARCH 233 Renovation/Detailing	4		
		ARCH 253 Sustainable Architecture	3		
		GTEC 110 Construction Print Reading	3		
			<u>32</u>		

\*Students are to select from the following courses: ARCH 201, 202, 214, 251, 291, 295; BCT 211; PHYS 201.

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students can complete this program by taking one or more courses each semester.

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
ARCH 101	3	ARCH 102	3	ARCH 212	4	ARCH 233	4
ARCH 111	3	ARCH 112	3	ARCH 253	3	COMM 101 or 203	3
ENGL 101	3	ARCH 130	3	HUM 115, 117 or 118	3	Program Electives	6
GTEC 110	3	ARCH 135	3	Program Elective	3	Wellness	1
MATH 103 or 121	3 or 4	ARCH 211	3	Social/Behavioral Science Elective	3		

# ARCHITECTURE, Diploma - 0656

Engineering & Technology Department

CIP Code: 15.1303

The Architecture diploma program prepares students for entry-level employment in architectural firms and related settings. This diploma provides a foundation for further study in HACC's Architecture and Building Construction Management programs. These programs prepare students for entry-level employment as well as transfer to four-year schools. This curriculum explores construction documents, materials and methods of construction, building codes, the use of Computer-Aided-Drafting (CAD) and Building Information Modeling (BIM) software, and a variety of other relevant topics. All of the courses in this diploma articulate into both the Architecture and Building Construction Management AAS degrees at HACC. Students should select their electives based upon their chosen career path. Students in both programs have successfully transferred to four-year Architecture and Construction Management programs. The complete program is available at the Harrisburg Campus and through Virtual Learning.

## Career Opportunities

Graduates may secure positions as CAD/BIM operators - assisting with the preparation of construction documents for a wide variety of building types. Employment opportunities exist in architectural, design-build, construction, and interior design firms.

(SOC Code: 17-3011 Architectural and Civil Drafters)

Link to Occupational profiles on O\*NET: <http://www.onetcodeconnector.org/>

Application and admission information: <http://www.hacc.edu/NewStudents/Apply/index.cfm>

## Competency Profile

This curriculum is designed to prepare students to:

- Interpret construction drawings
- Describe construction materials and systems, as well as methods used in architectural construction
- Explain the application of building codes in the design and construction process
- Use a computer in an architectural office or related setting

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 18)

### General Education

### Major Requirements

### Other Required Courses

ARCH 111 Architectural Graphics I	3
ARCH 130 Construction Materials and Methods	3
ARCH 135 Codes, Specifications and Safety	3
GTEC 110 Construction Print Reading	3
	12

Program Electives\* 6

\*Students should select two courses from the following: HUM 115, 117 or 118.

Please see the College's website at <http://www.hacc.edu/ProgramsandCourses/Architecture-0656.cfm> for the most current Gainful Employment Information.

**ART, Associate in Arts Degree - 2130**

*Communication, Humanities and the Arts Department*

The Art associate degree serves as a foundation for students who plan to transfer to four-year institutions for further work in fine arts, graphic and interactive design, or in the specialty areas of ceramics, drawing, jewelry, painting, printmaking, sculpture, and art history. Upon successful completion of the program, students will have acquired the appropriate number and type of art pieces needed to create a portfolio, if required, for admission to most four-year institutions. HACC’s Art programs are accredited by the National Association of Schools of Art and Design (NASAD), which is a specialized accrediting agency for schools of art and design that is recognized by the United States Department of Education. NASAD’s major responsibility is the accreditation of education programs in art and design including the establishment of curricular standards and guidelines for specific degrees and credentials. Institutional membership is gained only through the peer review process of accreditation. Since the requirements of senior institutions vary widely, it is essential to choose an intended transfer institution as soon as possible and carefully follow the program described in that college’s catalog. The complete program is available at the Harrisburg and York campuses. This program can also be completed at the Lebanon Campus by taking some courses through Virtual Learning.

*Transfer Opportunities*

This transfer curriculum is provided as a guide for students planning to transfer to a baccalaureate degree granting institution.

*Competency Profile*

This curriculum is designed to prepare students to:

- Create two- and three-dimensional work effectively using the elements and principles of art and design
- Use color theory effectively
- Draw from observation including life studies
- Demonstrate skills in a variety of techniques and materials
- Demonstrate knowledge of how cultural, political, social, and gender issues have affected the creation of art within a historical context
- Use art and design terminology effectively during critiques and discussions of visual images and objects.
- Develop creative processes and research methods
- Use current technology as applied to the arts

**PROGRAM REQUIREMENTS (TOTAL CREDITS = 60)**

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	ART 105 Fundamentals of Two – Dimensional Design	3	*Transfer Electives	6
ENGL 102 English Composition II	3	ART 107 Fundamentals of Three – Dimensional Design	3		
COMM 101 Effective Speaking	3	ART 108 Fundamentals of Computer Art (or)	3		
Humanities & Arts Elective - ART 121	3	ART 176 Digital Photo Imaging (or)	(3)		
Humanities & Arts Elective or Social & Behavioral Science Elective	3	ART 115 Beginning Digital Photography	(3)		
Mathematics Elective	3	ART 122 Drawing II	3		
Science w/ a Laboratory Elective	3	ART 131 Painting I	3		
Social & Behavioral Science Elective	3	ART 151 Ceramics I (or)	3		
First-Year Seminar Elective	1	ART 171 Jewelry and Metal Design	(3)		
Wellness	1	ART 181 Art Through the Ages I	3		
	26	ART 182 Art through the Ages II	3		
		ART 207 Portfolio	1		
		Art Transfer Elective*	3		
			28		

\*Students are to select their Art transfer elective from ART 100-199 courses.

\*\*Students are to select transfer electives from any course from 100-299, based upon their intended transfer school requirements.

**RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS**

Part-time students can complete this program by taking one or more courses each semester.

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
ART 105	3	ART 107	3	ART 131	3	ART 207	1
ART 121	3	ART 122	3	ART 181	3	ART 182	3
ART 151 or 171	3	ART 176 or 108 or 115	3	COMM 101	3	Transfer Electives	6
ENGL 101	3	ENGL 102	3	Art Transfer Elective	3	Humanities/Arts or Social/Behavioral	3
FYS Elective	1	Mathematics Elective	3	Science w/ a Lab Elective	3	Science Elective	
Social/Behavioral Science Elective	3	Wellness	1				

**GRAPHIC AND INTERACTIVE DESIGN, Associate in Applied Science Degree - 2841**

*Communication, Humanities and the Arts Department*

Students in the Graphic and Interactive Design AAS program are taught how to develop concepts, create visuals, and typography and be proficient in a wide range of industry-standard equipment and graphic/web software. Students have the opportunity to take an internship course designed to provide them with real-world experience. In addition, courses in oral and written communication, as well as in the social and natural/physical science areas, help to supplement their studies by providing students with critical and creative thinking skills along with an appreciation for the arts. HACC’s Art programs are accredited by the National Association of Schools of Art and Design (NASAD), which is a specialized accrediting agency for schools of art and design that is recognized by the United States Department of Education. NASAD’s major responsibility is the accreditation of education programs in art and design including the establishment of curricular standards and guidelines for specific degrees and credentials. Institutional membership is gained only through the peer review process of accreditation. HACC is committed to high academic standards that reflect current trends in the field in order to prepare students for a career in graphic and interactive design. These standards are intended to assure high-quality experiences in small classes with access to new technologies and superior media and library support. While most of HACC’s Graphic and Interactive Design major courses are offered during the day, some courses are only available at night. The program can be completed at the Harrisburg Campus.

**GRAPHIC AND INTERACTIVE DESIGN, Foundations Program - 2831**

Students interested in entering the Graphic and Interactive Design AAS Degree Program must first enroll into Foundations Program #2831. While in #2831, students complete art foundation courses, specific math, writing, and reading requirements, and then submit a portfolio as entry requirements for the AAS degree program. Please go to <http://www.hacc.edu/ProgramsandCourses/Courses-and-Programs-Details.cfm?prn=2840> and select the link entitled “Portfolio Example Pieces” for more information on portfolio requirements. Students must meet with their Academic Advisor to ensure that they meet entrance requirements.

**GRAPHIC AND INTERACTIVE DESIGN, Associate in Applied Science Degree**

*Selective Program:* Any student who has passed the portfolio review and meets entry criteria is eligible to enroll into the AAS degree program. Entry into this program is not guaranteed with admission to the College or with admission into the Foundations program #2831. Please go to <http://www.hacc.edu/ProgramsandCourses/Courses-and-Programs-Details.cfm?prn=2840> and select the link entitled “Portfolio Example Pieces” for more information on portfolio requirements. Students should meet with their Academic Advisor to ensure that they meet entrance requirements.

*Career Opportunities*

Job opportunities can be found in advertising agencies, design firms, magazines, television stations, web and multimedia production companies, retail stores, printers, government agencies, and corporate in-house art departments.

*Competency Profile*

This curriculum is designed to prepare students to:

- Demonstrate mastery of skills involved in the graphic and interactive design field
- Create an effective visual communication
- Operate computers and graphic software used in design, web and interactive media
- Present a professional portfolio
- Write and speak effectively

**PROGRAM REQUIREMENTS (TOTAL CREDITS = 62)**

<b>General Education</b>		<b>Major Requirements</b>		<b>Other Required Courses</b>
ENGL 101 English Composition I (or)	3	**ART 105 Fundamentals of Two-Dimensional Design	3	
ENGL 110 Foundations in Professional Writing	(3)	**ART 109 Computer Graphics	3	
COMM 101 Effective Speaking (or)	3	**ART 114 Interactive Media & Design	3	
COMM 203 Interpersonal Communication	(3)	**ART 125 Visual Thinking	3	
Humanities & Arts Elective - ART 121**	3	**ART 140 Web Design	3	
Mathematics or Science Elective	3	**ART 143 Typography	3	
Social & Behavioral Science Elective*	3	**ART 144 Graphic Design I	3	
First-Year Seminar Elective	1	**ART 145 Graphic Design II	3	
Wellness	1	**ART 146 Graphic Design III	3	
	17	**ART 147 Portfolio Development	3	
		**ART 148 Internship	3	
		**ART 149 Design Practice	3	
		**ART 176 Digital Photo Imaging	3	
		ART 183 Twentieth Century Art	3	
		ART 190 History of Graphic Design	3	
			45	

\*Students are to select from one of the following courses: ANTH 101, 205; COMM 253; GEOG 201, 230; GP 205; HIST 101, 102; PSYC 216, 229; SOCI 202, 203.

\*\*A grade of C or higher is required for graduation in these courses, except for ART 190.

**RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS**

*After the Graphic Design Foundations level, all graphic design courses must be taken as a block in the sequence shown.*

<b>Fall Semester I</b>		<b>Spring Semester I</b>	
<b>(Graphic &amp; Interactive Design Foundations #2831)</b>		<b>(Graphic &amp; Interactive Design #2841)</b>	
ART 105	3	ART 109	3
ART 121	3	ART 143	3
ART 125	3	ART 144	3
ART 176	3	ART 190	3
ENGL 101 or 110	3	COMM 101 or 203	3
FYS Elective	1	Wellness	1
<b>Fall Semester II</b>		<b>Spring Semester II</b>	
<b>(Graphic &amp; Interactive Design #2841)</b>		<b>(Graphic &amp; Interactive Design #2841)</b>	
ART 140	3	ART 114	3
ART 145	3	ART 146	3
ART 149	3	ART 147	3
Social/Behavioral Science Elective	3	ART 148	3
		Math/Science Elective	3

**PHOTOGRAPHY, Associate in Fine Arts Degree - 2850**

*Communication, Humanities and the Arts Department*

The Photography Associate in Fine Arts degree prepares students for entry-level employment in both artistic and commercial photography. This hands-on curriculum teaches students the fundamental skills and techniques involved in traditional photography with an added emphasis on the digital arena. Students have the opportunity to create and prepare their photographic works in state-of-the-art digital and traditional photographic labs and a studio, as well as attend lectures and critiques. Upon successful completion of the program, students will have acquired the appropriate photography and art portfolio necessary for admission by four-year institutions. While this program prepares students for entry-level employment, it may also serve to transfer to many four-year institutions and professional photography schools. HACC’s Art programs are accredited by the National Association of Schools of Art and Design (NASAD), which is a specialized accrediting agency for schools of art and design that is recognized by the United States Department of Education. NASAD’s major responsibility is the accreditation of education programs in art and design including the establishment of curricular standards and guidelines for specific degrees and credentials. Institutional membership is gained only through the peer review process of accreditation. This program is offered part-time in the evenings and weekends and both part-time and full-time during the day. The complete program is only available at the Harrisburg Campus.

*Career or Transfer Opportunities*

Training is provided in both artistic and commercial photographic applications for entry-level job opportunities, as well as for transferring to a four-year institution, or professional art schools. In addition, this program may be taken for personal growth or for advancement by those already employed in some phase of photography or graphic arts. Students should recognize that this field often requires an apprenticeship after graduation (photographic “assisting”) before higher level jobs may be secured.

*Competency Profile*

This curriculum is designed to prepare students to:

- Utilize the basic craft and aesthetic principles of photography
- Apply acquired skills to both art and commercial photography
- Acquire knowledge of the history and aesthetics of photography and art

**PROGRAM REQUIREMENTS (TOTAL CREDITS = 62)**

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	ART 105 Fundamentals of Two-Dimensional Design	3	Transfer Elective**	3
ENGL 102 English Composition II (or)	3	ART 115 Beginning Digital Photography	3		
ENGL 104 Technical Writing (or)	(3)	ART 117 Photoshop for Photographers	3		
ENGL 106 Business Writing	(3)	ART 182 Art Through the Ages II	3		
COMM 101 Effective Speaking	3	ART 183 Modern Art	3		
Humanities & Arts Elective - ART 121	3	ART 186 History and Aesthetics of Photography	3		
Mathematics or Science Elective	3	ART 201 Color Photography	3		
Social & Behavioral Science Elective	3	ART 205 Color Digital Photography	3		
First-Year Seminar Elective	1	ART 206 Studio Photography	3		
Wellness	1	ART 208 Advanced Digital Photography	3		
	20	ART 209 Photography Seminar	3		
		ART 100-299 Art Electives*	6		
			39		

\*Recommend: ART 116 and 202.

\*\*Students are to select courses that meet the requirements of their intended transfer institution or their individual career focus.

**RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS**

Part time students can complete this program by taking one or more courses each semester.

Fall Semester		Spring Semester		Fall Semester		Spring Semester	
ART 115	3	ART 105	3	ART 201	3	ART 205	3
ART 117	3	ART Elective	3	ART 209	3	ART 206	3
ART 121	3	ART 183	3	Art Elective	3	ART 208	3
ART 182	3	ART 186	3	Math/Science Elective	3	COMM 101	3
ENGL 101	3	ENGL 102 or 104 or 106	3	Transfer Elective	3	Social/Behavioral Science Elective	3
FYS Elective	1			Wellness	1		

**PHOTOGRAPHY, Certificate – 2400**

*Communication, Humanities and the Arts Department*

CIP Code: 50.0605

The Photography certificate prepares students for entry-level employment in photography as they are taught the fundamental skills and techniques involved in traditional photography with added emphasis on the digital arena. This hands-on program is offered part-time in the evenings and weekends and both part-time and full-time during the day. The complete program is only available at the Harrisburg Campus.

*Career Opportunities*

Training is provided in both the aesthetic and technical principles of photography for entry-level job opportunities of artistic and commercial photographic application. In addition, this program may be taken for personal growth or for advancement by those already employed in some phase of photography or graphic arts. Students should understand that this field often requires an apprenticeship (photographic “assisting”) of several years after graduation before higher level jobs are secured.

(SOC Code: 27-4021 Photographers)

Link to Occupational profiles on O\*NET: <http://www.onetcodeconnector.org/>

Application and admission information: <http://www.hacc.edu/NewStudents/Apply/index.cfm>

*Competency Profile*

This curriculum is designed to prepare students to:

- Utilize the basic craft and aesthetic principles of photography
- Apply acquired skills to both art and commercial photography

**PROGRAM REQUIREMENTS (TOTAL CREDITS = 30)**

**General Education**

**Major Requirements**

**Other Required Courses**

ART 115 Beginning Digital Photography	3
ART 116 Silver Gelatin Photography	3
ART 117 Photoshop for Photographers	3
ART 186 History & Aesthetics of Photography	3
ART 201 Color Photography	3
ART 202 Materials & Processes of Photography	3
ART 205 Color Digital Photography	3
ART 206 Studio Photography	3
ART 208 Advanced Digital Photography	3
ART 209 Photography Seminar	3
	<u>30</u>

**RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS**

Part time students can complete this program by taking one or more courses each semester.

Summer	Fall Semester I	Spring Semester I
ART 115 3	ART 117 3	ART 116 3
	ART 201 3	ART 186 3
	ART 202 3	ART 205 3
	ART 209 3	ART 206 3
		ART 208 3

Please see the College’s website at <http://www.hacc.edu/ProgramsandCourses/Photography-2400.cfm> for the most current Gainful Employment Information.

## **AUCTIONEERING, Diploma - 0100**

*Business Studies Department*

CIP Code: 52.1901

Students prepare to become self-employed as Auctioneers. This program is approved by the Pennsylvania State Board of Auctioneer Examiners as meeting the educational course requirements necessary to sit for the Auctioneer License Examination. Students complete the entire diploma program (20 credits) at the Harrisburg Campus *only* during the Fall semester.

### *Career Opportunities*

Upon completion of the specialty auctioneering courses and passing the Pennsylvania State Auctioneer License Examination the graduate becomes a Licensed Auctioneer. (SOC Code: 41-9099 Sales and Related Workers, All Others)

Link to Occupational profiles on O\*NET <http://www.onetcodeconnector.org/>

Application and Admission information: <http://www.hacc.edu/NewStudents/Apply/index.cfm>

### *Competency Profile*

This curriculum is designed to prepare students to:

- Develop an auction “chant”
- Use appraisal sources and techniques
- Procure merchandise for auction
- Define and discuss legal issues related to auctioneering
- Organize and prepare an auction
- Conduct an auction
- Prepare business correspondence and government forms

### **PROGRAM REQUIREMENTS (TOTAL CREDITS = 20)**

#### **General Education**

#### **Major Requirements**

AUCT 101 Audience Communications	3
AUCT 102 Procurement & Appraisal of Merchandise I	3
AUCT 103 Procurement & Appraisal of Merchandise II	3
AUCT 104 Auctioneering Law	3
AUCT 105 Preparation for the Auction	4
AUCT 106 The Auction	4
	<u>20</u>

#### **Other Required Courses**

Please see the College’s website at <http://www.hacc.edu/ProgramsandCourses/Auctioneering-0100.cfm> for the most current Gainful Employment Information.

# AUTOMOTIVE TECHNOLOGY - GENERAL MOTORS ASEP, Associate in Applied Science Degree - 4570

Engineering & Technology Department

The General Motors' Automotive Service Educational Program (ASEP) prepares students as state-of-the-art technicians for GM dealerships. A new generation of high technology automobiles demands a new generation of automotive service technicians. Students are trained on current General Motors products and components. The latest diagnostic and servicing procedures and equipment are also used. Students are able to complete the PA State Safety Inspector and Emission Inspector certifications. In addition, courses in oral and written communication, as well as in the social and natural/physical science areas, help to supplement their studies by providing students with critical and creative thinking skill that may enhance their career opportunities. This program is accredited by the National Automotive Technicians Education Foundation (NATEF) in eight categories of automotive repair. The complete program is only available at the Harrisburg Campus.

*Selective Program:* Entry into this program is not guaranteed with admission to the College. Specific admissions criteria must be met, such as a passing grade on the mechanical aptitude test, and the possession of a valid PA Driver's license. Please contact the Faculty Program Supervisor to schedule an appointment to review all of the entrance requirements.

### Career Opportunities

GM-ASEP training, along with practical work experience and guidance, enables graduates to become factory-certified GM technicians. Other career opportunities such as service advisor, warranty administrator, shop foreperson, or service manager can also be pursued.

### Competency Profile

This curriculum is designed to prepare students to:

- Work as a factory-certified GM technician in a General Motors dealership or an A/C Delco repair facility
- Perform all services and repairs on General Motors vehicles
- Complete the ASE examinations
- Complete the Pennsylvania State Emissions Inspector and Safety Inspection License examinations

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 65)

General Education		Major Requirements		Other Required Courses	
ENGL 110 Foundations of Professional Writing	3	AGM 101 GM Automotive Fundamentals	3	WELD 111 Welding Applications	3
COMM 101 Effective Speaking	3	AGM 103 GM Automotive Powerplants	3		
Humanities & Arts Elective - HUM 101	3	AGM 105 GM Automatic Electrical Fundamentals/Electronics I	3		
Math or Science Elective - PHSC 113	3	AGM 107 GM Automotive Fuel and Emission Control Systems	3		
Social & Behavioral Science Elective - SOCI 201	3	AGM 151 GM Automotive Braking Systems	3		
First-Year Seminar Elective	1	AGM 153 GM Automotive Steering and Suspension Systems	3		
Wellness	<u>1</u>	AGM 157 GM Automotive Ignition Control Systems	3		
	17	AGM 159 GM Automotive Heating/Air-Conditioning Systems	3		
		AGM 191 GM Cooperative Work Experience I	1		
		AGM 192 GM Cooperative Work Experience II	1		
		AGM 203 GM Manual Transmissions/Drivelines	3		
		AGM 205 GM Automotive Electrical Fundamentals /Electronics II	3		
		AGM 207 GM Powertrain Management Systems	3		
		AGM 251 GM Dealership Operations	2		
		AGM 253 GM Automatic Transmissions/Transaxels	3		
		AGM 255 GM Advanced Automotive Electronics	3		
		AGM 291A GM Cooperative Work Experience III	1		
		AGM 292A GM Cooperative Work Experience IV	<u>1</u>		
			45		

\*After completing AGM 101, 103, 105, and 107.

\*\*After completing AGM 151, 153, 157, and 159.

### RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students can complete this program by taking one or more courses each semester.

Fall Semester I	Spring Semester I	Summer	Fall Semester II	Spring Semester II
AGM 101	3 AGM 103	3 AGM 157	3 AGM 203	3 AGM/AUTO 251
AGM 105	3 AGM 107	3 SOCI 201	3 AGM 207	3 AGM 253
AGM 151	3 AGM 159	3 WELD 111	3 AGM 255	3 AGM 292A
AGM 153	3 AGM 205	3 Wellness	1 AGM 291A	1 ENGL 110
AGM 191	1 AGM 192	1	COMM 101	3 HUM 101
FYS Elective	1 PHSC 113	3		3

# AUTOMOTIVE TECHNOLOGY, Associate in Applied Science Degree - 4480

Engineering & Technology Department

The Automotive Technology AAS program serves the needs of high school and career and technology school graduates as well as persons already employed in the industry. Students must complete a 480-hour co-operative work experience at an approved automotive repair facility to complete this program and are able to complete the PA State Safety Inspector and Emission Inspector certifications. In addition, courses in oral and written communication, as well as in the social and natural/physical science areas, help to supplement their studies by providing students with critical and creative thinking skill that may enhance their career opportunities. Graduates of career and technology school auto-mechanics programs or applicants with substantial work experience may receive up to nine credits towards completion of this program after submitting appropriate documentation. This program is accredited by the National Automotive Technicians Education Foundation (NATEF) in eight categories of automotive repair. The complete program is available at the Harrisburg Campus.

*Selective Program:* Entry into this program is not guaranteed with admission to the College. Specific admissions criteria must be met, such as a passing grade on the mechanical aptitude test, and the possession of a valid PA Driver's license. Please contact the Faculty Program Supervisor to schedule an appointment to review all of the entrance requirements.

## Career Opportunities

Graduates of the program are prepared for employment as service technicians. In addition, graduates obtain the skills needed to move into service advising and management positions. Other possible career paths may include parts management, fixed operations management, and technical trainer.

## Competency Profile

This curriculum is designed to prepare students to:

- Complete the Pennsylvania State Emissions Inspector and Safety Inspection License examinations
- Work as service technicians in automotive repair facilities or dealerships
- Work in management positions within the automotive service industry or operate their own repair facility

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 63)

General Education		Major Requirements		Other Required Courses	
ENGL 110 Foundations in Professional Writing	3	AUTO 101 Automotive Fundamentals	3	WELD 111 Welding Applications	3
COMM 101 Effective Speaking	3	AUTO 103 Automotive Powerplants	3		
Humanities & Arts Elective*	3	AUTO 105 Fundamental of Electrical Electronics I	3		
Mathematics or Science Elective (Rec: PHSC 113)	3	AUTO 107 Fuel and Emission Control Systems	3		
Social and Behavioral Science Elective (Rec: SOCI201)	3	AUTO 151 Braking Systems	3		
First-Year Seminar Elective	1	AUTO 153 Suspension Systems	3		
Wellness	1	AUTO 157 Engine Performance Testing	3		
	17	AUTO 159 Automotive Heating/Air-Conditioning Systems	3		
		AUTO 191 Cooperative Work Experience**	2		
		AUTO 203 Manual Transmissions/Drivelines	3		
		AUTO 205 Intermediate Automotive Electrical/Electronics	3		
		AUTO 207 Powertrain Management Systems	3		
		AUTO 251 Service Department Management	2		
		AUTO 253 Automatic Transmissions/Transaxels	3		
		AUTO 255 Advanced Electrical/ Electronics	3		
			43		

\*Students select from the following courses: ART 181, 182; ENGL 206; HUM 101, 115, 201; MUS 104; PHIL 200; THTR 101; or a foreign language course.

\*\*AUTO 191 can be taken any semester after the completion of AUTO 101, 103, 105, 107, 151 and 153.

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students can complete this program by taking one or more courses each semester.

Fall Semester I	Spring Semester I	Summer	Fall Semester II	Spring Semester II
AUTO 101 3	AUTO 103 3	* AUTO 191 2	AUTO 157 3	AGM/AUTO 251 2
AUTO 105 3	AUTO 107 3		AUTO 203 3	AUTO 253 3
AUTO 151 3	AUTO 159 3		AUTO 207 3	COMM 101 3
AUTO 153 3	AUTO 205 3		AUTO 255 3	Social/Behavioral Science Elective 3
ENGL 110 3	Math/Science Elective 3		Humanities/Arts Elective 3	WELD 111 3
FYS Elective 1			Wellness 1	

\* The Cooperative experience (AUTO 191) can be taken any semester after the completion of AUTO 101,103,105,107,151, and 153.



## BAKING AND PASTRY ARTS, Certificate - 1321

Business Studies Department

CIP Code: 12.0501

The Baking and Pastry Arts certificate prepares students to become professional baking and pastry chefs. Students prepare and produce cakes, pies, and other baked goods, working with doughs, icings, and other ingredients used in pastry making. In addition to specific training for baking and pastry making, students study the fundamentals of sanitation, hospitality math, small business management, nutrition, food purchasing and receiving, supervision, and the hospitality industry. The complete program is only available at the Harrisburg Campus.

### Career Opportunities

Graduates of the program find employment as retail and wholesale bakers, pastry chefs, or assistants. (SOC Code: 51-3011 Bakers)

Link to Occupational profiles on O\*NET: <http://www.onetcodeconnector.org/>

Application and admission information: <http://www.hacc.edu/NewStudents/Apply/index.cfm>

### Competency Profile

This curriculum is designed to prepare students to:

- Use mathematical techniques to make accurate adjustments in bakeshop formulas and percentages
- Apply industry sanitation and safety procedures
- Determine and apply the characteristics, properties, and functions of the major baking and pastry ingredients
- Follow the correct procedures and successfully prepare quick breads, cookies, brownies, pies and tarts, and yeast doughs including lean, enriched, and laminated
- Follow the correct procedures and successfully prepare custards and curds, meringues, cakes and frostings, mousses and bavarians, chocolate confections, sugar candies, frozen desserts, and decorating procedures with icings, fondant, gum paste, and marzipan
- Exhibit management skills in professionalism, employee relations, food purchasing, inventory, and cost analysis
- Analyze nutritional values in recipes and adjust ingredients based on specific dietary concerns

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 34)

#### General Education

#### Major Requirements

#### Other Required Courses

*BAKE 101 Baking I	4
*BAKE 111 Pastry Arts I	4
*BAKE 201 Advanced Baking & Pastry Arts	4
BAKE 291 Baking/Pastry Arts Internship	3
CULI 102 Culinary Math	2
CULI 113 Sanitation & Safety	2
HTMT 101 Introduction to the Hospitality Industry	3
HTMT 104 Nutrition for Food Service	3
HTMT 122 Food Purchasing, Receiving, & Storing	3
HTMT 251 Hospitality Supervision	3
	<u>31</u>

\*\*Program Elective 3

\*Indicates that these courses require students to obtain a grade of C or higher.

\*\*Select one course from the following: ENTR 101, HTMT 213, MKTG 205 or MGMT 221.

Please see the College's website at <http://www.hacc.edu/ProgramsandCourses/Baking-and-Pastry-Arts-1321.cfm> for the most current Gainful Employment Information.

## BIOLOGY, Associate in Science Degree - 3096

### Science Department

The Biology AS degree prepares students who wish to transfer to a four-year institution that offers a bachelor's degree program in biology, pre-professional health careers, ecology, genetics, microbiology, or botany. Since the requirements of senior institutions vary widely, it is essential that students choose an intended transfer institution as soon as possible and carefully follow the program described in that college's catalog. The complete program is available at the Harrisburg, Lancaster, and York campuses.

### Transfer Opportunities

This transfer curriculum is provided as a guide for students planning to transfer to a baccalaureate degree granting institution.

### Competency Profile

This curriculum is designed to prepare graduates of the program to:

- Demonstrate technical communication skills including written, spoken, and graphical presentation of scientific data
- Collect, manipulate, analyze, and interpret data
- Explain basic principles and concepts of science including the nature of science and scientific ethics as applied to the discipline
- Demonstrate competency in entry-level technology that supports the scientific process
- Apply the scientific method to solve scientific problems
- Utilize discipline-specific scientific scholarly resources such as library and web-based resources
- Conduct biological laboratory exercises using appropriate techniques and instrumentation

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 62)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	BIOL 102 General Biology II	4	Transfer Electives****	6
ENGL 102 English Composition II	3	CHEM 101 General Inorganic Chemistry***	4		
COMM 101 Effective Speaking	3	CHEM 102 Organic Chemistry & Qualitative Analysis	4		
Humanities & Arts Elective*	3	CHEM 203 Organic Chemistry I	4		
Social & Behavioral Science Elective	3	CHEM 204 Organic Chemistry II	4		
Mathematics Elective - MATH 104**	3	Biology Electives	8		
Math or Science Elective - MATH 119**	4	(Select BIOL 206 or 250; 212; 215; 221)	28		
Science with a Lab Elective - BIOL 101	4				
Wellness	1				
First-Year-Seminar Elective (Rec: SCI 100)	1				
	28				

\*Students are to select from the following courses: ART 181 or 182; ENGL 206; HUM 101, 115 or 201; MUS 104; PHIL 200; THTR 101; or a foreign language course.

\*\* May be replace with a higher-level Math offering.

\*\*\* Prerequisite is MATH 103.

\*\*Students are to select courses that transfer to their intended four-year institution.

### RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students can complete this program by taking one or more courses each semester.

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
BIOL 101	4	BIOL 102	4	Biology Elective	4	Biology Elective	4
CHEM 101	4	CHEM 102	4	CHEM 203	4	CHEM 204	4
COMM 101	3	ENGL 102	3	MATH 119	4	Humanities/Arts Elective	3
ENGL 101	3	MATH 104	3	Transfer Elective	3	Social/Behavioral Science Elective	3
FYS Elective	1	Wellness	1			Transfer Elective	3



# BUILDING CONSTRUCTION MANAGEMENT, Certificate - 4250

Engineering & Technology Department

CIP Code: 15.1001

The Building Construction Management certificate prepares students for entry-level positions in the construction/contracting field as quantity take-off technicians and estimators, schedulers, and construction inspectors. All graduates acquire a general knowledge of the overall construction process. The complete program is available at the Harrisburg Campus and through Virtual Learning.

## Career Opportunities

Graduates of the certificate are prepared for positions in the construction/contracting field as project managers, construction schedulers, construction inspectors, construction estimators, and quantity take-off technicians.

(SOC Code: 47-1011 Supervisors-Construction Trades and Extraction Workers)

Link to Occupational profiles on O\*NET: <http://www.onetcodeconnector.org/>

Application and admission information: <http://www.hacc.edu/NewStudents/Apply/index.cfm>

## Competency Profile

This curriculum is designed to prepare students to:

- Demonstrate the ability to estimate quantities and costs for the bidding process in a construction project
- Demonstrate the ability to schedule a basic construction project
- Demonstrate the ability to use current technology related to the construction process
- Interpret construction documents (contracts, specifications, and drawings) used in managing a construction project
- Apply basic principles of construction accounting
- Discuss basic principles of ethics in the construction industry
- Identify the fundamentals of contracts, codes, and regulations that govern a construction project
- Recognize basic construction methods, materials, and equipment
- Recognize basic safety hazards on a construction site and standard prevention measures

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 30)

### General Education

### Major Requirements

ARCH 111 Architectural Graphics I	3
ARCH 130 Construction Materials and Methods	3
ARCH 135 Codes, Specifications & Safety	3
BCT 212 Construction Contracts and Related Laws	3
BCT 215 Construction Estimating	3
BCT 216 Construction Planning and Scheduling	3
BCT 217 Construction Project Administration	3
GTEC 110 Construction Print Reading	3
	24

### Other Required Courses

MGMT 227 Project Management	3
Program Specific Elective*	3
	6

\*Select courses from the following: ARCH 214, 251, 253; or BCT 211.

Please see the College's website at <http://www.hacc.edu/ProgramsandCourses/Building-Construction-Management-4250.cfm> for the most current Gainful Employment Information.

## BUSINESS, Associate in Applied Science Degree - 1516

### Business Studies Department

The Business AAS degree is designed to prepare students for both entry-level positions and upward career mobility in a variety of business settings. The program offers students the opportunity to customize their major to their future professional goals by specializing in one of four major areas of concentration: **Accounting, Management, Marketing, or General Business**. Learning from across a variety of disciplines within the business field, graduates will be uniquely prepared for success in the 21<sup>st</sup> century workplace. This program is accredited by The Accreditation Council for Business School and Programs (ACBSP). Since 1992, ACBSP is the only nationally recognized organization that grants regional accreditation to two- and four-year colleges and universities. The complete program is available through the Harrisburg and Lancaster Campuses as well as Virtual Learning. Students may complete the full program at the Gettysburg Campus by taking some courses through Virtual Learning. The General Business concentration is available to students at the Lebanon Campus by taking some courses through Virtual Learning.

### Career Opportunities

Graduates prepare for entry-level positions and upward career mobility in organizations with career paths in the graduate's area of study. Graduates of the **Accounting Concentration** may find employment in accounting firms, banks, private industry, and government service. The **Management Concentration** prepares students for career paths that eventually lead to positions such as assistant manager, general manager, office manager, purchasing agent, sales manager, operations manager, or service manager. Graduates of the **Marketing Concentration** gain the skills and knowledge needed for entry-level positions in sales, advertising, retailing, wholesaling, physical distribution, market research, marketing management, insurance, real estate, and related fields. Finally, graduates of the **General Business Concentration** gain broad business skills that prepare them for entry-level positions in retailing, manufacturing, healthcare, hospitality management, real estate, agribusiness, and entrepreneurial opportunities.

### Competency Profile

This curriculum is designed to prepare students to:

- Prepare and deliver oral and written presentations on business concepts in various disciplines, consistent with professional standards
- Utilize quantitative and qualitative methods of collecting, processing, and analyzing information and data to make informed business and career decisions
- Identify legal and ethical forces that impact organizational decision-making
- Make organizational decisions by applying and integrating knowledge of each functional area including; legal, economic, accounting, marketing and management.
- Successfully interact in group-settings
- Identify cultural differences in business practices and describe how the differences affect business decisions
- Use appropriate business software and technologies
- Use various resources, including library resources and databases, to access and extract information appropriate for business

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 62)

General Education	Major Requirements	Other Required Courses
ENGL 101 English Composition I	ACCT 101 Principles of Accounting I	CIS 105 Intro to Software for Business
ENGL 106 Business Writing	BUSI 201 Business Law I (or)	
COMM 101 Effective Speaking	BUSI 209 Legal Environment of Business	
Humanities & Arts Elective	ECON 201 Principles of Economics I: Macro	
Social & Behavioral Science Elective	MGMT 201 Principles of Management	
Math or Science Elective*	MKTG 201 Principles of Marketing	
Wellness		
First-Year-Seminar Elective (BUSI 101)		

\*Select from the following courses: MATH 100, 103, 110, 119 or 202.

Accounting Concentration	General Business Concentration	Management Concentration
ACCT 200 Principles of Accounting II	BUSI 290 Business Capstone (or)	ACCT 200 Principles of Accounting II
ACCT 201 Intermediate Accounting I	BUSI 291 Business Internship	BUSI 290 Business Capstone (or)
ACCT 203 Income Tax Accounting	CIS 135 Intermediate Spreadsheet Applications	BUSI 291 Business Internship
ACCT 204 Managerial Cost Accounting	Program Electives**	CIS 135 Intermediate Spreadsheet Applications
ACCT 215 Accounting Software Applications		MGMT 203 Human Resources Management
ACCT 275 Capstone in Accounting (or)		MGMT 226 Principles of Leadership
BUSI 291 Business Internship		Program Electives***

<b>Marketing Concentration</b>	
BUSI 290 Business Capstone (or)	3
BUSI 291 Business Internship	(3)
CIS 135 Intermediate Spreadsheet Application	3
MKTG 212 Professional Selling	3
MKTG 218 Advertising	3
MKTG 235 Digital Media Marketing	3
Program Electives****	6
	21

\*\*Students select program electives from the following subjects: ACCT, AUCTION, BAKE, BANK, BUSI, ECON, ENTR, ENVI, FIN, HORT, MGMT, MKTG, & RE.

\*\*\*Students select program electives from the following courses: ACCT 204; BUSI 230, 245; MGMT 204, 206, 221, 227.

\*\*\*\*Students select program electives from the following courses: MKTG 205, 216, 220; BUSI 230; CIS 145; COMM 221; HTMT 213.

## **RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS**

Part-time students can complete this program by taking one or more courses each semester.

### **Accounting Concentration**

<b>Fall Semester I</b>		<b>Spring Semester I</b>		<b>Fall Semester II</b>		<b>Spring Semester II</b>	
ACCT 101	4	ACCT 200	4	ACCT 201	4	ACCT 203	4
ENGL 101	3	CIS 105	3	ACCT 215	3	ACCT 204	3
FYS Elective	3	COMM 101	3	BUSI 201 or 209	3	ACCT 275 or BUSI 291	3
Humanities/Arts Elective	3	ENGL 106	3	MGMT 201	3	ECON 201	3
Social/Behavioral Science Elective	3	Math/Science Elective	3 or 4	MKTG 201	3	Wellness	1

### **General Business Concentration**

<b>Fall Semester I</b>		<b>Spring Semester I</b>		<b>Fall Semester II</b>		<b>Spring Semester II</b>	
COMM 101	3	ACCT 101	4	BUSI 201 or 209	3	BUSI 290 or 291	3
ENGL 101	3	CIS 105	3	CIS 135	3	ECON 201	3
FYS Elective	3	ENGL 106	3	MKTG 201	3	Program Electives	9
MGMT 201	3	Humanities/Arts Elective	3	Program Electives	6	Wellness	1
Social/Behavioral Science Elective	3	Math/Science Elective	3 or 4				

### **Management Concentration**

<b>Fall Semester I</b>		<b>Spring Semester I</b>		<b>Fall Semester II</b>		<b>Spring Semester II</b>	
CIS 105	3	ACCT 101	4	ACCT 200	4	BUSI 290 or 291	3
COMM 101	3	ENGL 106	3	BUSI 201 or 209	3	ECON 201	3
ENGL 101	3	Humanities/Arts Elective	3	CIS 135	3	MGMT 226	3
FYS Elective	3	MGMT 201	3	MGMT 203	3	Program Electives	6
Social/Behavioral Science Elective	3	Math/Science Elective	3 or 4	MKTG 201	3	Wellness	1

### **Marketing Concentration**

<b>Fall Semester I</b>		<b>Spring Semester I</b>		<b>Fall Semester II</b>		<b>Spring Semester II</b>	
COMM 101	3	ACCT 101	4	BUSI 201 or 209	3	BUSI 290 or 291	3
ENGL 101	3	CIS 105	3	CIS 135	3	ECON 201	3
FYS Elective	3	ENGL 106	3	Humanities/Arts Elective	3	MKTG 212	3
MKTG 201	3	MKTG 218	3	MGMT 201	3	Program Electives	6
Social/Behavioral Science Elective	3	Math/Science Elective	3 or 4	MKTG 235	3	Wellness	1

# BUSINESS ADMINISTRATION, Associate in Science Degree - 1026

Business Studies Department

The Business Administration AS degree is a general transfer program for the student who plans to pursue a bachelor's degree in accounting, entrepreneurship, economics, finance, human resource management, information systems, management, marketing, organizational leadership, supply-chain management, or a related field. Since the requirements of bachelor degree institutions vary widely, it is essential to choose an intended transfer institution as soon as possible and carefully follow the program prescribed in that college's catalog. Students who complete HACC's Business Administration AS degree are to be admitted at the Junior-level to any institution participating in Pennsylvania's statewide college credit transfer system. The Business Administration AS degree is accredited by the Accreditation Council for Business Schools and Programs (ACBSP). Since 1992, ACBSP is the only nationally recognized organization that grants regional accreditation to two- and four-year college and universities. The complete program is available at all of HACC's campus locations, as well as through Virtual Learning.

## Transfer Opportunities

This transfer curriculum is provided as a guide for students planning to transfer to a baccalaureate degree granting institution.

## Competency Profile

This curriculum is designed to prepare students to:

- Prepare and deliver oral and written presentations on business concepts
- Utilize various methods of collecting, processing, and analyzing information to complete assignments and make informed decisions
- Describe the effects of legal and ethical forces on an organization's decision-making
- Provide information on the impact of legal, economic, and financial decisions on various areas within an organization
- Demonstrate how economic information supports and influences decisions by management, marketing, finance, and business law
- Complete classroom learning activities that require interacting as groups
- Explain that there are cultural differences in business practices
- Use the appropriate software and technologies, including Word, Excel, and Power Point, to complete various assignments
- Use library resources to access and extract information from online databases appropriate for business

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 62)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	ACCT 101 Principles of Accounting I	4	CIS 105 Introduction to Software for Business	3
ENGL 102 English Composition II (or)	3	ACCT 200 Principles of Accounting II	4	Transfer Electives**	9
ENGL 106 Business Writing	(3)	BUSI 201 Business Law I (or)	3		12
		BUSI 209 Legal Environment of			
COMM 101 Effective Speaking	3	Business	(3)		
Humanities & Arts Elective	3	ECON 202 Microeconomics	3		
Social & Behavioral Science Elective - ECON					
201	3	MGMT 201 Principles of Management	3		
Mathematics Elective - MATH 110*	4	MKTG 201 Principles of Marketing	3		
Math or Science Elective - MATH 202	4		20		
Science w/ a Lab Elective	3				
First-Year-Seminar Elective - BUSI 101	3				
Wellness	1				
	30				

\*MATH 103 is the prerequisite for MATH 110; Students may test out of MATH 103 or include it as a transfer elective.

\*\*Students are to select transfer electives that are appropriate for their intended transfer institution.

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part time students can complete this program by taking one or more courses each semester.

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
BUSI 101	3	BUSI 201 or 209	3	ACCT 101	4	ACCT 200	4
CIS 105	3	ECON 201	3	ECON 202	3	Humanities/Arts Elective	3
COMM 101	3	ENGL 102 or 106	3	MKTG 201	3	MATH 110	4
ENGL 101	3	MGMT 201	3	MATH 202	4	Science w/ Lab Elective	3
Wellness	1	Transfer Elective	3	Transfer Elective	3	Transfer Elective	3

# CARDIOVASCULAR TECHNOLOGY- CARDIAC SONOGRAPHY, Associate in Science Degree - 3530

Health & Public Service Department

The Cardiovascular Technology: Cardiac Sonography AS program prepares students to enter the healthcare profession as a Diagnostic Cardiac Sonographer. A Diagnostic Sonographer utilizes high frequency sound waves to produce, record, and evaluate ultrasound images of the heart, great vessels and surrounding anatomy. The Diagnostic Cardiac Sonographer must be proficient in various different ultrasound modalities including M-mode, 2-Dimensional, Doppler and Color Doppler imaging. This occupation requires specialized technical skills, critical thinking and problem-solving ability as well as medical knowledge including anatomy, physiology, and pathophysiology to render quality care. Individuals must be able to correlate related patient data, apply physics principles in order to obtain optimal images for rendering a diagnosis, and develop differential diagnoses based on patient history and examination findings. The curriculum uses didactic, laboratory, and clinical instruction to achieve its goal of preparing students to care for cardiac patients. This program is accredited by the Commission on Accreditation of Allied Health Education Programs. The complete program is available at the Lancaster Campus.

**Selective Program:** Entry into this program is not guaranteed with admission to the College; this is a selective and competitive admission program, specific admissions criteria must be met. Please go to the Health Careers website ([www.hacc.edu/healthcareers](http://www.hacc.edu/healthcareers)), or contact us by email at [start@hacc.edu](mailto:start@hacc.edu) for specific program entry requirements.

## Career Opportunities

Graduates are employed as diagnostic cardiac sonographers by health care facilities and other specialized facilities requiring their specific expertise in the field of cardiovascular technology.

## Competency Profile

This curriculum is designed to prepare students to:

- Demonstrate effective oral and written communication skills
- Function effectively as a member of the healthcare team
- Demonstrate how specialized training fits into the healthcare delivery system
- Demonstrate the entry-level competencies prescribed by the American Registry of Diagnostic Medical Sonographers (ARDMS) or Cardiovascular Credentialing Institute (CCI)
- Take national entry-level credentialing examinations for cardiovascular principles and instrumentation, physics, and adult cardiography administered by the ARDMS or CCI

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 63)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	CVT 101 Introduction to Cardiovascular Tech	3		
ENGL 102 English Composition II	3	CVT 102 Cardiovascular Technology Laboratory	1		
COMM 101 Effective Speaking (or)	3	CVT 103 Cardiovascular Technology Clinical Experience	2		
COMM 203 Interpersonal Communication	(3)	CVT 219 Intro to Ultrasound Imaging Systems	1		
Humanities & Arts Elective*	3	CVT 220 Intro to Ultrasound Imaging Systems	3		
Mathematics Elective - MATH 111	3	CVT 221 Cardiac Pathophysiology & Echo Concepts I	4		
Mathematics or Science Elective - BIOL 122	4	CVT 222 Cardiac Sonography Phys & Instrumentation	3		
Science w/ a Laboratory Elective - BIOL 121	4	CVT 223 Cardiac Pathophysiology & Echo Concepts II	4		
Social & Behavioral Science Elective	3	CVT 224 Cardiac Sonography Clinical I	4		
First-Year Seminar Elective - CVT 100	3	CVT 226 Cardiac Hemodynamics	1		
Wellness	1	CVT 228 Cardiac Sonography Clinical II	5		
	30	CVT 230 Introduction to Pediatric Echocardiography	2		
			33		

\*\*Students are to select courses from the following: ART 181, 182; ENGL 206; HUM 101, 115, 201; MUS 104; PHIL 200; THTR 101; SPAN 104; or a foreign language course.

Note: A grade of C or higher is required in all CVT courses; for BIOL 121 and 122.

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students can complete this program by taking one or more courses each semester.

Spring Semester I		Summer I		Fall Semester I		Spring Semester II		Summer II		Fall Semester II	
BIOL 121	4	BIOL 122	4	CVT 221	4	CVT 219	1	CVT 224	4	CVT 228	5
CVT 100	3	CVT 103	2	CVT 222	3	CVT 220	3	CVT 226	1	CVT 230	2
CVT 101	3			ENGL 101	3	CVT 223	4			Humanities/Arts Elective	3
CVT 102	1			Social/Behavioral Science	3	COMM 101 or 203	3			Wellness	1
MATH 111	3			Elective		ENGL 102	3				

# CARDIOVASCULAR TECHNOLOGY- INVASIVE CARDIOVASCULAR TECHNOLOGY, Associate in Science Degree - 3510

Health & Public Service Department

The Invasive Cardiovascular Technology As program prepares students to enter the healthcare profession as Invasive Cardiovascular Technologists. An Invasive Cardiovascular Technologist is a highly specialized and knowledgeable healthcare professional who is educated and trained to perform invasive diagnostic and therapeutic procedures under the direction of the physician to evaluate, diagnose, and treat patients with cardiac disease. The Invasive Cardiovascular Technologist requires specialized technical skills, critical thinking and problem-solving ability as well as medical knowledge including anatomy, physiology, and pathophysiology to render quality patient care; must be able to correlate related patient data, apply physics principles in order to obtain optimal images for rendering a diagnosis, and develop differential diagnoses based on patient history and examination findings. The curriculum uses didactic, laboratory, and clinical instruction to achieve its goal of preparing students to care for cardiac patients. The program is accredited by the Commission on Accreditation of Allied Health Education Programs. This program requires the student to complete a Pennsylvania Child Abuse History Clearance and/or State Police Criminal Record Check prior to enrollment, prior to the start of a clinical experience, prior to testing and/or obtaining employment. The student should consider this factor before enrolling in this program. If the student has any questions regarding this, he or she should contact the Program Director. The complete program is only available at the Lancaster Campus.

*Selective Program:* Entry into this program is not guaranteed with admission to the College; this is a selective and competitive admission program, specific admissions criteria must be met. Please go to the Health Careers website ([www.hacc.edu/healthcareers](http://www.hacc.edu/healthcareers)), or contact us by email at [start@hacc.edu](mailto:start@hacc.edu) for specific program entry requirements.

### Career Opportunities

Graduates will be qualified to seek employment as Invasive Cardiovascular Technologies in both diagnostic and interventional facilities, specifically in a Cardiac Catheterization laboratory in a hospital.

### Competency Profile

This curriculum is designed to prepare students to:

- Demonstrate competencies needed to gain employment in the Cardiac Catheterization area
- Demonstrate proficiency in all aspects of diagnostic and therapeutic procedures
- Utilize a variety of equipment in the Catheterization setting
- Assist the physician in patient-care aspects of the Catheterization laboratory
- Function effectively as a member of the healthcare team
- Become eligible to sit for the national registry examination
- Write and speak effectively

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 66)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	CVT 101 Intro to Cardiovascular Tech	3		
ENGL 102 English Composition II	3	CVT 102 Cardiovascular Technology Laboratory	1		
COMM 101 Effective Speaking (or)	3	CVT 103 Cardiovascular Technology Clinical Experience	2		
COMM 203 Interpersonal Communication	(3)	CVT 200 Cardiac Pathophysiology	4		
Humanities & Arts Elective*	3	CVT 210 Intro to Invasive Cardiovascular Technology	3		
Mathematics Elective - MATH 111	3	CVT 211 Radiation Safety/ Invasive Instrumentation	2		
Mathematics or Science Elective - BIOL 122	4	CVT 212 Invasive Cardiovascular Procedures	3		
Science w/ a Laboratory Elective - BIOL 121	4	CVT 213 Invasive Instrumentation Lab	2		
Social & Behavioral Science Elective	3	CVT 214 Interventional Cardiac Procedures	4		
First-Year Seminar Elective - CVT 100	3	CVT 215 Invasive Clinical Practicum I	4		
Wellness	1	CVT 216 Congenital Heart Disease	1		
	30	CVT 217 Invasive Practicum Clinical II	5		
		CVT 218 Cardiovascular Pharmacology	2		
			36		

\*Students are to select courses from the following: ART 181, 182; ENGL 206; HUM 101, 115, 201; MUS 104; PHIL 200; THTR 101; SPAN 104; or a foreign language course.

Note: A grade of C or higher is required for BIOL 121, 122 and all of the CVT courses.

### RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students can complete this program by taking one or more courses each semester.

Spring Semester I		Summer I		Fall Semester I		Spring Semester II		Summer II		Fall Semester II	
BIOL 121	4	BIOL 122	4	CVT 200	4	CVT 210	3	CVT 214	4	COMM 101 or 203	3
CVT 101	3	CVT 103	2	CVT 218	2	CVT 211	2	CVT 215	4	CVT 216	1
CVT 102	1			ENGL 101	3	CVT 212	3			CVT 217	5
CVT 100	3			Social/Behavioral Science Elective	3	CVT 213	2			Humanities/Arts Elective	3
MATH 111	3			Wellness	1	ENGL 102	3				

## CHEMISTRY, Associate in Science Degree - 3026

### Science Department

The Chemistry AS program provides students with the necessary foundation in mathematics, science, and liberal arts to transfer and succeed in a baccalaureate degree program in Chemistry. This program also permits students to complete the pre-requisite courses for application to institutions offering degrees/programs in biochemistry, chemical engineering, environmental science, molecular-life science, or teaching. Because the requirements of transfer institutions and their degree programs may vary widely, it is recommended that students carefully review the program requirements of their chosen transfer institution and align their HACC course sequence with the program outlined in that institution's catalog. Students who complete HACC's Chemistry AS degree will be admitted at the Junior-level in Chemistry to any institution participating in Pennsylvania's statewide college credit transfer system. The complete program is available at the Harrisburg and Lancaster campuses.

### Transfer Opportunities

This transfer curriculum is provided as a guide for students planning to transfer to a baccalaureate degree granting institution. Courses in chemistry and related subjects are offered for students who expect to transfer to four-year college or university programs in chemistry, biochemistry, chemical engineering, environmental science, molecular-life science, or teaching.

### Competency Profile

This curriculum is designed to prepare graduates of the program to:

- Transfer with the skills required for success in a Baccalaureate degree program in Chemistry
- Discuss and apply scientific principles and concepts
- Demonstrate an appreciation of scientific accomplishments and how they affect technology, politics, and society
- Apply the scientific method to solve scientific problems
- Demonstrate computer literacy in data manipulation and analysis
- Perform technician work in a typical laboratory while following appropriate safety procedures
- Demonstrate communication of results both orally and through written reports

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 61)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	CHEM 102 General Inorganic/Qual. Analysis	4	Transfer Electives**	12
ENGL 102 English Composition II (or)	3	CHEM 203 Organic Chemistry I	4		
ENGL 104 Technical Writing	(3)	CHEM 204 Organic Chemistry II	4		
COMM 101 Effective Speaking	3	PHYS 211 Physics for Engineers & Scientists I	4		
Humanities & Arts Elective*	3	PHYS 212 Physics for Engineers & Scientists II	4		
Mathematics Elective - MATH 121	4		20		
Mathematics or Science Elective - MATH 122	4				
Science w/ a Laboratory Elective - CHEM 101	4				
Social & Behavioral Science Elective	3				
First-Year-Seminar Elective (Rec: SCI 100)	1				
Wellness	1				
	29				

\*Students are to select courses from the following: ART 181 or 182; ENGL 206; HUM 101, 115 or 201; MUS 104; PHIL 200; THTR 101; or a foreign language course.

\*\*Students are to select transfer electives from the following courses: CPS 113; 115; 121 or 135; BIOL 102; 206; 212; 215; 221 or 250; any 100 level or higher.

### RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students can complete this program by taking one or more courses each semester.

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
CHEM 101	4	CHEM 102	4	CHEM 203	4	CHEM 204	4
COMM 101	3	ENGL 102 or 104	3	PHYS 211	4	PHYS 212	4
ENGL 101	3	Humanities/Arts Elective	3	Transfer Electives	6	Transfer Electives	6
FYS Elective	1	MATH 122	4			Wellness	1
MATH 121	4	Social/Behavioral Science Elective	3				

# CIVIL TECHNOLOGY, Associate in Applied Science Degree - 4720

Engineering & Technology Department

**ATTENTION: The Civil Technology AAS program is currently under review by the Engineering & Technology department and significant revisions to the curriculum are expected for implementation in Fall 2019. Until then, the College will be temporarily suspending new student enrollments. Interested students are encouraged to contact Dr. Kelley Engle, Engineering & Technology Department Chair, at [kmengle@hacc.edu](mailto:kmengle@hacc.edu) for more information. Thank you!**

The Civil Technology AAS program introduces students to the basics of CAD drafting and design in the following areas of civil engineering: highway, land development, drainage, erosion and sedimentation control, and surveying. In addition, students gain the skills necessary to write specifications and assist in preparing reports, permits, cost estimates, project documentation, and presentations. The complete program is only available at the Harrisburg Campus. CVTE courses are available during the afternoons and evenings.

## Career Opportunities

Graduates of this program are trained to work as technicians, engineering technicians, designers, and CAD operators in the civil engineering field. The program prepares students for positions with surveying companies or as members of surveying crews.

## Competency Profile

This curriculum is designed to prepare students to:

- Use AutoCAD, CAD Civil 3D, and MicroStation CAD software in the civil engineering environment
- Function as members of a crew performing surveying operations and processing data
- Layout an engineer's conceptual highway design and create horizontal and vertical alignment
- Design commercial and residential building sites under the supervision of an engineer
- Interpret the major laws and codes that govern the practice of civil engineering, architecture, and surveying
- Draw boundary surveys
- Draft and design horizontal curves and vertical curves and operate a CAD station efficiently
- Develop contour plans, profiles, cut and fill, and cross sections
- With supervision, prepare drainage design for storm sewers, culverts, and outfall protection
- Develop erosion and sedimentation control plans with the assistance of an engineer
- Write specifications and prepare cost estimates for highway and land development projects
- Utilize PennDOT Design Manuals for highway design and plan presentation
- Apply design basics for storm water management, utilities, parking, contours, plans, and profiles
- Write and speak effectively
- Appreciate accomplishments in the arts and sciences

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 63)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	CVTE 102 Intro to Highway, Drainage, Erosion & Sedimentation Control	3	CAD 115 MicroStation I	1
ENGL 104 Technical Writing	3	CVTE 103 Surveying I	3	CAD 125 MicroStation II	1
COMM 203 Interpersonal Communication	3	CVTE 105 Numerical Methods Civil Eng.	3	CAD 130 Civil Engineering Drawing	1
(or) COMM 101 Effective Speaking	(3)	CVTE 110 Civil Engineering Graphics	2	*MATH 161 Technical Math for Gen Tech	3
Core A Elective	3	CVTE 111 Topographic Site Mapping	2		
Core B Elective	3	CVTE 112 Topographic Highway Mapping	2		6
Core C Elective	3	CVTE 120 Codes, Laws, Acts & Regulations	1		
Free Elective	3	CVTE 132 Civil 3D Computer Aided Design	1		
Physical Education & Wellness	1	CVTE 203 Surveying II	3		
	22	CVTE 205 Highway Design	3		
		CVTE 207 Drainage Design	3		
		CVTE 209 Topics in Site Design	3		
		CVTE 211 Erosion and Sedimentation Control and Permits	3		
		CVTE 213 Capstone Project	3		
			35		

\*May be replaced with a higher level MATH, with an advisor's approval.

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

CVTE courses are taught in the afternoon and evenings only.

Fall Semester I	Spring Semester I	Summer I	Fall Semester II	Spring Semester II	Summer II
CAD 130	1 Core A Elective	3 CVTE 103	3 Core B Elective	3 CAD 115	1 Free Elective
CVTE 105	3 CVTE 102	3 PE & Wellness	1 Core C Elective	3 CAD 125	1
CVTE 110	2 CVTE 111			3 COMM 203/101	3
CVTE 120	1 CVTE 112			3 CVTE 211	3
ENGL 101	3 CVTE 132			3 CVTE 209	3
MATH 161	3 ENGL 104			3 CVTE 213	3

## CIVIL TECHNOLOGY, Certificate - 4220

Engineering & Technology Department

CIP Code: 15.0201

**ATTENTION: The Civil Technology certificate program is currently under review by the Engineering & Technology department and significant revisions to the curriculum are expected for implementation in Fall 2019. Until then, the College will be temporarily suspending new student enrollments. Interested students are encouraged to contact Dr. Kelley Engle, Engineering & Technology Department Chair, at [kmengle@hacc.edu](mailto:kmengle@hacc.edu) for more information. Thank you!**

The Civil Technology certificate introduces students to the basics of CAD drafting and design in the following areas of civil engineering: highway, land development, drainage, erosion and sedimentation control, and surveying. In addition, students are able to write specifications and gain the skills necessary to assist engineers in preparing civil engineering plan submissions. A typical submission may contain specifications, reports, permits, cost estimates, project documentation, and presentations. The complete program is only available at the Harrisburg Campus. CVTE courses are available during the afternoons and evenings.

### Career Opportunities

Graduates of this program are trained as technicians, designers, and CAD operators for employment in the civil engineering field. The program also prepares students for positions with surveying companies or as members of surveying crews.

(SOC Code: 17-3011 Architectural and Civil Drafters)

Link to Occupational profiles on O\*NET: <http://www.onetcodeconnector.org/>

Application and admission information: <http://www.hacc.edu/NewStudents/Apply/index.cfm>

### Competency Profile

This curriculum is designed to prepare students to:

- Use AutoCAD, CAD Civil 3D, and MicroStation CAD software in the civil engineering environment
- Function as members of a crew performing surveying operations and processing data
- Layout an engineer's conceptual highway design and create the horizontal and vertical alignment
- Design commercial and residential building sites under the supervision of an engineer
- Interpret the major laws and codes that govern the practice of civil engineering, architecture, and surveying
- Draw boundary surveys
- Draft and design horizontal curves and vertical curves and operate a CAD station efficiently
- Develop contour plans, profiles, cut and fill lines, and cross sections
- With supervision, prepare drainage design for storm sewers, culverts and outfall protection
- Develop erosion and sedimentation control plans with the assistance of an engineer
- Utilize PennDOT Design Manuals for highway design and plan presentation
- Apply design basics of storm water management, utilities, parking, contours, plans, and profiles
- Design storm sewers, culverts, and outfall protection based on instruction from an engineer

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 42)

General Education	Major Requirements		Other Required Courses	
	CVTE 102 Intro to Highway, Drainage, Erosion & Sedimentation Control	3	CAD 115 MicroStation I	1
	CVTE 103 Surveying I	3	CAD 125 MicroStation II	1
	CVTE 105 Numerical Methods in Civil Engineering	3	CAD 130 Civil Engineering Drawing	1
	CVTE 110 Civil Engineering Graphics	2	*ENGL 901 Basic Communication Skills	1
	CVTE 111 Topographic Site Mapping	2	*MATH 161 Technical Math for GenTech	3
	CVTE 112 Topographic Highway Mapping	2		7
	CVTE 120 Codes, Laws, Acts & Regulations	1		
	CVTE 132 Civil 3D Computer-Aided-Design	1		
	CVTE 203 Surveying II	3		
	CVTE 205 Highway Design	3		
	CVTE 207 Drainage Design	3		
	CVTE 209 Topics in Site Design	3		
	CVTE 211 Erosion and Sedimentation Control and Permits	3		
	CVTE 213 Capstone Project	3		
		35		

\*Maybe replaced with higher level ENGL and MATH offerings, with an advisor's approval.

Please see the College's website at <http://www.hacc.edu/ProgramsandCourses/index.cfm> for the most current Gainful Employment Information.



## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

### Human Communication Concentration

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
ENGL 101	3	COMM 101	3	COMM 201	3	COMM 253	3
FYS Elective	3	COMM 120	3	COMM 203	3	COMM 290	1
Humanities/Arts Elective	3	COMM 202	3	COMM 251	3	Transfer Electives	7
Transfer Elective	3	ENGL 102 <b>or</b> 104, <b>or</b> 106	3	Math/Science Elective	3	Science w/ a Lab	3
Social/Behavioral Science Elective	3	Mathematics Elective	3	Transfer Elective	3	Wellness	1

### Journalism Concentration

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
ENGL 101	3	COMM 101	3	COMM 201	3	COMM 253	3
FYS Elective	3	COMM 120	3	COMM 222	3	COMM 290	1
Humanities/Arts Elective	3	COMM 221	3	Communications Elective	3	Transfer Electives	7
Transfer Elective	3	ENGL 102 <b>or</b> 104, <b>or</b> 106	3	Math/Science Elective	3	Science w/ a Lab	3
Social/Behavioral Science Elective	3	Mathematics Elective	3	Transfer Elective	3	Wellness	1

### Public Relations Concentration

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
ENGL 101	3	COMM 101	3	COMM 201	3	COMM 253	3
FYS Elective	3	COMM 120	3	COMM 221	3	COMM 290	1
Humanities/Arts Elective	3	COMM 211	3	COMM 261	3	Transfer Electives	7
Transfer Elective	3	ENGL 102 <b>or</b> 104, <b>or</b> 106	3	Math/Science Elective	3	Science w/ a Lab	3
Social/Behavioral Science Elective	3	Mathematics Elective	3	Transfer Elective	3	Wellness	1

# COMPUTER INFORMATION SECURITY, Associate in Science Degree - 1030

Engineering & Technology Department

The Computer Information Security AS program prepares students to continue their studies study towards a baccalaureate degree in computer information security at a four-year institution. This curriculum places emphasis on mathematics, computer programming, network infrastructure and operating systems and its secure application in industry. Since the requirements of senior institutions vary widely, it is essential to choose an intended transfer institution as soon as possible and carefully follow the program described in that college's catalog. The complete program is available at the Harrisburg Campus. Students may also complete this program at the Lancaster Campus by taking some courses through Virtual Learning.

## Transfer Opportunities

This transfer curriculum is provided as a guide for students planning to transfer to a baccalaureate degree granting institution. Computer information security specialists find employment as Security Information Service Operators, Information Security Specialists, Information Security Administrators, Information Security Advisors, Information Security Consultants, Information Security Analysts, Information Security Auditors, Information Security Manages, and Information Security Architects.

## Competency Profile:

This curriculum is designed to prepare students to:

- Develop information security policies and procedures
- Apply technology devices to meet business requirements secure information system components
- Design secure network architectures
- Implement technological solutions, both hardware and software, as it pertains to information security
- Maintain an awareness of industry requirements and laws
- Respond to information system intrusions and support investigative processes
- Manage information security resources
- Provide information security training and awareness programs

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 65)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	CIS 105 Introduction to Software for Business	3	Program Electives**	6
ENGL 102 English Composition II (or)	3	CIS 140 Intermediate Database Management	3		
ENGL 104 Technical Writing	(3)	CIS 222 Introduction to Windows Servers	3		
COMM 101 Effective Speaking	3	CIS 224 Introduction to System Analysis & Design	4		
Humanities & Arts Elective*	3	CIS 241 Database Administration I	3		
Mathematics Elective - MATH 103, 119 or 121	3 or 4	CIS 264 Fundamentals of Linux Administration	3		
Mathematics or Science Elective - MATH 202	4	CISE 200 Information Security Fundamentals	3		
Science w/ a Laboratory Elective	3	CNT 120 Network Communication Technology I	3		
Social & Behavioral Science Elective	3	CNT 125 Network Communication Technology II	4		
First-Year Seminar Elective	1	CPS 121 Computer Science I: Intro to Computer Programming JAVA	3		
Wellness	$\frac{1}{27}$		32		

\*Students are to select from the following courses: ART 181, 182; ENGL 206; HUM 115, 201; MUS 104; PHIL 200; THTR 101; or any foreign language course.

\*\*Select from the following courses: CIS 145, 243, 245, 247, 270; CISE 210; CNT 220, 230, 240, 250, 260, 291; CPS 161, 162, 230; ELEC 125, 126; MATH 104, 119, 121, 125, 203; WEB 143.

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students can complete this program by taking one or more courses each semester.

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
CIS 105	3	CIS 140	3	CIS 222	3	CIS 224	4
CNT 120	3	CNT 125	4	CIS 241	3	CIS 264	3
ENGL 101	3	CPS 121	3	COMM 101	3	CISE 200	3
FYS Elective	1	ENGL 102 or 104	3	Program Elective	3	Program Elective	3
Humanities/Arts Elective	3	MATH 202	4	Science w/ a Lab Elective	3	Social/Behavioral Science Elective	3
MATH 103, 119 or 121	3 or 4			Wellness	1		

# COMPUTER INFORMATION SYSTEMS, Associate in Applied Science Degree - 1796

Engineering & Technology Department

The Computer Information Systems AAS degree provides students with the essential knowledge and skills in computer software, hardware, and network communication needed for entry into the computer technology job market. Students are able to focus their studies by choosing one of three concentrations: **Support Specialist**, which concentrates on technical support with software, hardware, and security; **Database Analyst**, which emphasizes database management and administration, and; **Business Intelligence Application Developer**, which focuses on application development and data analysis in a business environment. Graduates of all options apply their cumulative knowledge and skills through a capstone experience, which results in the completion of an individual electronic portfolio. The complete program is available at the Harrisburg campus by students taking courses through Virtual Learning. The Support Specialist concentration can be completed at the York Campus. This concentration can also be completed at the Lancaster campus by taking some courses through Virtual Learning. The Database Analyst concentration can also be completed at the York Campus by taking courses through Virtual Learning. Lastly, the Business Intelligence Application Developer concentration can be fully completed through Virtual Learning.

## Career Opportunities

Graduates may obtain entry-level positions within many different businesses, government agencies, computer consulting firms, health care, and educational institutions. Depending on the degree concentration the student has chosen, below are the specific occupations associated with each of the three options:

- Support Specialist: computer operator, help-desk analyst, and technical support specialist.
- Database Analyst: database analyst, database administrator, and data modeler
- Business Intelligence Application Developer: application programmer, data warehouse developer, and business analyst

## Competency Profile

These degree concentrations are designed to prepare students to:

- Work individually and as team members on computer projects
- Write and speak effectively

### The Support Specialist:

- Manage and troubleshoot computer software, hardware, and networks
- Operate a help-desk support system

### The Database Analyst:

- Manage database management systems
- Develop a database system through an entire life-cycle

### The Business Intelligence Application Developer:

- Perform analytical processing and data mining
- Develop applications using programming and markup languages to support data analysis

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 61)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	CIS 105 Introduction to Software for Business	3	Computer-Related Elective**	3
COMM 101 Effective Speaking (or)	3	CIS 110 Introduction to Computer Information Systems	3		
COMM 203 Interpersonal Communication	(3)	CIS 135 Intermediate Spreadsheet Application	3		
Humanities & Arts Elective*	3	CNT 120 Network Communication Technology I	3		
Social & Behavioral Science Elective	3		12		
First-Year-Seminar Elective	1				
Wellness	1				
	14				

\*Students are to select from the following courses: ART 181, 182; ENGL 206; HUM 101, 115, 201; MUS 104; PHIL 200; THTR 101; or a foreign language course.

\*\*Students are to select from the following subject areas: CIS (except CIS 100), CISE, CNT, GIS, and WEB.

**Support Specialist Option**

CIS 127 MS Operating Systems	3
CIS 140 Intermediate Database Management	3
CIS 222 Intro to Windows Servers	3
CIS 227 Technical Support	3
CIS 266 Support Specialist Capstone	3
CISE 200 Information Security Fundamentals	3
ELEC 125 Introduction to PC Technology	3
ELEC 126 Installing & Troubleshooting PCs	4
Mathematics or Science Elective	3
WEB 102 Web Exploration & Design	3
Computer-Programming Elective***	3
	<u>34</u>

**Database Analyst Option**

CIS 140 Intermediate Database Management	3
CIS 224 Systems Analysis and Design	4
CIS 241 Database Administration I	3
CIS 243 Database Administration II	3
CIS 245 Database Programming	3
CIS 247 Database Backup and Recovery	3
CIS 257 Data Warehouse	3
CIS 278 Business Intel & Database Analyst Capstone	3
Mathematics or Science Elective (MATH 202)	4
Database-Related Elective****	3
	<u>32</u>

**Business Intelligence Application Developer Option**

CIS 224 Intro to Systems Analysis & Design	4
CIS 241 Database Administration I	3
CIS 257 Data Warehouse	3
CIS 258 Data Mining	3
CIS 278 Business Intel & Database Analyst Capstone	3
Mathematics or Science Elective (MATH 202)	4
WEB 125 HTML & CSS	3
WEB 143 Development Fundamentals	3
WEB 240 JavaScript Programming	3
WEB 245 Advanced Development	3
	<u>32</u>

\*\*\* Select one of the following computer-programming electives: CIS 238; CPS 121; WEB 125 or 143; and WEB course 240-259.

\*\*\*\*Select any database-related elective from the following: CIS 222, 249, 258, 264; or WEB 126, 143.

Note: Grades of C, or higher, are required for all computer-related courses (CIS, CISE, CNT, CPS, ELEC, GIS, and WEB) and in all degree concentrations for graduation (BUSI and MATH). Students must complete CIS 105 with a grade of C, or higher, prior to enrolling into certain courses within the major. They may test out of CIS 105 through a Credit by Examination.

**RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS**

Part-time students can complete this program by taking one or more courses each semester.

**Support Specialist Concentration**

Fall Semester I		Spring Semester I		Summer	Fall Semester II		Spring Semester II		
CIS 105	3	CIS 127	3	CIS 222	3	CISE 200	3	CIS 227	3
CIS 110	3	CIS 135	3			ELEC 126	4	CIS 266	3
CNT 120	3	CIS 140	3			Programming Elective	3	Computer Elective	3
COMM 101 or 203	3	ELEC 125	3			Social/Behavioral Science Elective	3	Humanities/Arts Elective	3
ENGL 101	3	WEB 102	3			Wellness	1	Math/Science Elective	3
FYS Elective	1								

**Database Analyst Concentration**

Fall Semester I		Spring Semester I		Summer	Fall Semester II		Spring Semester II		
CIS 105	3	CIS 135	3	CIS 241	3	CIS 243	3	CIS 224	4
CIS 110	3	CIS 140	3			CIS 245	3	CIS 247	3
CNT 120	3	Humanities/Arts Elective	3			CIS 257	3	CIS 278	3
COMM 101 or 203	3	Math/Science Elective	4			Computer Elective	3	Social/Behavioral Science Elective	3
ENGL 101	3					Database Elective	3	Wellness	1
FYS Elective	1								

**Business Intelligence Application Developer Concentration**

Fall Semester I		Spring Semester I		Summer	Fall Semester II		Spring Semester II	
CIS 105	3	CIS 135	3		CIS 241	3	CIS 224	4
CIS 110	3	CNT 120	3		Computer Elective	3	CIS 257	3
COMM 101 or 203	3	Math/Science Elective	4		Social/Behavioral Science Elective	3	CIS 258	3
ENGL 101	3	WEB 143	3		WEB 240	3	CIS 278	3
FYS Elective	1	Wellness	1		WEB 245	3	Humanities/Arts Elective	3
WEB 125	3							

# COMPUTER INFORMATION SYSTEMS, Certificate - 1312

Engineering & Technology Department  
CIP Code: 11.1006

The Computer Information Systems certificate provides students with the essential knowledge and skills in computer software, hardware, and network communication needed for entry into the computer technology job market. Additionally, the certificate is appropriate for individuals, who are currently in the workforce and are interested in updating their technical skills. Students are able to focus their studies by choosing one of three concentrations: **Support Specialist**, which concentrates on technical support with software, hardware, and security; **Database Analyst**, which emphasizes database management and administration, and; **Business Intelligence Application Developer**, which focuses on application development and data analysis in a business environment. Graduates of all options apply their cumulative knowledge and skills through a capstone experience, which results in the completion of an individual electronic portfolio. The **Support Specialist Concentration** can be completed at the Harrisburg and Lancaster campuses by taking some courses through Virtual Learning. The **Database Analyst Concentration** can be completed at the Harrisburg Campus by taking some courses through Virtual Learning. The **Business Intelligence Application Developer Concentration** can be completed through Virtual Learning and may also be completed at the Harrisburg Campus by taking some courses through Virtual Learning.

## Career Opportunities

Graduates may obtain entry-level positions within many different businesses, government agencies, computer consulting firms, health care, and educational institutions. Depending on the degree concentration the student has chosen, below are the specific occupations associated with each of the three options:

- Support Specialist: computer operator, help-desk analyst, and technical support specialist.
- Database Analyst: database analyst, database administrator, and data modeler
- Business Intelligence Application Developer: application programmer, data warehouse developer, and business analyst

(SOC Code: 15-1150 Computer User Support Specialists) Link to Occupational profiles on O\*NET:

<http://www.onetcodeconnector.org/>

Application and admission information: <http://www.hacc.edu/NewStudents/Apply/index.cfm>

## Competency Profile

These degree concentrations are designed to prepare students to:

The Support Specialist:

- Manage and troubleshoot computer software, hardware, and networks
- Operate a help-desk support system

The Database Analyst:

- Manage database management systems
- Develop a database system through an entire life-cycle

The Business Intelligence Application Developer:

- Perform analytical processing and data mining
- Develop applications using programming and markup languages to support data analysis

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 31)

General Education	Major Requirements	Other Required Courses	
	CIS 105 Introduction to Software for Business	3	
	CIS 110 Introduction to Computer Information Systems	3	
	CNT 120 Network Communication Technology I	<u>3</u>	
		9	
<b>Support Specialist Concentration</b>	<b>Database Analyst Concentration</b>	<b>Business Intelligence Application Developer Concentration</b>	
CIS 127 MS Operating Systems	3	CIS 135 Intermediate Spreadsheet Applications	3
CIS 135 Intermediate Spreadsheet Appl or	3	CIS 224 Intro to Systems Analysis & Design	4
CIS 140 Intermediate Database Management	(3)	CIS 241 Database Administration I	3
CIS 222 Intro to Windows Servers	3	CIS 245 Database Programming	3
CIS 227 Technical Support	3	CIS 257 Data Warehouse	3
CISE 200 Information Security Fundamentals	3	WEB 125 HTML & CSS	3
ELEC 125 Introduction to PC Technology	3	WEB 143 Development Fundamentals	<u>3</u>
ELEC 126 Installing & Troubleshooting PCs	4		22
	22		

*Note: Grades of C, or higher, are required for all computer-related courses (CIS, CISE, CNT, CPS, ELEC, GIS, and WEB) and in all certificate concentrations for graduation.*

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

### Support Specialist Concentration

Summer		Fall Semester I		Spring Semester I	
CIS 105	3	CIS 110	3	CIS 135 or 140	3
CNT 120	3	CIS 127	3	CIS 227	3
		CIS 222	3	CISE 200	3
		ELEC 125	3	ELEC 126	4

### Database Analyst Concentration

Summer		Fall Semester I		Spring Semester II	
CIS 105	3	CIS 110	3	CIS 224	4
CNT 120	3	CIS 135	3	CIS 241	3
		CIS 140	3	CIS 245	3
		WEB 143	3	CIS 257	3

### Business Intelligence Application Developer Concentration

Summer		Fall Semester I		Spring Semester II	
CIS 105	3	CIS 110	3	CIS 224	4
		CIS 135	3	CIS 241	3
		CNT 120	3	CIS 245	3
		WEB 125	3	CIS 257	3
		WEB 143	3		

Please see the College's website at <http://www.hacc.edu/ProgramsandCourses/Computer-Information-Systems-1312.cfm> for the most current Gainful Employment Information.

# COMPUTER INFORMATION SYSTEMS- Software Specialist Diploma - 0220

Engineering & Technology Department

CIP Code: 11.0601

The Computer Information Systems – Software Specialist diploma prepares students for careers as computer information systems software specialists. The coursework focuses on developing proficiency in word processing, spreadsheet creation to solve problems, computerized presentations, and development of database applications. These skills enable a student to work effectively with software tools in a business/organizational environment. The courses also prepare the student to take the Microsoft Officer User Specialist (MOUS) examinations to be certified by Microsoft as expert users of the software. The complete program is available at the York Campus. The program may also be completed at the Harrisburg and Lancaster campuses by taking some courses through Virtual Learning.

## Career Opportunities

Graduates of the program will be able to work effectively with software tools in a business/organizational environment.

(SOC Code: 43-9021 Data Entry Keyers)

Link to Occupational profiles on O\*NET: <http://www.onetcodeconnector.org/>

Application and admission information: <http://www.hacc.edu/NewStudents/Apply/index.cfm>

## Competency Profile

This curriculum is designed to prepare students to:

- Demonstrate mastery of various software packages on computers
- Be able to decide which application tools is best suited to achieve the desired result
- Demonstrate the ability to integrate various applications and link them
- Understand the use of software as a communication tool in a business environment

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 16)

### General Education

### Major Requirements

### Other Required Courses

CIS 105 Introduction to Software for Business	3
CIS 108 Introduction to Power Point	1
CIS 110 Introduction to Computer Systems	3
CIS 127 MS Windows Operating System	3
CIS 135 Intermediate Spreadsheet Applications	3
CIS 140 Intermediate Database Management	3
	16

Please see the College's website at <http://www.hacc.edu/ProgramsandCourses/Computer-Information-Systems-Software-Specialist-0220.cfm> for the most current Gainful Employment Information.

# COMPUTER NETWORKING TECHNOLOGY, Associate in Applied Science Degree - 4590

Engineering & Technology Department

The Computer Networking AAS program prepares students for employment in the field of information technology in roles such as network technician, network administrator, systems administrator and customer support. They are trained to design, install, configure, troubleshoot and maintain networks. The program includes the study of data communications, telecommunications, Windows and Linux Server administration, information security fundamentals, PC repair, TCP/IP, cabling, terminations, network connections, cable testers, network analyzers, NIC's, hubs, bridges, switches, and routers. Elective courses allow the students to learn specialized topics such as Cisco Routing and Switching, Voice over IP (VoIP), Wireless Networking Administration and Virtualization and Cloud Computing. Coursework in oral and written communication skills is also included in order to provide these essential skills to needed to excel in today's workplace environment. The program is vendor neutral and coordinates with national standards from the Computing Technology Industry Association (CompTIA). The program can be completed at the Harrisburg Campus by taking some courses through Virtual Learning.

## Career Opportunities

Computer networking encompasses a broad range of jobs and job titles for CNT graduates including network support technicians, network administrators, network planning analysts, systems analysts, network coordinators, telecommunications specialists, information technology specialists, consultants, market representatives, and related information technologist positions.

## Competency Profile

This curriculum is designed to prepare students to:

- List and describe TCP/IP layers, layer interactions, protocols, and applications
- Install, connect, and configure network hardware and software to meet common requirements
- Design and implement an internetwork including IP addressing, subnetting, routing, switching, Virtual Local Area Networks (VLANs), and network design documentation
- Describe the technologies associated with network communications including signaling, noise, error detection and correction, flow control techniques, data compression, and encoding technology
- Describe technical aspects of Ethernet operation including access technologies, bandwidths, standards, VLANs, and electronic connecting devices
- List and describe common Wide Area Network (WAN) technologies, topologies, and associated protocols and devices
- Demonstrate proper troubleshooting methods while implementing networks
- Design, install, test, troubleshoot, and certify communications wiring systems
- Install, test, and troubleshoot PC hardware and windows desktop operating systems
- Demonstrate professional interaction with end users in a technical support environment utilizing troubleshooting, escalation channels, help desk software, and communications skills
- Install, maintain, administer, and support Linux server operating systems
- Install, maintain, administer, and support Windows server operating systems including Active Directory
- List and describe common legal, ethical, and business requirements for securing information
- Utilize security tools and common best practices to design a secure network architecture

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 60)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I (or)	3	CIS 222 Introduction to Windows Servers	3	Program Specific Electives**	9
ENGL 110 Foundations of Professional Writing	(3)	CIS 227 Technical Support	3		
COMM 101 Effective Speaking (or)	3	CIS 264 Fundamentals of Linux Administration	3		
COMM 203 Interpersonal Communication	(3)	CISE 200 Information Security Fundamentals	3		
Humanities & Arts Elective*	3	CNT 120 Network Communication Technology I	3		
Mathematics or Science Elective - MATH 100	3	CNT 125 Network Communication Technology II	4		
Social & Behavioral Science Elective	3	CNT 140 The Physical Network	3		
First-Year Seminar Elective	1	CNT 220 Internetworking	5		
Wellness	1	ELEC 125 Introduction to PC Technology	3		
	17	ELEC 126 Installing & Troubleshooting PCs	4		
			34		

\*Students are to select from the following courses: ART 181 or 182; ENGL 206; HUM 101, 115 or 201; MUS 104; PHIL 200; THTR 101; or a foreign language course.

\*\* Select program specific electives from the following: CIS 223; CISE 210; CNT 230, 240, 250, 260, 291, or any CNT200-level course.

Note: Grades of C or higher are required for all computer-related courses (CIS, CISE, CNT, and ELEC)

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part time students can complete this program by taking one or more courses each semester.

<b>Fall Semester I</b>		<b>Spring Semester I</b>		<b>Fall Semester II</b>		<b>Spring Semester II</b>	
CNT 120	3	CNT 125	4	CIS 222	3	CIS 227	3
COMM 101 or 203	3	CNT 140	3	CIS 264	3	CISE 200	3
ELEC 125	3	ELEC 126	4	CNT 220	5	MATH 100	3
ENGL 101 or 110	3	Social/Behavioral Science Elective	3	Program Elective	3	Program Electives	6
Humanities/Arts Elective	3			Wellness	1		
FYS Elective	1						

# COMPUTER NETWORKING TECHNOLOGY, Certificate - 4230

Engineering & Technology Department

CIP Code: 11.0901

The Computer Networking certificate prepares students to work in the field of information technology in roles such as network technician, network administrator, systems administrator and customer support. They are trained to design, install, configure, troubleshoot and maintain networks. This program is also valuable to students who are currently employed within the field and wish to update their computer networking knowledge and skills for advancement. The program includes the study of data communications, telecommunications, Windows and Linux Server administration, information security fundamentals, PC repair, TCP/IP, cabling, terminations, network connections, cable testers, network analyzers, NIC's, hubs, bridges, switches, and routers. Elective courses allow the students to learn specialized topics such as Cisco Routing and Switching, Voice over IP (VoIP), Wireless Networking Administration and Virtualization and Cloud Computing. The program is vendor neutral and coordinates with national standards from the Computing Technology Industry Association (CompTIA). The program may be completed at the Harrisburg Campus by taking some courses through Virtual Learning.

## Career Opportunities

Computer networking encompasses a broad range of jobs and job titles for CNT graduates including network support technicians, network planning analysts, network coordinators, telecommunications specialists, information technology specialists, consultants, market representatives, and related information technologist positions.

(SOC Code: 15-1150 Computer Support Specialists)

Link to Occupational profiles on O\*NET: <http://www.onetcodeconnector.org/>

Application and admission information: <http://www.hacc.edu/NewStudents/Apply/index.cfm>

## Competency Profile

This curriculum is designed to prepare students to:

- List and describe TCP/IP layers, layer interactions, protocols and applications
- Install, connect, and configure network hardware and software to meet common requirements
- Design and Implement an internetwork including IP addressing, subnetting, routing, switching, Virtual Local Area Networks (VLANs), and network design documentation
- Describe the technologies associated with network communications, including signaling, noise, error detection and correction, flow control techniques, data compression, and encoding technology
- Describe technical aspects of Ethernet operation including access technologies, bandwidths, standards, VLANs and electronic connecting devices
- List and describe common Wide Area Network (WAN) technologies, topologies and associated protocols and devices
- Demonstrate proper troubleshooting methods while implementing networks
- Design, install, test, troubleshoot and certify communications wiring systems
- Install, test and troubleshoot PC hardware and windows desktop operating systems
- Demonstrate professional interaction with end users in a technical support environment utilizing troubleshooting, escalation channels, help desk software and communications skills
- Install, maintain, administer and support Linux server operating systems
- Install, maintain, administer and support Windows server operating systems including Active Directory
- List and describe common legal, ethical, and business requirements for securing information
- Utilize security tools and common best practices to design a secure network architecture

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 34)

General Education	Major Requirements	Other Required Courses
	CIS 222 Intro to Windows Servers	3
	CIS 227 Technical Support	3
	CIS 264 Fundamentals of Linux Administration	3
	CISE 200 Information Security Fundamentals	3
	CNT 120 Network Communication Technology I	3
	CNT 125 Network Communication Technology II	4
	CNT 140 The Physical Network	3
	CNT 220 Internetworking	5
	ELEC 125 Introduction to PC Technology	3
	ELEC 126 Installing & Troubleshooting PCs	4
		34

Please see the College's website at <http://www.hacc.edu/ProgramsandCourses/Computer-Networking-Technology-4230.cfm> for the most current Gainful Employment Information.

## CRIMINAL JUSTICE, Associate in Arts Degree - 6050

Social Science Department

The Criminal Justice AA degree is designed for students intending to pursue careers in law enforcement, correctional rehabilitation, juvenile and adult probation and parole, private security and investigations, forensic science, military police, and criminology. This program may require the student to submit to Act 33 Child Abuse and/or Act 34 Pennsylvania State Police Criminal Background Checks prior to enrollment in an internship course. Since the requirements of senior institutions vary widely, it is essential to choose an intended transfer institution as soon as possible and carefully follow the program described in that college's catalog. The complete program is available at the Harrisburg Campus. The General Transfer Track can be completed at the Gettysburg, Lancaster, Lebanon, and York campuses.

### Career or Transfer Opportunities

Career opportunities are dependent upon the curriculum option chosen. Many graduates are engaged in careers as criminal investigators, patrol officers, drug agents, prosecuting attorneys, private criminal and civil attorneys, probation and parole officers, correctional counselors, security managers, private investigators, undercover investigators, crime-scene technicians, forensic scientists, crime-lab experts, and other positions in municipal, state, federal, and private agencies.

### Competency Profile

This curriculum is designed to prepare students to:

- Demonstrate an awareness of professional ethics including ethical and legal entrance requirements to the criminal justice
- Translate observations into writing
- Use technology as a form, or method, to conduct research
- Describe components of the criminal justice system including corrections, courts, law enforcement, and the private sector
- Examine diversity issues as they impact criminal justice
- Demonstrate an awareness of the dynamics of organizational behavior
- Manage and build teams
- Analyze problems and develop solutions

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 61)

General Education	Major Requirements	Other Requirements
ENGL 101 English Composition I	CJ 101 Introduction to Criminal Justice	3
ENGL 102 English Composition II (or)	CJ 108 Criminology	3
ENGL 104 Technical Writing (or)	CJ 212 Criminal Law and Procedure	3
ENGL 106 Business Writing	CJ 240 Ethics and Diverse Cultures	3
COMM 101 Effective Speaking	Law Enforcement or General Transfer Options	<u>23</u>
Humanities & Arts Elective		35
Humanities & Arts Elective (or) Social & Behavioral Science Elective		3
Mathematics Elective		3
Science with a Laboratory Elective		3
Social & Behavioral Science Elective		3
First-Year Seminar Elective		1
Wellness		<u>1</u>
		26

Students select 23 credits from the follow options:

Law Enforcement Option	General Transfer Option
CJ 104 Police Operations	CJ 104 Police Operations (or)
CJ 201 Criminal Investigation	CJ 106 Introduction to Corrections
CJ 203 Criminal Evidence	Transfer Electives (200-level or any transfer elective)
CJ 206 Criminalistics	Transfer Electives (Any transfer elective, including CJ courses)
CJ 208 Intermediate Criminalistics	
CJ 215 CJ Organization & Administration	
CJ 243 International & Domestic Terrorism	

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

### Law Enforcement Option

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
CJ 101	3	CJ 104	3	CJ 206	4	CJ 203	3
CJ 108	3	CJ 201	3	CJ 212	3	CJ 208	4
ENGL 101	3	ENGL 102, 104 or 106	3	CJ 215	3	CJ 240	3
FYS Elective	1	Humanities/Arts Elective	3	COMM 101	3	CJ 243	3
Humanities/Arts Elective or Social/Behavioral Science Elective	3	Social/Behavioral Science Elective	3	Science w/ a Lab Elective	3	Wellness	1
Mathematics Elective	3						

### General Transfer Option

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
CJ 101	3	ENGL 102, 104 or 106	3	CJ 212	3	CJ 104 or 106	3
CJ 108	3	Humanities/Arts Elective	3	COMM 101	3	CJ 240	3
ENGL 101	3	Social/Behavioral Science Elective	3	Humanities/Arts Elective or Social/Science Behavioral Elective	3	Transfer Electives*	10
FYS Elective	1	Transfer Electives*	6	Science w/ a Lab Elective	3		
Mathematics Elective	3			Transfer Electives*	4		
Wellness	1						

*\*In the 20-credits of transfer electives, 12-credits are to be of any 200-level CJ course or any transfer elective. The remaining 8-credits are to be transfer electives.*

# CRIMINAL JUSTICE (PASSHE), Associate in Arts Degree - 6051

Social Science Department

The Criminal Justice (PASSHE) AA transfer degree is designed to meet the curricular needs of students wishing to transfer to one of the Pennsylvania State System of Higher Education (PASSHE) schools. This transfer degree is also structured for students intending to pursue careers in law enforcement, correctional rehabilitation, juvenile and adult probation and parole, private security and investigations, forensic science, military police, and criminology. This program may require the student to submit to Act 33 Child Abuse and/or Act 34 Pennsylvania State Police Criminal Background Checks prior to enrollment in an internship course. The complete program is available at the Gettysburg, Harrisburg, Lancaster, and York campuses. Students may also complete this program at the Lebanon Campus by taking some courses through Virtual Learning.

## Career or Transfer Opportunities

Many graduates are engaged in careers as criminal investigators, patrol officers, drug agents, prosecuting attorneys, private criminal and civil attorneys, probation and parole officers, correctional counselors, security managers, private investigators, undercover investigators, crime-scene technicians, forensic scientists, crime-lab experts, and other positions in municipal, state, federal, and private agencies.

## Competency Profile

This curriculum is designed to prepare students to:

- Demonstrate an awareness of professional ethics including ethical and legal entrance requirements to the criminal justice
- Translate observations into writing
- Use technology as a form, or method, to conduct research
- Describe components of the criminal justice system including corrections, courts, law enforcement, and the private sector
- Describe the major theoretical explanations of crime and delinquency
- Examine diversity issues as they impact criminal justice
- Demonstrate an awareness of the dynamics of organizational behavior
- Manage and build teams
- Analyze problems and develop solutions

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 60)

General Education		Major Requirements		Other Required Courses
ENGL 101 English Composition I	3	CJ 101 Introduction to Criminal Justice	3	
ENGL 102 English Composition II (or)	3	CJ 104 Police Operations	3	
ENGL 104 Technical Writing (or)	(3)	CJ 106 Introduction to Corrections	3	
ENGL 106 Business Writing	(3)	CJ 108 Criminology	3	
COMM 101 Effective Speaking	3	CJ 211 Juvenile Justice	3	
Humanities & Arts Elective	3	CJ 212 Criminal Law and Procedure	3	
Humanities & Arts Elective (or) Social & Behavioral Science Elective	3	CJ 240 Ethics and Diverse Cultures	3	
Mathematics Elective	3	*Transfer Electives	<u>13</u>	
Science with a Laboratory Elective	3		34	
Social & Behavioral Science Elective	3			
First-Year Seminar Elective	1			
Wellness	<u>1</u>			
	26			

\*Students are to select courses appropriate for the intended transfer institution.

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
CJ 101	3	CJ 104	3	CJ 211	3	CJ 240	3
CJ 108	3	CJ 106	3	CJ 212	3	Humanities/Arts Elective or Social/Behavioral Science Elective	3
ENGL 101	3	ENGL 102, 104 or 106	3	COMM 101	3	Transfer Electives	9
FYS Elective	1	Humanities/Arts Elective	3	Science w/ a Lab Elective	3		
Mathematics Elective	3	Social/Behavioral Science Elective	3	Transfer Electives	4		
Wellness	1						

# CULINARY ARTS, Associate in Applied Science Degree - 1586

Business Studies Department

The Culinary Arts AAS program is designed to lead directly to employment as it provides students with instruction in food preparation, production and service in the classroom and in on-campus labs. Students gain supervised concentrated food preparation and production industry experience in multiple on and off campus commercial food and beverage operations that are open to the public. This degree is accredited by the American Culinary Federation Education Foundation (ACFEF). Graduates with an ACF membership are awarded Certified Culinarian (C.C.). The complete program is only available at the Harrisburg Campus. All classes are available during the daytime. Some evening classes are available on a rotating basis.

## Career Opportunities

Graduates obtain positions as chef, sous chef, and food production supervisor in restaurants, catering companies, hotels, resorts, or food service contract companies.

## Competency Profile

This curriculum is designed to prepare students to:

- Apply industry sanitation and safety procedures
- Demonstrate foundational cooking techniques and knife skills
- Compose a complete meal including culinary and bakery items using standardized recipes
- Exhibit management skills in professionalism, employee relations, food and beverage service, menu design, food purchasing, inventory, and cost control
- Create working recipes based on developed flavor profiles, food costs, and nutritional values
- Demonstrate leadership and industry experience needed to be successful in a food and beverage operation

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 70)

General Education		Major Requirements		Other Required Courses	
ENGL 110 Foundations of Professional Writing	3	CULI 100 World of Wine	1	CIS 105 Intro to Software for Business	3
COMM 101 Effective Speaking (or)	3	CULI 102 Culinary Math	2		
COMM 203 Interpersonal Communication	(3)	CULI 113 Sanitation & Safety	2		
Humanities & Arts Elective	3	CULI 133 Culinary Arts I*	5		
Mathematics or Science Elective	3	CULI 143 Culinary Arts II*	5		
Social & Behavioral Sciences Elective	3	CULI 153 Culinary Arts III*	5		
First-Year-Seminar Elective	1	CULI 205 Restaurant Operations I*	2		
Wellness	1	CULI 206 Restaurant Operations II*	2		
	17	CULI 207 Restaurant Operations III*	2		
		CULI 291 Culinary Arts Practicum	3		
		HTMT 101 Introduction to Hospitality Industry	3		
		HTMT 104 Nutrition for Food Service	3		
		HTMT 110 Menu Design & Marketing	3		
		HTMT 122 Food Purchasing, Receiving, & Storing	3		
		HTMT 125 Dining Room Management	3		
		HTMT 231 Cost Control: Food & Labor	3		
		HTMT 251 Hospitality Supervision	3		
			<u>3</u>		
			50		

\*Indicates those courses that require a grade of C or higher

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students can complete this program by taking one or more courses each semester.

Fall Semester I		Spring Semester I		Summer I	
CULI 102	2	CULI 143	5	CULI 153	5
CULI 113	2	CULI 205	2	CULI 206	2
CULI 133	5	ENGL 110	3		
FYS Elective	1	HTMT 125	3		
HTMT 101	3	Wellness	1		
Fall Semester II		Spring Semester II		Summer II	
CIS 105	3	CULI 291	3	COMM 101 or 203	3
CULI 100	1	Humanities/Arts Elective	3	Math/Science Elective	3
CULI 207	2	HTMT 110	3		
HTMT 104	3	HTMT 122	3		
HTMT 231	3	HTMT 251	3		
Social/Behavioral Science Elective	3				

# CULINARY ARTS CATERING, Certificate - 1261

Business Studies Department  
CIP Code: 12.0503

The Culinary Arts Catering certificate is designed to lead directly to employment as it provides students with instruction in food preparation, catering principles, management skills, and service in the classroom and in on-campus labs. Students gain supervised industry experience at multiple-off campus commercial food and beverage operations that are open to the public that involve both production and service rotations. The Culinary Arts Certificate is accredited by the Accrediting Commission of the American Culinary Federation Education Foundation (ACFEF). Graduates with an ACF membership are awarded Certified Culinarian (C.C.). The complete program is only available at the Harrisburg Campus. All classes are available during the daytime. Some evening classes are available on a rotating basis.

## Career Opportunities

Job opportunities include positions as caterers, cooks in restaurants, institutions and cafeterias; bakers; and food preparation workers and servers. (SOC Code: 35-2014 Cooks, Restaurant)

Link to Occupational profiles on O\*NET: <http://www.onetcodeconnector.org/>

Application and admission information: <http://www.hacc.edu/NewStudents/Apply/index.cfm>

## Competency Profile

This curriculum is designed to prepare students to:

- Apply industry sanitation and safety procedures
- Demonstrate foundational cooking techniques and knife skills
- Compose a complete meal including culinary and bakery items using standardized recipes
- Exhibit management skills in professionalism, employee relations, food and beverage service, catering principles, menu design, food purchasing, and inventory
- Create working recipes based on developed flavor profiles, food costs, and nutritional values

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 41)

### General Education

### Major Requirements

CULI 100 World of Wine	1
CULI 102 Culinary Math	2
CULI 106 Professional Bartending	1
CULI 113 Sanitation & Safety	2
CULI 123 Catering: Principles, Garnish, Hors d'oeuvre	3
CULI 133 Culinary Arts I*	5
CULI 143 Culinary Arts II*	5
CULI 153 Culinary Arts III*	5
CULI 205 Restaurant Operations I*	2
HTMT 101 Introduction to the Hospitality Industry	3
HTMT 104 Nutrition for Food Service	3
HTMT 122 Food Purchasing, Receiving, & Storing	3
HTMT 251 Hospitality Supervision	3
	<u>38</u>

### Other Required Courses

Program Elective**	3
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\*Students must receive a grade of C or higher in these courses.

\*\*Students are to select from the following: ENTR 101; HTMT 213; MKTG 205; MGMT 221.

Please see the College's website at <http://www.hacc.edu/ProgramsandCourses/Culinary-Arts-Catering-1261.cfm> for the most current Gainful Employment Information.

## DENTAL HYGIENE, Associate in Science Degree - 3416

Health & Public Service Department

The Dental Hygiene AS program educates students, as members of the dental health team, to provide preventive dental services and oral health education to clients. The dental hygienist is qualified by education and licensure to provide patient assessment, including but not limited to, review of health history, recording of vital signs, head, neck, and radiographic examination, oral cancer screening, and dental and periodontal charting. Treatment planning, patient education, the administration of local anesthesia, the removal of deposits and stains from the teeth, and the application of chemotherapeutic agents and placement of dental sealants are also integral parts of dental hygiene education. The program is accredited by the Commission on Dental Accreditation (CoDA). The Commission is a specialized body recognized by the United States Department of Education. The clinical program is only available at the Harrisburg Campus. However, pre-requisite courses to the clinical program may be taken at all of HACC's campuses, as well as through Virtual Learning. Pennsylvania Dental Law #216 states that the State Board of Dentistry may refuse to license a person whom has been convicted of a crime or misdemeanor involving moral turpitude or a felony. The complete program is available at the Harrisburg Campus.

**Selective Program:** Entry into this program is not guaranteed with admission to the College; this is a selective and competitive admission program; specific admissions criteria must be met. Please go to the Health Careers website ([www.hacc.edu/healthcareers](http://www.hacc.edu/healthcareers)), or contact us by email at [start@hacc.edu](mailto:start@hacc.edu) for specific program entry requirements. **Students must be aware that even though the program begins in Fall, they begin classes for this major during the Summer terms.**

### Career Opportunities

Graduates are prepared for employment as dental hygienists to provide preventive dental services and oral health education in private offices and public health clinics.

### Competency Profile

This curriculum is designed to prepare students to:

- Utilize the dental hygiene process of care (assessment, planning, implementation, and evaluation) in the provision of comprehensive treatment to all clients without discrimination
- Demonstrate accountability in dental hygiene practice
- Apply the roles of dental hygiene to various practice settings - demonstrating competence, ethical behaviors, and professionalism
- Participate as an integral member of the dental health team providing expertise in the area of preventive health care
- Perform to the level of competency specified by the faculty, the state board of dental examiners, employers, and those oral health services legally approved for a dental hygienist in the Commonwealth of Pennsylvania, and other states and territories
- Value a commitment to professional organizations and life-long learning

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 80)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	DH 110 Dental Radiology I	3	BIOL 122 Anatomy & Physiology II	4
ENGL 102 English Composition II	3	DH 111 Dental Radiology II	1	NUTR 104 Nutrition	3
COMM 101 Effective Speaking	3	DH 113 Clinical Experience II	2	PSYC 101 General Psychology	3
Humanities & Arts Elective	3	DH 116 Medical/Dental Emergencies & Theory	3		10
Mathematics Elective - MATH 111	3	DH 120 Dental Anatomy	2		
Math or Science Elective - BIOL 221	4	DH 150 Dental Materials	3		
Science w/ a Laboratory Elective - BIOL 121	4	DH 170 Techniques in Pain Control	2		
Social/Behavioral Sciences - SOCI 201	3	DH 180 Head & Neck Anatomy & Histology	3		
First-Year Seminar - DH 101	6	DH 190 Periodontics	3		
Wellness	1	DH 211 Dental Hygiene Theory III	3		
	33	DH 212 Clinical Experience III	2		
		DH 223 Dental Hygiene Theory IV	2		
		DH 224 Clinical Experience IV	2		
		DH 230 Oral Pathology	2		
		DH 235 Community Dental Health Education	2		
		DH 240 Pharmacology	2		
			37		

Note: A grade of C or higher is required for all BIOL and DH courses; ENGL 101 and 102; NUTR 104; COMM 101; PSYC 101; SOCI 201.

### RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Summer I	Fall Semester I	Spring Semester I	Summer II	Fall Semester II	Spring Semester II
BIOL 121	4 BIOL 122	4 COMM 101	3 DH 170	2 DH 211	3 DH 223
BIOL 221	4 DH 101	6 DH 111	1 DH 240	2 DH 212	2 DH 224
ENGL 101	3 DH 110	3 DH 113	2 MATH 111	3 DH 230	2 DH 235
	DH 120	2 DH 116		NUTR 104	3 ENGL 102
	DH 180	3 DH 150		SOCI 201	3 Humanities/Arts Elective
		3 DH 190			3 PSYC 101

## DENTAL ASSISTING, Certificate - 3200

Health & Public Service Department

CIP Code: 51.0601

The Dental Assisting curriculum prepares individuals to assist the dentist in the delivery of dental treatments and to function as an integral member of the dental team while performing chairside and other related office and laboratory procedures. It also designed to prepare students for employment as a dental assistant and to take the Dental Assisting National Board examination in order to achieve the Certified Dental Assistant (CDA) designation. Students are able to recognize the legal provisions that are pertinent to Pennsylvania Dental Law which regulate the functions a dental auxiliary may perform. Only those procedures legally permitted are taught to clinical competence. All other procedures are taught to laboratory competence. Students are able to spend a total of 320-hours working in a variety of dental office settings where they can be exposed to all aspects of the dental practice. To be eligible for the national examination, individuals must graduate from an accredited institution and have a current registration in CPR. The clinical program is only available at the Harrisburg Campus.

*Selective Program:* Entry into this program is not guaranteed with admission to the College; specific admissions criteria must be met. Please see the Health Careers website ([www.hacc.edu/healthcareers](http://www.hacc.edu/healthcareers)), email at [start@hacc.edu](mailto:start@hacc.edu).

### Career Opportunities

Graduates of the program find employment as chairside assistants in a variety of dental offices: examples include, general practice, orthodontics, periodontics, oral and maxillofacial surgery, pediatrics, and endodontics. Graduates may also secure positions in dental insurance, as a dental supply representative, and as a laboratory technician. (SOC Code: 31-9091 Dental Assistants)

Link to Occupational profiles on O\*NET: <http://www.onetcodeconnector.org/>

Application and admission information: <http://www.hacc.edu/NewStudents/Apply/index.cfm>

### Competency Profile

This curriculum is designed to prepare students to:

- Accurately collect diagnostic and treatment data and record the information into a dental chart/record
- Effectively perform infection control and hazard control protocols
- Communicate professionally and effectively with patients, employers and colleagues
- Perform basic chairside skills needed in a general or specialty dental office
- Perform basic supportive, laboratory, and administrative procedures required for various dental environments
- Correctly expose, process, and mount radiographs
- Perform procedures within the legal and ethical frameworks of the dental assisting profession

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 39)

General Education		Major Requirements		Other Required Courses	
COMM 101 Effective Speaking	3	DA 170 Dental Assisting Pre-Clinic	4	BIOL 111 Intro to Human Biology (or)	3
		DA 171 Dental Assistant I	4	BIOL 121 Anatomy & Physiology I	(4)
		DA 172 Dental Materials	4		
		DA 173 Dental Radiology I	4		
		DA 175 Oral Anatomy	3		
		DA 177 Dental Sciences	3		
		DA 178 Dental Clinical Experience	4		
		DA 179 Clinical Dental Assisting	2		
		DA 180 Dental Office Practice	3		
		DA 181 Preventive Dentistry	2		
			<u>33</u>		

*Note: A grade of C or higher is required for BIOL 111 or 121; COMM 101; and all of the DA courses.*

*Graduates of this certificate can then enroll into the 320A – Expanded Function Dental Auxiliary (EFDA) program and complete additional coursework for a Certificate of Completion:*

DA 252 – Expanded Functions I (4 credits)

DA 253 – Expanded Functions II (2-credits)

*Please see the College's website at <http://www.hacc.edu/ProgramsandCourses/Dental-Assisting-3200.cfm> for the most current Gainful Employment Information.*

# DIAGNOSTIC MEDICAL SONOGRAPHY, Associate in Applied Science Degree - 3426

Health & Public Service Department

The Diagnostic Medical Sonography AAS program prepares students as entry-level Diagnostic Medical Sonographers who perform general ultrasound imaging. Students acquire the knowledge and technical expertise required to produce ultrasound images of the human body that are then used by physicians to make a medical diagnoses. This program is offered in cooperation with affiliated hospitals and medical imaging centers; the College provides classroom and lab instruction, while the hospitals and imaging centers provide the clinical instruction. The program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), 25400 U.S. Highway 19 North, Suite 158, Clearwater FL 33756, (727) 210-2350, [www.caahep.org](http://www.caahep.org), upon the recommendation of the Joint Review Committee on Education in Diagnostic Medical Sonography (JRC-DMS), 6021 University Boulevard, Suite #500, Ellicott City, MD 21043, (443) 973-3251, [www.jrcdms.org](http://www.jrcdms.org). The complete program is only available at the Harrisburg Campus.

**Selective Program:** Entry into this program is not guaranteed with admission to the College; this is a selective and competitive admission program, specific admissions criteria must be met. **Students must be aware that even though the program begins in the Fall semester, coursework can be completed during the preceding Summer semester.** Please go to the Health Careers website ([www.hacc.edu/healthcareers](http://www.hacc.edu/healthcareers)), or email at [start@hacc.edu](mailto:start@hacc.edu) for specific program entry requirements

The following requirements must be completed (at the student's expense) after being selected for, but prior to starting the clinical portion of the program and after the first year in the program. Requirements include physical examination and immunizations, background checks, drug and alcohol screens and CPR certification. The student should consider these factors before enrolling. If the student has any questions regarding this, he or she should contact the program director.

### Career Opportunities

Graduates find employment as sonographers in hospital ultrasound departments and independent medical imaging centers.

### Competency Profile

This curriculum is designed to prepare students to:

- Perform as an entry-level general sonographer in the cognitive (knowledge), psychomotor (skills) and affective (behavior) learning domains
- Utilize oral and written communication to interact effectively with physicians, healthcare professionals, and patients
- Demonstrate quality patient care, sonographic exam process, and professionalism
- Demonstrate knowledge and understanding of anatomy, cross-sectional anatomy, physiology, pathology, and pathophysiology of the abdomen, superficial structures, non-cardiac chest, and the gravid and nongravid pelvis
- Demonstrate knowledge and understanding of acoustic physics, Doppler ultrasound and ultrasound instrumentation and the probability of biological effects
- Perform sonographic examinations of the abdomen, superficial structures, non-cardiac chest and the gravid and nongravid pelvis according to protocol guidelines utilizing real time equipment with both trans abdominal and endocavity transducers
- Recognize and identify the sonographic appearance of normal and abnormal processes of the abdomen, superficial structures, non-cardiac chest, and the gravid and nongravid pelvis

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 69)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	DMS 105 Introduction to Health Care	4	BIOL 111 Introduction to Human Biology	3
COMM 101 Effective Speaking (or)	3	DMS 110 Introduction to DMS	4	PHYS 161 Physics for Imaging	3
COMM 203 Interpersonal Communication	(3)	DMS 115 Clinical Experience I	2		6
Humanities & Arts Electives	3	DMS 120 DMS Lab I	1		
Math or Science Elective - MATH 103	3	DMS 125 Clinical Experience II	3		
Social & Behavioral Science Elective	3	DMS 130 Abdominal Sonography	4		
First-Year Seminar Elective	1	DMS 140 DMS Lab II	1		
Wellness	1	DMS 150 OB/GYN Sonography I	3		
	17	DMS 170 Acoustical Principles I	4		
		DMS 180 High Resolution Sonography I	1		
		DMS 182 High Resolution Sonography II	1		
		DMS 210 Vascular Sonography I	1		
		DMS 212 Vascular Sonography II	2		
		DMS 215 Clinical Experience III	4		
		DMS 220 DMS Lab III	1		
		DMS 225 Clinical Experience IV	4		
		DMS 250 OB/GYN Sonography II	3		
		DMS 270 Acoustical Principles II	2		
		DMS 274 DMS Topics	1		
			46		

Note: A grade of C or higher is required for all BIOL; DMS; MATH; and PHYS courses; ENGL 101 and COMM 101 or 203.

**RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS**

Summer I		Fall Semester I		Spring Semester I		Summer II		Fall Semester II		Spring Semester II	
BIOL 111	3	COMM 101 or 203	3	DMS 115	2	DMS 125	3	DMS 215	4	DMS 182	1
ENGL 101	3	DMS 105	4	DMS 120	1	DMS 140	1	DMS 220	1	DMS 212	2
MATH 103	3	DMS 110	4	DMS 130	4	DMS 180	1	DMS 250	3	DMS 225	4
		FYS Elective	1	DMS 150	3	DMS 210	1	DMS 270	2	DMS 274	1
		PHYS 161	3	DMS 170	4			Humanities/Arts Elective	3	Social/Behavioral Science Elective	3
										Wellness	1

## EARLY CHILDHOOD - ELEMENTARY EDUCATION, Associate in Arts Degree - 5070

Health & Public Service Department

The Early Childhood-Elementary Education AA program prepares students to transfer to 4-year colleges/universities in order to obtain teaching certification in PreK-4<sup>th</sup> Grade. This curriculum provide students the opportunity to spend a minimum of 66-hours of field experience working in a variety of childcare and educational settings.

The following must be completed (at the student's expense) prior to enrolling in EDUC 110: FBI Clearance, ACT 151: PA Child Abuse History Clearance, ACT 34: Request for Criminal Record Check - PA State Police and TB testing. The student should consider these factors before enrolling. If the student has any questions regarding this, he or she should contact the program director.

Additionally, students intending to transfer must have a 3.0 GPA in order to enter the professional-level course work, leading to teacher certification, at baccalaureate degree-granting institutions. Additional requirements are needed for transfer, it is recommended that students speak to their advisor to learn more about this information. Since the requirements of 4-year colleges/universities varies widely, it is essential to choose an intended transfer institution as soon as possible and carefully follow the program described in that college's catalog. The complete program is available at the Gettysburg, Harrisburg, Lancaster, and York campuses.

### Transfer Opportunities

This transfer curriculum is provided as a guide for students planning to transfer to a baccalaureate degree granting institution for teaching certification. Program-to-Program articulation agreements are in place with the State System of Higher Education Schools, which allows students to transfer 30-credits of general education courses.

### Competency Profile

In conjunction with National Association for the Education of Young Children's (NAEYC) Standards, this curriculum is designed to prepare students to:

- Apply the theories of child development in order to promote healthy and challenging learning environments
- Observe and assess children's development and document their learning in order to develop appropriate curriculum and promote positive outcomes for each child
- Use content knowledge to build meaningful curriculum
- Use effective strategies to implement developmentally-appropriate teaching and learning
- Support and involve families and communities in their children's development and learning
- Uphold national standards for professionalism and ethics as well as participate in continuous professional growth
- Use legal and ethical standards to locate professional literature in print and/or electronic format in order to make research-based decisions that inform teaching practices
- Prepare and maintain an electronic portfolio that documents personal growth as well as scholastic and professional achievement throughout the course of the teacher preparation program from entry point class to job search

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 62)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	EDUC 120 Observation & Assessment of the Young Child	3	MATH 114 Principles of Math for	
ENGL 102 English Composition II	3	EDUC 140 Integrating the Arts & Play as Educative Process	3	Elementary Teachers II	3
COMM 101 Effective Speaking	3	EDUC 180 Diversity & Partnerships in Family, Schools and Community	3	PSYC 212 Child Growth &	
Humanities & Arts Elective*	3	EDUC 210 Exceptional Learners	3	Development	3
Humanities & Arts Elective <b>or</b>					
Social & Behavioral Science Elective	3	EDUC 220 Mathematics for the Young Learner	3		6
Mathematics Elective - MATH 113	3	EDUC 260 Social Studies for the Young Learner	3		
Science w/ a Laboratory Elective	3	EDUC 261 Integrating Curriculum in Early Childhood Classrooms	3		
Social & Behavioral Science Elective -					
PSYC 101	3	EDUC 270 Foundations of Early Literacy	3		
First-Year Seminar Elective - EDUC 110	4	EDUC 290 Principles of Classroom Instruction	3		
Wellness	1		27		
	29				

\*Students select from the following courses: ENGL 201, 202, 203, 204 or 207.

### RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students can complete this program by taking one or more courses each semester.

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
COMM 101	3	EDUC 120	3	EDUC 210	3	EDUC 180	3
EDUC 110	4	EDUC 140	3	EDUC 260	3	EDUC 261	3
ENGL 101	3	EDUC 220	3	EDUC 270	3	EDUC 290	3
PSYC 101	3	ENGL 102	3	Science w/ a Lab	3	Humanities/Arts Elective	3
MATH 113	3	PSYC 212	3	Humanities/Arts <b>or</b> Social/Behavioral Science	3	MATH 114	3
				Wellness	1		

## EARLY CARE AND EDUCATION, Associate in Applied Science Degree - 5506

Health & Public Service Department

Graduates of the Early Care and Education AAS program are prepared to enter the workforce to care for and educate children ages birth – nine years with in a variety of inclusive care and education programs. The following must be completed (at the student’s expense) prior to enrolling in EDUC 110 or EDUC 111. They are also requirements for continuation in the program and field placements. Clearances will need to be updated every year per school district requirements. Requirements include three clearances (FBI Clearance, ACT 151: PA Child Abuse History Clearance, ACT 34: Request for Criminal Record Check - PA State Police) and TB testing. The student should consider these factors before enrolling. If the student has any questions regarding this, he or she should contact the program director. Students looking to obtain a Pennsylvania teaching certificate must first obtain a baccalaureate degree in order to become eligible to pursue that certification. The complete program is available at the Harrisburg, Lancaster, and York campuses.

### Career Opportunities

Graduates are prepared to enter the childcare workforce on Level V of the Office of Child Development and Early Learning (OCDEL) career lattice.

### Competency Profile

In conjunction with National Association for the Education of Young Children’s (NAEYC) standards, this curriculum is designed to prepare students to:

- Use the theories and principles of child development in order to promote healthy and challenging learning environments
- Observe and assess children’s development and document their learning in order to develop appropriate curriculum and promote positive outcomes for each child
- Use content knowledge to build meaningful curriculum
- Use effective strategies to implement developmentally-appropriate teaching and learning
- Support and involve families and communities in their children’s development and learning
- Practice the national standards for professionalism and ethics as well as participate in continuous professional growth
- Use legal and ethical standards to locate professional literature in print and/or electronic format in order to make research-based decisions that inform teaching practices
- Prepare and maintain an electronic portfolio that documents personal growth as well as scholastic and professional achievement throughout the course of the teaching preparation program from entry-point class to job search
- Appreciate accomplishments in the arts and sciences

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 60)

General Education		Major Requirements		Other Required Courses
ENGL 101 English Composition I	3	EDUC 120 Observation & Assessment of Young Children	3	
COMM 101 Effective Speaking	3	EDUC 135 Health, Safety & Nutrition	3	
Humanities & Arts Elective	3	EDUC 140 Integrating the Arts & Play as Educative Process	3	
Mathematics or Science Elective	3	EDUC 145 Infant & Toddler Care & Education	3	
Social & Behavioral Science Elective - PSYC 101	3	EDUC 180 Diversity & Partnerships in Family, Schools & Community	3	
First-Year-Seminar Elective - EDUC 111	4	EDUC 185 Development & Behavior in Children	3	
Wellness	1	EDUC 211 Early Intervention: Exceptional Children	3	
	20	EDUC 220 Mathematics for the Young Learner	3	
		EDUC 235 STEM for the Young Learner	3	
		EDUC 260 Social Studies for the Young Learner	3	
		EDUC 261 Integrating Curriculum in Early Childhood Classrooms	3	
		EDUC 270 Foundations of Early Literacy	3	
		EDUC 291 Early Care & Education Practicum	4	
			40	

### RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students can complete this program by taking one or more courses each semester.

Fall Semester I	Spring Semester I	Fall Semester II	Spring Semester II
EDUC 111 4	EDUC 120 3	EDUC 180 3	COMM 101 3
EDUC 135 3	EDUC 145 3	EDUC 211 3	EDUC 261 3
EDUC 140 3	EDUC 220 3	EDUC 235 3	EDUC 291 4
EDUC 185 3	EDUC 260 3	EDUC 270 3	Math/Science Elective 3
PSYC 101 3	Humanities/Arts Elective 3	ENGL 101 3	
Wellness 1			

# EARLY CHILDHOOD CARE AND EDUCATION, Certificate - 5170

Health & Public Service Department

CIP Code: 13.1210

The Early Childhood Care and Education certificate prepares graduates to enter the workforce at the career lattice level IV as determined by the Office of Child Development and Early Learning (OCDEL) This lattice encourages practitioners to obtain credentials and degrees, as well as plan their educational pathway. This curriculum provide students the opportunity to spend approximately 46-hours of field experience working in a variety of childcare settings. This certificate also provides those students interested in obtaining the Infant and Toddler credential may select specific courses within the open electives that will aid them in obtaining this goal.

The following must be completed (at the student's expense) prior to enrolling in EDUC 111. FBI Clearance, ACT 151: PA Child Abuse History Clearance, ACT 34: Request for Criminal Record Check - PA State Police and TB testing. The student should consider these factors before enrolling. If the student has any questions regarding this, he or she should contact the program director. The complete program is available at the Harrisburg, Lancaster, and York campuses.

### Career Opportunities

As defined by the OCDEL career lattice at Level IV, graduates can obtain employment in Child Care/School Age Care Programs as Aides/Family Child Care Providers, Assistant Teachers, or Assistant Group Supervisors; in Early Head Start/Head Start Programs as Assistant Teachers/Aides, or Teacher/Home Visitors; in Public School Districts as Assistant Teachers (Para-professional); or in Private Academic Schools as Aides. (SOC Code: 25-2011 Preschool Teachers)

Link to Occupational profiles on O\*NET: <http://www.onetcodeconnector.org/>

Application and admission information: <http://www.hacc.edu/NewStudents/Apply/index.cfm>

### Competency Profile

In conjunction with National Association for the Education of Young Children's (NAEYC) Standards, this curriculum is designed to prepare students to:

- Apply the theories of child development in order to promote healthy and challenging learning environments
- Observe and assess children's development and document their learning in order to assist in the delivery of appropriate curriculum and promote positive outcomes for each child
- Use content knowledge to recognize meaningful curriculum
- Use effective strategies to implement developmentally-appropriate teaching and learning
- Assist the lead teacher in supporting and involving families and communities in their child's development and learning
- Uphold national standards for professionalism and ethics as well as participate in continuous professional growth

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 31)

General Education	Major Requirements	Other Required Courses
	EDUC 111 Fundamentals of Early Childhood Care & Education	4
	EDUC 120 Observation & Assessment of the Young Child	3
	EDUC 135 Health, Safety & Nutrition in ECE	3
	EDUC 140 Integrating the Arts & Play as Educative Process	3
	EDUC 145 Infant & Toddler Care & Education	3
	EDUC 185 Development & Behavior in Children	3
	EDUC 211 Early Childhood Inclusion	3
	EDUC 220 Mathematics for the Young Learner	3
	*Open Electives	6
		31

\*Choose from the following courses: EDUC 113, 117, 131, 175, 260, 270, 295, and 296.

Please see the College's website at <http://www.hacc.edu/ProgramsandCourses/Early-Childhood-Care-and-Education-5170.cfm> for the most current Gainful Employment Information.

# ELECTRICAL TECHNOLOGY, Associate in Applied Science Degree - 4750

Engineering & Technology Department

The Electrical Technology AAS Degree prepares students with the knowledge and skills needed for employment and advancement in the electrical field. Emphasis is placed on residential and commercial construction and maintenance applications. Curriculum coursework covers basic electrical theory, residential and commercial wiring, safety, the National Electrical Code, and blueprint reading. Students gain hands-on experience through laboratory exercises in the operation of electrical systems through fusion-splicing, mock wiring of commercial and residential systems. The complete program is available at the Harrisburg (Mid-Town location) and York campuses. Students can attend full time or part time.

## Career Opportunities

Graduates find employment as general electricians, residential service technicians, commercial service technicians, electrical-equipment repair technicians, electrical system installers, maintenance technicians, work-team supervisors, electrical estimators, electrical system designers, and renewable energy technicians.

## Competency Profile

This curriculum is designed to prepare students to:

- Demonstrate a variety of technical skills in the electrical field
- Recognize and practice safe and healthy work procedures
- Perform basic electrical mathematical calculations
- Properly and safely handle electrical tools and materials
- Read and interpret blueprints necessary for specified installations
- Interpret the National Electric Code and use it in specific applications
- Demonstrate procedures used in residential, commercial, and industrial electrical construction
- Wire complex motor and control circuits
- Install, maintain, and repair automated electrical systems
- Solve complex problems of circuit design and analysis
- Troubleshoot equipment and demonstrate proper repair procedures

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 60)

General Education		Major Requirements		Other Required Courses	
ENGL 110 Foundations of Professional Writing	3	ELOC 153 Fundamentals of Electricity	4	**Program Electives	13
COMM 101 Effective Speaking (or)	3	ELOC 157 Electrical Wiring I	4		
COMM 203 Interpersonal Communication	(3)	ELOC 163 Electrical Wiring II	4		
Humanities & Arts Elective	3	ELOC 169 Low Voltage Cabling	3		
Mathematics or Science Elective	3	ELOC 171 Electrical Service	2		
Social & Behavioral Sciences Elective*	3	ELOC 172 National Electrical Code	2		
First-Year Seminar Elective	1	ELOC 175 Electrical System Troubleshooting	3		
Wellness	1	GTEC 101 Safety: OSHA-30 & NFPA-70E	3		
	17	GTEC 105 Customer Service	1		
		IA 201 Motors and Controls	4		
			30		

\*Students select from the following: ANTH 101, 205; COMM 253; GEOG 201, 230; HIST 102; PSYC 229; SOCI 201, 202, 203 or 205.

\*\*Students select two courses from the following disciplines: ELOC, GTEC, HVAC, HBR, IA, WELD or INTN 291.

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part time students can complete this program by taking one or more courses each semester.

Fall Semester I	Spring Semester I	Fall Semester II	Spring Semester II
ELOC 153	4 ELOC 157	4 COMM 101 or 203	3 ELOC 175
ELOC 172	2 ELOC 163	4 ELOC 171	2 IA 201
ENGL110	3 ELOC 169	3 Humanities/Arts Elective	3 Math/Science Elective
FYS Elective	1 Program Electives	5 Program Electives	8 Social/Behavioral Science Elective
GTEC 101	3		Wellness
GTEC 105	1		1

# ELECTRICAL TECHNOLOGY, Certificate - 4370

Engineering & Technology Department

CIP Code: 46.0302

The Electrical Technology Certificate provides students with the fundamental knowledge and skills needed within electrical field. Residential, commercial construction, and maintenance applications and presented. Curricular coursework covers basic electrical theory, residential and commercial wiring, safety, the National Electrical Code, and blueprint reading. Students are exposed to the fundamentals of electrical systems through hands-on laboratory exercises that involve mock wiring of commercial and residential systems. The complete program is at the Harrisburg (Mid-Town locations) and York campuses. Students can attend full time or part time.

## Career Opportunities

Graduates find employment as general electricians, electrician apprentices, residential electricians, electrical service technicians, electric linemen, electric installers, and industrial maintenance technicians. (SOC Code: 47-2111 Electricians)

Link to Occupational profiles on O\*NET: <http://www.onetcodeconnector.org/>

Application and admission information: <http://www.hacc.edu/NewStudents/Apply/index.cfm>

## Competency Profile

This curriculum is designed to prepare students to:

- Demonstrate a variety of technical skills in the electrical field
- Recognize and practice safe and healthy work procedures
- Perform basic electrical mathematical calculations
- Properly and safely handle electrical tools and materials
- Read and interpret blueprints necessary for specified installations
- Interpret the National Electric Code and use it in specific applications
- Demonstrate fundamental procedures of an electrical system used in residential, commercial, and industrial construction
- Solve complex problems of circuit design and analysis

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 32)

### General Education

### Major Requirements

### Other Required Courses

ELOC 153 Fundamentals of Electricity	4
ELOC 157 Electrical Wiring I	4
ELOC 163 Electrical Wiring II	4
ELOC 169 Low Voltage Wiring	3
ELOC 171 Electrical Service	2
ELOC 172 National Electrical Code	2
ELOC 175 Electrical System Troubleshooting	3
GTEC 101 Safety: OSHA -30 & NFPA-70E	3
GTEC 110 Construction Print Reading	3
IA 201 Motors and Controls	4
	32

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part time students can complete this program by taking one or more courses each semester.

Fall Semester I		Spring Semester I	
ELOC 153	4	ELOC 169	3
ELOC 157	4	ELOC 171	2
ELOC 163	4	ELOC 172	2
GTEC 110	3	ELOC 175	3
		GTEC 101	3
		IA 201	4

Please see the College's website at <http://www.hacc.edu/ProgramsandCourses/Electrical-Technology-4370.cfm> for the most current Gainful Employment Information.

# ELECTRONIC ENGINEERING TECHNOLOGY, Associate in Science Degree - 4580

Engineering & Technology Department

The Electronic Engineering Technology AS prepares students to enter the job market as electronic or electro-mechanical technicians working with electrical or electronic systems, digital systems, and computer equipment. Students are able to complete the design and construction of many different electronic circuits as part of their laboratory work in each of the electronics courses. In addition, many students are able to work on projects in robotics, personal computer rebuilding, and various circuit designs as on-going projects over the course of several semesters. The complete program is only available at the Harrisburg Campus.

## Career Opportunities

Graduates of the program enter the electrical or electronic job market as high-level service technicians. They assist the engineering staff in the design, construction, and testing of prototype equipment manufactured in today's advanced technologies.

## Competency Profile

This curriculum is designed to prepare students to:

- Assist in the design and development of new devices
- Install, operate, service, and maintain complex electrical and electronic equipment
- Prepare reports, specifications, and manuals under the direction of scientists and engineers
- Identify global and ethical engineering issues

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 64)

General Education	Major Requirements	Other Required Courses
ENGL 101 English Composition I	CAD 154 Computer Aided Drafting & Design	
ENGL 104 Technical Writing	ELEC 100 Fundamentals of Electricity and Electronics	
COMM 101 Effective Speaking	ELEC 101 Equipment Utilization	
Humanities & Arts Elective	ELEC 106 Fundamentals of Electronics	
Mathematics Elective - MATH 103	ELEC 108 Applied Digital Electronics	
Mathematics or Science Elective - MATH 104	ELEC 111 AC/DC Circuits I	
Science w/ a Laboratory Elective (Req: PHYS 201)	ELEC 125 Introduction to PC Technology	
Social & Behavioral Science Elective	ELEC 126 Installing and Troubleshooting PCs	
First-Year Seminar Elective - ENGR 102	ELEC 203 Electronic Circuit Design	
Wellness	ELEC 211 AC/DC Circuits II	
	ELEC 213 Digital Electronics	
	IA 208 PLCs and Automation	
		37

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students can complete this program by taking one or more courses each semester.

Fall Semester I	Spring Semester I	Summer	Fall Semester II	Spring Semester II
CAD 154	ELEC 111	Humanities/Arts Elective	ELEC 106	COMM 101
ELEC 100	ELEC 126	Social/Behavioral Science Elective	ELEC 108	ELEC 203
ELEC 101	ENGL 104		ELEC 211	ELEC 213
ELEC 125	MATH 104		Science w/ a Lab Elective	IA 208
ENGL 101				Wellness
ENGR 102				
MATH 103				

## SUGGESTED ADDITIONAL SEQUENCE FOR STUDENTS TRANSFERRING TO A BSEET PROGRAM

Fall Semester III for transfer students	Spring Semester III for transfer students
CHEM 101 (Inorganic Chemistry)	Transfer Electives*
Transfer Elective*	MATH 121 (Calculus I)
MATH 119 (Pre-Calculus, 12 Week Session)	PHYS 202 (General Physics II)
PHYS 201 (General Physics I)	Wellness (PSU Only)
Wellness (PSU Only)	Total Credits
Total Credits	

\*Students are to select courses for their intended transfer institution.

## ELECTRONIC TECHNOLOGY, Certificate - 4310

Engineering & Technology Department

CIP Code: 15.0303

This program is designed primarily for students who are working in electronics and wish to advance in their careers. This program permits students to have an option of choosing an analog or a digital specialization for their certificate. This program is only available at the Harrisburg Campus.

### Career Opportunities

Graduates of the program enter the job market at an introductory level in a variety of electronic-related industries as service technicians or technical information specialists. They work in a laboratory or customer-oriented environment. (SOC Code 17-3024 Electro-Mechanical Technicians)

Link to occupational profiles on O\*NET: <http://www.onetcodeconnector.org/>

Application and admission information: <http://www.hacc.edu/NewStudents/Apply/index.cfm>

### Competency Profile

This curriculum is designed to prepare students to:

- Construct electronic prototype circuits
- Test electronic circuits with modern laboratory equipment
- Install, operate, service, and troubleshoot complex electrical and electronic equipment
- Prepare reports under the supervision of engineers

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 32)

#### General Education

#### Major Requirements

#### Other Required Courses

ELEC 100 Fundamentals of Electricity and Electronics	1	MATH 103 College Algebra	3
ELEC 101 Equipment Utilization	1	MATH 104 Trigonometry	<u>3</u>
ELEC 106 Fundamentals of Electronics	4		6
ELEC 108 Applied Digital Electronics	3		
ELEC 111 AC/DC Circuits I	4		
ELEC 125 Introduction to PC Technology	3		
ELEC 126 Installing and Troubleshooting PCs (or)	4		
ELEC 211 AC/DC Circuits II	(4)		
ELEC 213 Digital Electronics (or)	4		
ELEC 203 Electronic Circuit Design	(4)		
ENGR 102 Engineering & Engineering-Tech Orientation	<u>2</u>		
	26		

Please see the College's website at <http://www.hacc.edu/ProgramsandCourses/Electronic-Technology-4310.cfm> for the most current Gainful Employment Information.

# ENGINEERING, Associate in Science Degree - 4120

Engineering & Technology Department

The Engineering AS program prepares students to continue their study towards a baccalaureate degree in engineering at a four-year institution. This curriculum places emphasis on mathematics and its application in the sciences; only students of high academic potential who have demonstrated excellence in mathematics should consider this major. Since the requirements of senior institutions vary widely, it is essential to choose an intended transfer institution as soon as possible and carefully follow the program described in that college's catalog. The complete program is available at the Harrisburg and Lancaster campuses.

### Transfer Opportunities

This transfer curriculum is provided as a guide for students planning to transfer to a baccalaureate degree granting institution. Engineers are employed in research and development, design, manufacturing, consulting, teaching, and administration in such areas as aerospace, agriculture, ceramics, chemicals, electrical and mechanical devices, metallurgy, and mining.

### Competency Profile

This curriculum is designed to prepare students to:

- Identify personal transfer plans
- Effectively operate a solid modeling system
- Examine engineering disciplines
- Analyze static structures using calculus
- Solve engineering problems
- Analyze dynamic problems using calculus
- Identify global and ethical engineering issues

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 60)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	CAD 154 Computer-Aided Drafting & Design	3	Transfer Electives*	9
ENGL 104 Technical Writing	3	ENGR 213 Statics	3		
COMM 101 Effective Speaking	3	ENGR 214 Dynamics	3		
Humanities & Arts Elective	3	MATH 221 Calculus III <b>or</b>	4		
Mathematics Elective - MATH 121	4	MATH 222 Differential Equations	(4)		
Mathematics <b>or</b> Science Elective - MATH 122	4	PHYS 211 Physics for Engineers & Scientists I	4		
Science w/ a Laboratory Elective - CHEM 101	4	PHYS 212 Physics for Engineers & Scientists II	4		
Social & Behavioral Science Elective	3		21		
First-Year Seminar Elective - ENGR 102	2				
Wellness	1				
	30				

\*Select transfer electives from the following: BIOL 101, 102; CHEM 102, 203; CAD 156, 164; CPS 115, 121, 135, 161; CVTE 103; ELEC 100, 101, 108, 125, 126, 213; ENGR 291; GEOL 101, 101H; GTEC 202; IA 205, 208; MATH 125, 202, 220, 221, 222; MDRF 101, 103; PHYS 215; SET 202.

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students can complete this program by taking one or more courses each semester.

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
CAD 154	3	COMM 101	3	ENGR 213	3	ENGR 214	3
CHEM 101	4	ENGL 104	3	MATH 221 <b>or</b> 222	4	Humanities/Arts Elective	3
ENGL 101	3	MATH 122	4	PHYS 211	4	PHYS 212	4
ENGR 102	2	Transfer Elective	3	Transfer Elective	3	Transfer Elective	3
MATH 121	4	Social/Behavioral Science Elective	3	Wellness	1		

## ENVIRONMENTAL SCIENCE Associate in Science Degree - 3046

### Science Department

The Environmental Science AS program provides students with a firm foundation in mathematics, science and liberal arts needed for transfer to and succeed in a baccalaureate degree program in environmental science, policy, resource management, sustainability, conservation, waste management and natural sciences. Students can focus on sub-disciplines such as education, biology, ecology, chemistry, geology, earth science, engineering, or public health, depending upon the transfer institution of their choice. This curriculum offers Biology and Geoscience options for students to select. Since the requirements of senior institutions vary widely, it is essential to choose an intended transfer institution as soon as possible and carefully follow the program described in that college's catalog. Students who complete HACC's Environmental Science AS degree are admitted at the Junior-level in a related Environmental Science degree at any institution participating in Pennsylvania's statewide college credit transfer system. The complete program is available only at the Harrisburg Campus.

### Transfer Opportunities

This transfer curriculum is provided to students to be used as a guide for planning to transfer to a baccalaureate degree granting institution. Students may continue their education in preparation for careers as diverse as sustainability, sustainable resource management, land use or watershed planning, pollution prevention, waste management, environmental monitoring and clean up, air quality, environmental education, water resources and waste water, conservation, public and environmental health, wetlands protection, ecology, natural resource management, regulatory affairs and compliance, parks and recreation management, or within research and development, inspection, testing and quality control. Employers can include federal, state and local government, corporations, consulting firms and nonprofit organizations.

### Competency Profile

Upon successful completion of the program, the student will be able to:

- Effectively communicate scientific information both orally and through written reports and presentations
- Apply the scientific method via data collection and analysis to evaluate scientific problems
- Evaluate scientific principles and sustainability as they relate to the discipline
- Demonstrate the proper use of basic scientific equipment
- Utilize environmental science scholarly resources including the library and web-based resources
- Identify the sources and consequences of major constituents of air, water, and land pollution
- Analyze a variety of timely environmental issues in light of their ecological, social, economic, ethical, or cultural implications
- Successfully transfer to a Baccalaureate degree program in Environmental Science or related degree program with a biology emphasis

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 62)

General Education		Major Requirements		Other Required Courses
ENGL 101 English Composition I	3	BIOL 102 General Biology II	4	
ENGL 102 English Composition II (or)	3	ENVS 201 Introduction to Environmental Science	4	
ENGL 104 Technical Writing	(3)	GEOL 201 Environmental Geology	4	
COMM 101 Effective Speaking	3	GIS 141 Introduction to Geospatial Technology	3	
Humanities & Arts Elective	3		15	
Mathematics Elective - MATH 103, 104, 119 or 121	3			
Mathematics or Science Elective - MATH 202	4			
Science w/ a Laboratory Elective - BIOL 101	4			
Social & Behavioral Science Elective	3			
First-Year-Seminar Elective (Rec: SCI 100)	1			
Wellness	1			
	28			
<b>Biology Concentration</b>		<b>Geoscience Concentration</b>		
CHEM 101 General Inorganic Chemistry	4	GEOG 101 Physical Geography	3	
CHEM 102 General Inorganic Chem & Qualitative Analysis	4	GEOG 201 World Geography (or)	3	
Biology Concentration Electives*	11	GEOG 230 Human Geography	(3)	
	19	GEOL 101 Physical Geology	4	
		Geoscience Concentration Electives**	11	
			21	

\*Students are to select from the following: BIOL 206, 212, 215, 221; ENVS 220.

\*\*Students are to select from the following: BIOL 206; CHEM 101, 102; ENVS 220; PHYS 201.

**RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS**

Part-time students can complete this program by taking one or more courses each semester.

**Biology Concentration**

<b>Fall Semester I</b>		<b>Spring Semester I</b>		<b>Fall Semester II</b>		<b>Spring Semester II</b>	
BIOL 101	4	BIOL 102	4	Biology Concentration Elective	4	Biology Concentration Elective	4
ENGL 101	3	Biology Concentration Elective	3 or 4	CHEM 101	4	CHEM 102	4
ENVS 201	4	ENGL 102 or 104	3	COMM 101	3	Humanities/Arts Elective	3
FYS Elective	1	GEOL 201	4	GIS 141	3	MATH 202	4
MATH 103, 104, 119 or 121	3			Social/Behavioral Science Elective	3		
				Wellness	1		

**Geoscience Concentration**

<b>Fall Semester I</b>		<b>Spring Semester I</b>		<b>Fall Semester II</b>		<b>Spring Semester II</b>	
ENGL 101	3	ENGL 102 or 104	3	BIOL 101	4	BIOL 102	4
ENVS 201	4	GEOL 201	4	COMM 101	3	GEOL 101	4
FYS Elective	1	GEOG 201 or 230	3	GIS 141	3	Geoscience Concentration Elective	4
GEOG 101	3	Geoscience Concentration Elective	3 or 4	Geoscience Concentration Elective	4	MATH 202	4
Humanities/Arts Elective	3	Wellness	1	Social/Behavioral Science Elective	3		
MATH 103, 104, 119 or 121	3						

## EXERCISE SCIENCE, Associate in Science Degree - 3121

### Science Department

The Exercise Science AS degree prepares students to transfer to a baccalaureate degree program in Exercise Science or similar curricula in Health, Exercise Physiology, Kinesiology, or Athletic Training.

Graduates of such baccalaureate programs find employment in health and fitness center program management, corporate health and wellness programs, exercise rehabilitation programs, adult fitness programs and related fields. The curriculum includes general education requirements, a basic science and math foundation and a broad base in the exercise sciences and discipline-related courses such as: exercise physiology, health, nutrition, anatomy and kinesiology and exercise measurement and prescription. The Exercise Science AS program prepares students to sit for nationally accredited certified personal trainer exams, such as the American College of Sports Medicine (ACSM), American Council on Exercise (ACE), and the National Strength and Conditioning Association (NSCA)

Since the requirements of 4-year colleges/universities vary widely, it is essential that students choose an intended transfer institution as soon as possible and carefully follow the program described in that college's catalog. The entire Exercise Science program is available at the Harrisburg and Lancaster campuses.

### Transfer Opportunities

This transfer curriculum is provided as a guide for students planning to transfer to a baccalaureate degree granting institution. Graduates of the program can obtain positions in fitness centers, exercise program instruction and management, personal training (ACSM, ACE, NSCA), corporate health and wellness programs, exercise rehabilitation programs, youth and adult recreation programs, and other related fields.

### Competency Profile:

This curriculum is designed to prepare the students to:

- Demonstrate the knowledge, skills, and abilities required by the national certification exams for personal training
- Demonstrate skill in the identification of risk factors and in the description of health status
- Conduct a variety of fitness assessments for all components of health-related fitness
- Effectively develop and implement exercise prescriptions to improve and enhance all components of health-related fitness
- Effectively educate and/or communicate with individuals regarding life style modification to improve and enhance personal fitness, health, and well-being
- 

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 60)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	BIOL 122 Anatomy & Physiology II	4	Program Specific Electives**	11
ENGL 102 English Composition II	3	CHEM 101 General Inorganic Chemistry I	4		
COMM 101 Effective Speaking	3	EXSC 102 Introduction to the Exercise Sciences	3		
Humanities & Arts Elective*	3	EXSC 202 Functional Anatomy & Physiology	3		
Mathematics Elective	3	HLTH 101 Healthful Living	3		
Mathematics or Science Elective	3	NUTR 104 Nutrition (or)	3		
Science w/ a Laboratory Elective - BIOL 121	4		20		
Social & Behavioral Science Elective	3				
First-Year Seminar Elective	1				
Wellness - PE 201	3				
	29				

\*Students are to select from the following: ART 181 or 182; ENGL 206; HUM 101, 115, 201; MUS 104; PHIL 200; THTR 101; or a foreign language course.

\*\*Students are to select program electives from the following: CHEM 102; MATH 103, 202; PE 130, 169, 178, 179, 180, 181, 182, 183, 184; PHYS 201, 202; PSYC 241.

### RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students can complete this program by taking one or more courses each semester.

Fall Semester I	Spring Semester I	Fall Semester II	Spring Semester II
BIOL 121	4 BIOL 122	4 CHEM 101	4 Math/Science Elective
ENGL 101	3 ENGL 102	3 COMM 101	3 Program Electives
EXSC 102	3 EXSC 202	3 Humanities/Arts Elective	3 Social/Behavioral Science Elective
FYS Elective	1 HLTH 101	3 NUTR 104	3
Mathematics Elective	3 PE 201	3 Program Electives	3

# FIRE SCIENCE TECHNOLOGY, Associate in Applied Science Degree - 6636

Engineering & Technology Department

The Fire Science Technology AAS degree is designed to provide individuals with the technical and professional knowledge required to make decisions regarding fire protection for both the public and private sectors. This curriculum also provides a solid foundation for continuous higher learning in fire protection, administration, and management. This curriculum follows the U.S. Fire Administration/National Fire Academy's Fire and Emergency Services Higher Education (FESHE) Model for Professional Development. The complete program is available at the Harrisburg Campus.

## Career Opportunities

Graduates find work in volunteer and paid community fire services and in other governmental, insurance, business, and industrial settings. Job titles include fire fighters, fire safety specialists, industrial safety specialists and underwriters, plan reviewer and code enforcement officers.

## Competency Profile

This curriculum is designed to prepare students to:

- Identify the requirements of various fire protection environments and operate the equipment related to those environments
- Recognize the prevention and suppression of hazards by means of building inspections and hazard descriptions; the application of safety codes; and the use of proper procedures for hauling and storing hazardous materials
- Explain the operations of fire extinguishing and warning systems
- Conduct fire investigations
- Manage a fire protection organization through effective use of manpower and equipment

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 62)

General Education		Major Requirements		Other Required Courses	
ENGL 110 Foundations in Professional Writing	3	FIRE 101 Principles of Emergency Services	3	CHEM 100 Principles of Chemistry	3
COMM 101 Effective Speaking (or)	3	FIRE 102 Fire Prevention	3	CIS 105 Intro to Software for Business	3
COMM 203 Interpersonal Communication	(3)	FIRE 103 Principles of Fire & Emergency Services Safety and Survival	3	Open Elective	<u>3</u>
Humanities & Arts Elective	3	FIRE 105 Building Construction for Fire Protection	3		9
Mathematics or Science Elective	3	FIRE 106 Fire Behavior and Combustion	3		
Social & Behavioral Science Elective*	3	FIRE 201 Fire Protection Hydraulics & Water Supply	3		
First-Year-Seminar Elective	1	FIRE 202 Hazardous Materials Chemistry	3		
Wellness	<u>1</u>	FIRE 203 Fire Protection Systems	3		
	17	FIRE 204 Fire Investigation I	3		
		FIRE 207 Educational Methodology	3		
		FIRE 209 Fire & Emergency Services Administration	3		
		FIRE 210 Strategy and Tactics	<u>3</u>		
			36		

\*Select from the following courses: ANTH 101 or 205; COMM 253; GEOG 201 or 230; HIST 102; PSYC 229; or SOCI 202 or 203.

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students can complete this program by taking one or more courses each semester.

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
CIS 105	3	COMM 101 or 203	3	FIRE 201	3	FIRE 204	3
ENGL 110	3	CHEM 100	3	FIRE 202	3	FIRE 207	3
FIRE 101	3	FIRE 102	3	FIRE 209	3	FIRE 210	3
FIRE 103	3	FIRE 105	3	Humanities/Arts Elective	3	Math/Science Elective	3
FIRE 106	3	FIRE 203	3	Open Elective	3	Social/Behavioral Science Elective	3
FYS Elective	1					Wellness	1

## GENERAL STUDIES, Associate in Applied Science Degree - 7606

### Academic Affairs & Enrollment Management

The General Studies AAS curriculum is designed for students who want to enter the workforce with a 2-year degree. Students interested in interdisciplinary study, specially designed programs of study not available in regular programs, or who are undecided on their career plans, often enroll in the General Studies curriculum. The program provides a degree of flexibility that is not available in other programs, but requires a more careful planning process to ensure that career needs are met.

Students must select courses in the Humanities and Arts, Social and Behavioral Sciences, Mathematics, Natural and Physical Sciences, Computer Literacy, and Wellness, in addition to the College's requirement in written and oral communication. Students are able to select over 30-credits of coursework tailored to their needs and interests. Program electives may be selected from any College course number 100 or above. No "0" level courses are accepted for graduation.

Those who enroll in the General Studies curriculum should select their courses in consultation with a counselor to ensure that courses meet their career goals. Students who wish to graduate in this curriculum are encouraged to enter the curriculum as soon as possible and no later than prior to the scheduling of the last fifteen credits of study at the college.

The program may be pursued full-time or part-time during the day or in the evening. The complete program is available at all of HACC's campus locations, as well as through Virtual Learning.

### Career or Transfer Opportunities

Graduates have acquired both the foundational knowledge and skills found within seven major areas of general education (Oral and Written Communication; Quantitative, Computer, Information and Technology Literacy; Global Awareness; and Critical Thinking) as well as in the coursework selected to meet their individual career or transfer requirements.

### Competency Profile

This curriculum is designed to prepare students to:

- Select and apply mathematical tools to draw conclusions from quantitative data
- Write appropriately for audience, purpose and genre; demonstrate appropriate content, organization, syntax, and style
- Generate a new idea or artifact by combining, changing, or reapplying existing ideas or products
- Demonstrate the ability to find, evaluate, organize and use information effectively and ethically
- Competently construct and effectively present orally, information designed to increase knowledge, to foster understanding, or to promote change in the listeners' attitudes, values, beliefs, or behaviors
- Properly utilize technology to complete an assigned task
- Investigate issues related to the growing global interdependence of diverse societies

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 60)

General Education		Major Requirements		Other Required Courses
ENGL 101 English Composition I	3	CIS 105 Introduction to Software for Business or higher**	3	
COMM 101 Effective Speaking (or)	3	MATH 100 or higher	3	
COMM 203 Interpersonal Communication	(3)	Open Electives (All 100-299)	37	
Humanities & Arts Elective*	3		43	
Mathematics or Science Elective	3			
Social & Behavioral Sciences Elective	3			
First-Year-Seminar Elective	1			
Wellness	1			
	17			

\*Students are to select from the following courses: ART 181, 182; ENGL 206; HUM 101, 115 or 201; MUS 104; PHIL 200, THTR 101; or a foreign language course.

\*\*Students are to see their advisor for course selection options

### RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students can complete this program by taking one or more courses each semester.

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
COMM 101 or 203	3	Humanities/Arts Electives	3	CIS 105 or higher	3	Open Electives	13
ENGL 101	3	Math/Science Elective	3	MATH 100 or higher	3	Social/Behavioral Science Elective	3
FYS Elective	1	Open Electives	9	Open Electives	9		
Open Electives	6						
Wellness	1						

# GEOSPATIAL TECHNOLOGY, Associate in Science Degree - 4760

Engineering & Technology Department

The Geospatial Technology AS program provides students with the foundational knowledge, skills and practical hands-on experience needed to pursue a career in geospatial technology. Geospatial technology is an industry requiring technicians to be skilled in data acquisition, management, interpretation, integration, analysis, representation, and graphical display, all of which are part of the curriculum. In addition, the high-technology nature of geospatial technology demands personnel who are able to work in cross-functional teams in a rapidly evolving employment setting. Students are able to gain “real-world” experience in the internship course. This course allows students the opportunity to face the issues, challenges and projects that are encountered by geospatial technologists on a daily basis. The coursework is aligned with the Geospatial Technology Competency Model (GTCM) developed by the US Department of Labor and the GeoTech Center. The complete program is available at the Harrisburg Campus by taking some courses through Virtual Learning.

## Career Opportunities

Graduates of the Geospatial Technology AS program find employment as geographic information technicians, analysts, specialists, or other disciplines related to the acquisition, use and processing of geographic and time-based data. Although this degree can lead directly to employment, there are transfer opportunities available for students seeking to pursue their studies at the baccalaureate level. Graduates may pursue a bachelor’s degree in Technical Management through HACC’s articulation agreement with Bloomsburg University.

## Competency Profile

This curriculum is designed to prepare students to:

- Apply Geographic Information System (GIS) and remote sensing theory, data acquisition, data processing, and applications
- Use GIS software packages and geospatial data processing tools
- Perform engineering, geological, and environmental applications of geospatial technologies
- Develop analytical skills, including inductive and deductive reasoning
- Communicate effectively in a geospatial environment
- Use those strengthened written and oral communication skills and interpersonal characteristics for effective business opportunities and personal growth
- Apply fundamental concepts of business applications and decision-making related to geospatial technology
- Provide the student with a general educational background to facilitate analysis and interpretation of technical information
- Enter the geospatial technology field prepared to face the issues, challenges, and projects commonly encountered within the industry

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 60)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	GIS 141 Introduction to Geospatial Technology	3	CIS 140 Intermediate Database Management	3
ENGL 104 Technical Writing	3	GIS 165 Geospatial Programming	3	Open Electives	9
COMM 101 Effective Speaking	3	GIS 204 Cartographic Design	3		12
Humanities & Arts Elective	3	GIS 205 Data Acquisition & Remote Sensing	4		
Mathematics Elective - MATH 103	3	GIS 275 Advanced Geographic Info Systems	4		
Mathematics or Science Elective - MATH 202	4	GIS 291 Internship in Geospatial Technology	3		
Science with a Laboratory Elective - GEOL 201	4		20		
Social & Behavioral Science Elective - GEOG 201	3				
First-Year Seminar Elective - GIS 201	1				
Wellness	1				
	28				

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part time students can complete this program by taking one or more courses each semester.

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
ENGL 101	3	CIS 140	3	GIS 165	3	GIS 275	4
GIS 141	3	COMM 101	3	GIS 204	3	GIS 291	3
GIS 201	1	ENGL 104	3	GEOG 201	3	GEOL 201	4
Humanities/Arts Elective	3	GIS 205	4	Open Elective	3	Open Elective	3
MATH 103	3	MATH 202	4	Wellness	1		
Open Elective	3						

# GEOSPATIAL TECHNOLOGY, Certificate - 4410

Engineering & Technology Department

CIP Code: 45.0702

The Geospatial Technology certificate program provides the foundation of knowledge and skills needed for students interested in pursuing a career in geospatial technology. This program may also serve individuals, who are currently working in a field, related to Geospatial Technology, to supplement their positions. Geospatial technology is an industry requiring technicians to be skilled in data acquisition, management, interpretation, integration, analysis, representation, and graphical display, all of which are part of the curriculum. In addition, the high-technology nature of geospatial technology demands personnel who are able to work in cross-functional teams in a rapidly evolving employment setting. Students are able to gain “real-world” experience by enrolling in the internship course. This course allows students the opportunity to face the issues, challenges and projects that are encountered by geospatial technologists on a daily basis. The coursework in this program is aligned with the Geospatial Technology Competency Model (GTCM) developed by the United States Department of Labor and the GeoTech Center. Students may complete the program at the Harrisburg Campus by taking some courses through Virtual Learning.

## Career Opportunities

Graduates find employment as geographic information specialists or other disciplines related to the acquisition, use and processing of geographic and time-based data. (SOC Code: 15-1199 Geographic Information Technicians)

Link to occupational profiles on O\*NET: <http://www.onetcodeconnector.org/>

Application and admission information: <http://www.hacc.edu/NewStudents/Apply/index.cfm>

## Competency Profile

This curriculum is designed to prepare students to:

- Apply Geographic Information System (GIS) and remote sensing theory, data acquisition, data processing, and applications
- Use GIS software packages and geospatial data processing tools
- Perform engineering, geological, and environmental applications of geospatial technologies
- Develop analytical skills, including inductive and deductive reasoning
- Communicated effectively in a geospatial environment
- Apply fundamental concepts of business applications and decision-making related to geospatial technology
- Enter the geospatial technology field prepared to face the issues, challenges, and projects commonly encountered within the industry

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 30)

General Education	Major Requirements		Other Required Courses	
	GIS 141 Intro to Geospatial Technology	3	CIS 140 Intermediate Database Management	3
	GIS 165 Geospatial Programming	3	MATH 202 Introduction to Statistics	4
	GIS 204 Cartographic Design	3	MGMT 227 Project Management	<u>3</u>
	GIS 205 Data Acquisition & Remote Sensing	4		<u>10</u>
	GIS 275 Advanced Geographic Information Systems	4		
	GIS 291 Internship in Geospatial Technology	<u>3</u>		
		20		

Please see the College's website at <http://www.hacc.edu/ProgramsandCourses/Geospatial-Technology-4410.cfm> for the most current Gainful Employment Information.

# GERONTOLOGY, Associate in Applied Science Degree - 3476

Health & Public Service Department

The Gerontology AAS degree is designed to expand the knowledge and employment opportunities of those exploring or working in the aging field. It includes the coursework of the Gerontology Certificate and adds in-depth study of topics, such as gender and aging, global aging, and long-term care leadership and management. Coursework in business, nutrition, life-cycle development, psychology, sociology and communications aids students in appreciating general concepts related to aging and in preparedness. Students also have the opportunity to work with an elderly person and explore various careers in aging. The complete program is available through Virtual Learning. This program can also be completed at the Harrisburg Campus by taking some courses through Virtual Learning.

## Career or Transfer Opportunities

Graduates are prepared for entry-level positions in aging-related fields such as: long-term care and health care administration; activities/recreation social services; allied health marketing and business; volunteerism; community and human services; government; and professional organizations. Graduates also may pursue further academic study in Bachelor programs in gerontology, social work, health care management, liberal arts, and business.

## Competency Profile

This curriculum is designed to prepare students to:

- Demonstrate effective written and oral communication skills
- Utilize current technologies, tools, and applications
- Explore opportunities for further study and workforce development in gerontology fields
- Discuss the basic demographics of aging with emphasis on gender, race, culture, socioeconomic status, work, religion, and ethnicity
- Apply basic principles of gerontology to social and health issues such as health behavior and health promotion
- Summarize the physical, mental, social and psychological aspects of aging
- Obtain an in-depth understanding of legal and ethical issues related to aging and end of life issues
- Identify the changing landscape of long-term care as well as issues and trends that impact the administration and management of long-term care settings
- Explain gender by identifying the status, roles, and experiences of aging men and women in society
- Discuss major topics in gerontology worldwide as well as across cultures and nations
- Identify death and dying cultural attitudes and feelings as well as the psychological stages of the terminally ill
- Articulate effective communication skills and perspectives necessary to develop an empathetic relationship with an elderly person

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 61)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	GERT 100 Intro to Gerontology - Overview	1	NUTR 104 Nutrition	3
ENGL 102 English Composition II <b>or</b>	3	GERT 101 Intro to Gerontology – Social Services	1	PSYC 101 General Psychology	3
ENGL 104 Technical Writing <b>or</b>	(3)	GERT 102 Intro to Gerontology – Allied Health	1	PSYC 209 Life Cycle Development	3
ENGL 106 Business Writing	(3)	GERT 103 Intro to Gerontology – Psychosocial Issues	1	SOCI 201 Introduction to Sociology	3
COMM 101 Effective Speaking <b>or</b>	3	GERT 104 Intro to Gerontology – Service Learning	1		12
COMM 203 Interpersonal Communication	(3)	GERT 105 Careers in Gerontology	1		
Humanities & Arts Elective	3	GERT 200 Legal, Ethics and Aging	3		
Mathematics or Science Elective	3	GERT 201 The Social Aspects of Aging	3		
Social & Behavioral Science Elective	3	GERT 211 Women and Aging	3		
First-Year-Seminar Elective (BUSI 101)	3	GERT 215 Aging Around the World	3		
Wellness	1	GERT 220 Caregiving and Aging	3		
	22	GERT 225 Long-Term Care Leadership & Management	3		
		GERT 232 Death and Dying	3		
			27		

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students can complete this program by taking one or more courses each semester.

Fall Semester I	Spring Semester I	Fall Semester II	Spring Semester II
ENGL 101	3 ENGL 102 <b>or</b> 104 <b>or</b> 106	3 COMM 101 <b>or</b> 203	3 GERT 215
FYS Elective	3 GERT 104	1 GERT 201	3 GERT 220
GERT 100	1 GERT 200	3 GERT 211	3 Math/Science Elective
GERT 101	1 GERT 232	3 GERT 225	3 PSYC 209
GERT 102	1 Humanities/Arts Elective	3 NUTR 104	3 Social/Behavioral Science Elective
GERT 103	1 SOCI 201	3	
GERT 105	1		
PSYC 101	3		
Wellness	1		

# GERONTOLOGY, Certificate - 3300

Health & Public Service Department

CIP Code: 19.0702

The Gerontology Certificate builds on the coursework of the Gerontology Diploma and adds to it in-depth study of topics that include legal and ethical issues, psychological and emotional aspects of aging, and death and dying. This program provides basic knowledge of general concepts and practices in gerontology that can be applied in a number of fields: allied health; social services; activities/recreation; marketing and business; volunteerism; community and human services; government; and professional organizations. The program is offered entirely through Virtual Learning. Students may also complete this program at the Harrisburg Campus by taking some courses through Virtual Learning.

## Career Opportunities

This certificate is designed to expand the knowledge and opportunities for employment for those exploring or working in the aging field. Graduates may find career opportunities as activities professionals and work toward national certification. They may also work in allied health, social services, or health care administration, as well as in marketing and business. Graduates may also pursue further academic study in nursing, social work, management, liberal arts, and business. (SOC Code: 21-1093 Social and Human Services Assistant)

Link to Occupational profiles on O\*NET: <http://www.onetcodeconnector.org/>

Application and admission information: <http://www.hacc.edu/NewStudents/Apply/index.cfm>

## Competency Profile

This curriculum is designed to prepare students to:

- Demonstrate effective written and oral communication skills
- Utilize current technologies, tools and applications
- Explore opportunities for further study and workforce development in gerontology fields
- Discuss the basic demographics of aging
- Apply basic principles of gerontology to social and health issues
- Recognize differences between normal aging and disease-related aging
- Summarize the physical, mental, social and psychological aspects of aging
- Articulate skills and perspectives necessary to develop an empathetic relationship with an elderly person
- Identify the need for teamwork to provide optimal care for the aging population
- Obtain an in-depth understanding of legal and ethical issues related to aging and end of life issues
- Explain the psychological and emotional processes associated with individuals as they are aging

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 30)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	GERT 100 Gerontology Overview	1	PSYC 101 General Psychology	3
		GERT 101 Intro to Gerontology - Social Services	1	SOCI 201 Introduction to Sociology	3
		GERT 102 Intro to Gerontology - Allied Health	1	Gerontology Electives	6
		GERT 103 Intro to Gerontology - Psychosocial Issues	1		12
		GERT 104 Intro to Gerontology - Service Learning	1		
		GERT 105 Careers in Gerontology	1		
		GERT 200 Legal and Ethical Aspects of Aging	3		
		GERT 201 Social Aspects of Aging	3		
		GERT 232 Death and Dying	3		
			15		

Please see the College's website at <http://www.hacc.edu/ProgramsandCourses/Gerontology-3300.cfm> for the most current Gainful Employment Information.

# GERONTOLOGY, Diploma - 0231

Health & Public Service Department

CIP Code: 19.0702

The Gerontology Diploma is designed to develop awareness and competence for those individuals in allied health, social services, activities/recreation, business, and administrative fields who work with the aging population. The course content includes basic principles and issues in gerontology, allied health, social services, mental health, and wellness as well as 20-hours of service learning volunteering. The program is offered entirely through Virtual Learning. Students can complete the program at the Harrisburg Campus by taking some courses through Virtual Learning.

## Career Opportunities

This diploma is designed to expand the knowledge and opportunities for employment for those exploring or working in the aging field. Graduates find entry-level employment in settings such as nursing homes, personal care/assisted living communities, home health care, senior centers and hospice care. Additionally, many graduates go on to obtain a Gerontology Certificate or Gerontology AAS degree and/or pursue further study in a number of related areas. (SOC Code: 21-1093 Social and Human Services Assistants)

Link to Occupational profiles on O\*NET: <http://www.onetcodeconnector.org/>

Application and admission information: <http://www.hacc.edu/NewStudents/Apply/index.cfm>

## Competency Profile

This curriculum is designed to prepare students to:

- Demonstrate effective written and oral communication skills
- Utilize current technologies, tools and applications
- Discuss the basic demographics of aging
- Apply basic principles of gerontology to social and health issues
- Recognize differences between normal aging and disease-related aging
- Summarize physical, mental, social and psychological aspects of aging
- Articulate skills and perspectives necessary to develop an empathetic relationship with an elderly person
- Identify the need for teamwork to provide optimal care for the aging population

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 17)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	GERT 100 Gerontology Overview	1	PSYC 101 General Psychology	3
		GERT 101 Social Services	1	SOCI 201 Introduction to Sociology	3
		GERT 102 Allied Health	1		6
		GERT 103 Psychosocial Issues	1		
		GERT 104 Service Learning	1		
		Gerontology Elective	3		
			8		

Please see the College's website at <http://www.hacc.edu/ProgramsandCourses/Gerontology-0231.cfm> for the most current Gainful Employment Information.

## HEALTH CARE MANAGEMENT, Associate in Applied Science Degree - 3606

Business Studies Department

The Healthcare Management AAS degree prepares students for entry-level management positions within the healthcare industry including practitioner offices, holistic health practices, long-term care facilities, and wellness centers. Students are able to apply principles in the dynamic and growing healthcare industry. The complete program is available at the Harrisburg and Lancaster campuses, as well as through Virtual Learning. Students may also complete the program at the Gettysburg, Lebanon, and York campuses by taking some courses through Virtual Learning.

### Career Opportunities

Graduates prepare for entry-level positions in healthcare organizations with career paths leading to medical practice and medical office management positions. The program also prepares currently employed healthcare clinicians for management positions in the healthcare industry.

### Competency Profile

This curriculum is designed to prepare students to:

- Communicate effectively and professionally in healthcare management situations through writing, speaking, and electronic media
- Use quantitative and qualitative tools and methodologies to support healthcare management decision making
- Describe economic, environmental, political, ethical, legal, and regulatory contexts of healthcare management policies
- Evaluate healthcare management issues including financial, legal, operational, and administrative procedures
- Use team building skills in the accomplishment of group goals and objectives
- Work effectively, respectfully, ethically, and professionally with people of diverse ethnic, cultural, gender, and other backgrounds and with people who have different organizational roles, social affiliations, and personalities
- Solve problems related to healthcare management using critical thinking skills
- Utilize research methods to collect and analyze information regarding healthcare management concepts

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 60)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	ACCT 101 Principles of Accounting I	4	BIOL 105 Medical Terminology	3
ENGL 102 English Composition II (or)	3	ACCT 200 Principles of Accounting II	4	BIOL 111 Intro to Human Biology (or)	3
ENGL 106 Business Writing	(3)	AH 210 Health Care Law & Ethics	3	BIOL 121 Anatomy & Physiology	(4)
COMM 101 Effective Speaking	3	AH 213 Intro to Medical Insurance	3		6
Humanities & Arts Elective	3	CIS 105 Intro to Software for Business	3		
Mathematics or Science Elective	3	MATH 100* College Math for Business	3		
Social & Behavioral Science Elective - ECON 201	3	MGMT 130 Intro to Healthcare Management	3		
First-Year-Seminar Elective - BUSI 101	3	MGMT 201 Principles of Management	3		
Wellness	1	MGMT 203 Human Resource Management	3		
		MKTG 201 Principles of Marketing	3		
			32		

\*May be replaced by a higher level MATH offering

### RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students can complete this program by taking one or more courses each semester.

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
BIOL 105	3	AH 213	3	ACCT 101	4	ACCT 200	4
BUSI 101	3	BIOL 111 or 121	3 or 4	COMM 101	3	AH 210	3
CIS 105	3	ENGL 102 or 106	3	ECON 201	3	MGMT 203	3
ENGL 101	3	MGMT 201	3	Humanities/Arts Elective	3	Math/Science Elective	3
MGMT 130	3	MATH 100	3	MKTG 201	3		
Wellness	1						

## HEALTH SCIENCE, Associate in Applied Science Degree - 3656

Health & Public Service Department

The Health Science AAS program is a degree-completion program designed specifically for actively credentialed, or licensed, health care professionals currently working in their fields. Students select courses from one of the seven areas of concentration: **Dental Assistant Expanded Function; Management/Marketing; Paramedic; Pediatric Imaging, Radiology, Vascular Imaging, and Gerontology**. Students who possess, or are eligible to sit for, a primary certification from an approved medical imaging board are able to enroll in the Radiologic Imaging option of this program.

Each student's credential and employment verification letter must be received and reviewed. After evaluation, qualified applicants are awarded 30-credits towards the Health Science degree. **This is a selective admissions program. The Dental Assistant Expanded Function option** is available at the Harrisburg Campus. The **Management/Marketing option** is available at the Harrisburg and Lancaster campuses, as well as through Virtual Learning. Students can also complete this option at the Lebanon Campus by taking some courses through Virtual Learning. The **Paramedic and the Radiologic Imaging options** are both available at the Harrisburg Campus. The Radiologic Imaging option is also available through Virtual Learning. The **Gerontology option** is available through Virtual Learning. Students can also complete this option at the Harrisburg and Lancaster campus by taking some courses through Virtual Learning. Finally, the **Vascular Imaging option** is available at the Lancaster Campus. It is recommended that the student consult with their program advisor as to the location and availability of courses within their chosen option.

*Selective Program:* Entry into this program is not guaranteed with admission to the College; specific admissions criteria must be met. Please see the Health Careers website ([www.hacc.edu/healthcareers](http://www.hacc.edu/healthcareers)), or contact us by email at: [start@hacc.edu](mailto:start@hacc.edu) for specific information on program entry requirements.

### *Career Opportunities*

Graduates are qualified to seek employment in the Dental Assistant, Management/Marketing, Paramedic, Pediatric Imaging, Radiology, Vascular Imaging, and Gerontology areas or to pursue further academic study. This program also prepares currently employed healthcare clinicians for upward mobility within their organizations.

### *Competency Profile*

This curriculum is designed to prepare students to:

#### **Expanded Function Dental Assistant (EFDA) Option**

- Apply concepts of restorative terminology, tooth anatomy, and restorative dental materials to restorative procedures
- Demonstrate skills to meet the requirements established by the Pennsylvania State Board of Dentistry
- Demonstrate basic competency for placing and finishing amalgam and composite resin restorations on patients
- Demonstrates ethical conduct in restorative care and decision making
- Write and speak effectively

#### **Management/Marketing Option**

- Demonstrate competencies needed to gain employment in the physician practices, hospitals, or vendors in the medical areas
- Demonstrate proficiency in all aspects of medical management for the hospital and/or physician practice
- Demonstrate the concepts of marketing to target audiences
- Discuss human resource issues in the hospital or medical office
- Incorporate Healthcare Law and Ethics into the changing healthcare environment
- Write and speak effectively

#### **Paramedic Option**

- Demonstrate paramedic skills associated with established standards and procedures for a variety of patient encounters
- Communicate effectively with others
- Demonstrate professional behavior
- Work effectively with other healthcare professionals
- Explain how paramedic/EMS specialized training fits into the overall healthcare delivery system

#### **Pediatric Imaging Option**

- Demonstrate competencies needed to gain employment in the physician practices and hospitals that provide pediatric cardiology
- Demonstrate knowledge of medical imaging modalities and their uses
- Demonstrate the concepts of patient care in pediatric cardiology
- Use medical imaging equipment for diagnosis and treatment of cardiovascular patients
- Write and speak effectively
- Implement current technologies and procedures

## Radiologic Imaging Option

- Demonstrate competencies needed to gain employment in the physician practices, hospitals, or with vendors in the medical areas
- Demonstrate knowledge of medical imaging modalities and their uses
- Demonstrate the concepts of patient care in medical imaging
- Use medical imaging equipment for diagnosis and/or treatment of patients
- Write and speak effectively

## Gerontology Option

- Demonstrate competencies of the workplace in understanding the demographics of aging as well as the physical, mental, social and psycho-social aspects of aging
- Demonstrate awareness of basic principles of gerontology applied to social, health and legal/ethical issues in the aging population
- Demonstrate competencies to gain employment in the continuum of health care for the aging population as well as activity professional, marketing and management, and social services areas in long-term care, assisted living and home health care.
- Write and speak effectively

## Vascular Imaging Option

- Demonstrate competencies needed to gain employment in the physician practices and hospitals that provide vascular imaging procedures
- Demonstrate knowledge of medical imaging modalities and their uses
- Demonstrate the concepts of patient care in vascular imaging
- Use medical imaging equipment for diagnosis and treatment of cardiovascular patients
- Write and speak effectively
- Implement current technologies and procedures

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 62)

General Education	Major Requirements	Other Required Courses
ENGL 101 English Composition I	3	AH 210 Health Care Law & Ethics
COMM 101 Effective Speaking (or)	3	Concentrations***
COMM 203 Interpersonal Communication	(3)	
Humanities & Arts Elective*	3	
Mathematics or Science Elective - MATH 100 or higher	3	
Social & Behavioral Science Elective	3	
First-Year Seminar Elective	1	
Wellness	<u>1</u>	
	17	30
		<u>12</u>
		15

\*Students are to select courses from the following: ART 181 or 182; ENGL 206; HUM 101, 115 or 201; MUS 104; PHIL 200; THTR 101; or a foreign language course. Highly recommend SPAN 104.

\*\*Credits are awarded to students who have a credential and are currently employed in the health care field.

\*\*\*Choose 12 or 14 credits from one of the six concentrations listed below:

<b>Expanded Function Dental Assistant (EFDA) Concentration</b>	<b>12</b>	<b>Management/Marketing Concentration</b>	<b>12</b>
DA 252 Expanded Functions I	3	AH 213 Introduction to Medical Insurance	3
DA 253 Expanded Functions II	3	Concentration Electives	(9)
NUTR 104 Nutrition	3	<i>Select electives from the following courses:</i>	
SOCI 201 Introduction to Sociology	3	ACCT 101 Principles of Accounting I	(4)
<i>DA courses are restricted to students who possess the Dental Assisting National Board (DANB) Certified Dental Assistant (CDA) credential.</i>		MGMT 201 Principles of Management	(3)
		MGMT 203 Human Resources Management (or)	
		MGMT 204 Human Relations in Business	(3)
		MGMT 226 Principles of Leadership	(3)
		MKTG 201 Principles of Marketing	(3)
<b>Paramedic Concentration</b>	<b>12</b>	<b>Gerontology Concentration</b>	<b>12</b>
EMS 238 Introduction to Rescue	(3)	GERT 104 Introduction to Gerontology – Service Learning	1
EMS 240 Introduction to EMS System	(3)	GERT 105 Careers in Gerontology	1
EMS 241 Externship (EMS 240 is the prerequisite)	(3)	Any GERT Courses	10
PSYC 101 Introduction to Psychology	(3)		
SOCI 201 Introduction to Sociology	(3)		
<i>This concentration is restricted to students who possess the National Registered Paramedic (NRP) and/or the PA EMT-P credential.</i>		<b>Radiologic Imaging Concentration</b>	<b>12</b>
		<i>Any RADT course 220 or above. These courses are restricted to Students who possess, or are eligible to sit for, a primary certification from an approved medical imaging board.</i>	
<b>Paramedic Imaging Concentration</b>	<b>14</b>	<b>Vascular Imaging</b>	<b>12</b>
<i>Any CVT course numbered 231 or above. These courses are Restricted to students who possess any of the following credentials: Registered Diagnostic Cardiac Sonographer (RDCS), Registered Cardiac Sonographer (RCS), or the Registered Diagnostic Medical Sonography (RDMS).</i>		<i>Any CVAS course numbered 235 or above. These courses are Restricted to students who possess any of the following credentials: Registered Diagnostic Cardiac Sonographer (RDCS), Registered Cardiac Sonographer (RCS), or the Registered Diagnostic Medical Sonography (RDMS).</i>	

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part time students can complete this program by taking one or more courses each semester.

<b>Fall Semester I</b>		<b>Spring Semester I</b>		<b>Fall Semester II</b>		<b>Spring Semester II</b>	
COMM 101 or 203	3	AH 210	3	Concentration Courses	6 or 7	Concentration Options	6 or 7
ENGL 101	3	MATH 100 or higher	3				
FYS Elective	1	Wellness	1				
Humanities/Arts Elective	3						
Social/Behavioral Science Elective	3						

# HEATING, VENTILATION AND AIR CONDITIONING/REFRIGERATION – HVAC/R, Associate in Applied Science Degree – 4780

Engineering & Technology Department

The Heating, Ventilation and Air Conditioning/Refrigeration (HVAC/R) AAS program is designed to provide students with the theory and hands-on skills necessary to identify, design, and install basic HVAC systems for both residential and commercial buildings. This curriculum is also supported by general education courses in the communications, sciences, and mathematics areas. The complete program is available at the Harrisburg Campus (Mid-town II location) and the York Campus. Students can attend full-time during the day or part-time during the evening depending on the campus chosen.

## Career Opportunities

Graduates have the knowledge and skills to move from entry-level, multi-skilled mechanic position into a supervisory position in industry, such as HVAC Installation Leader, HVAC Service Technician, HVAC Technical Support Service Technician; Supply or Distributor Counter/Parts Manager, or HVAC Equipment Sales.

## Competency Profile

This curriculum is designed to prepare students to:

- Develop and apply basic skills of electricity, heating, refrigeration, and air conditioning technology
- Install, repair, and maintain heating, air conditioning, and refrigeration systems
- Cite federal laws relevant to refrigerant recovery and recycling
- Read HVAC blueprints
- Design HVAC systems to meet prescribed specifications
- Address customer-service issues
- Install and maintain building wide HVAC systems
- Design and install HVAC control systems in residential and commercial buildings

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 61)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I (or)	3	HVAC 100 EPA Refrigerant Handling, Preparation, & Testing	1	GTEC 105 Customer Service	1
ENGL 110 Foundations of Professional Writing	(3)	HVAC 101 Basic Electrical Fundamentals	4	HBR 130 Plumbing I	3
COMM 101 Effective Speaking (or)	3	HVAC 102 R410A-Safety & Handling	1	*Program Specific Electives	9
COMM 203 Interpersonal Communication	(3)	HVAC 103 Fundamentals of Air Conditioning I	4		13
Humanities & Arts Elective	3	HVAC 105 Fundamentals of Air Conditioning II	4		
Mathematics or Science Elective	3	HVAC 107 Fundamentals of Low & Medium Temp. Refrigeration	4		
Social & Behavioral Science Elective	3	HVAC 109 Heating Systems	4		
First-Year Seminar Elective	1	HVAC 110 System Design	3		
Wellness	1	HVAC 200 HVAC Control Systems	3		
	17	HVAC 201 HVAC Building Systems	3		
			31		

\*Select from the following disciplines: BUSI, CARP, CIS, ELEC, ELOC, GTEC, HBR, HVAC 291, IA, IMT, MGMT, and WELD.

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part time students can complete this program by taking one or more courses each semester.

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
ENGL 101 or 110	3	Humanities/Arts Elective	3	COMM 101 or 203	3	GTEC 105	1
FYS Elective	1	HVAC 100	1	HBR 130	3	HVAC 200	3
HVAC 101	4	HVAC 102	1	HVAC 107	4	Math/Science Elective	3
HVAC 103	4	HVAC 105	4	HVAC 201	3	Program Elective	3
Program Elective	3	HVAC 109	4	Program Elective	3	Social/Behavioral Science Elective	3
		HVAC 110	3			Wellness	1

# HEATING, VENTILATION AND AIR CONDITIONING/REFRIGERATION – HVAC/R, Certificate - 4280

Engineering & Technology Department  
CIP Code: 47.0201

The Heating, Ventilation and Air-Conditioning/Refrigeration (HVAC/R) certificate provides students with the necessary theory and hands-on skills needed to identify, design, and install heating, ventilation and air condition (HVAC) systems – at the entry level – for residential and commercial buildings. The complete program is available at the Harrisburg Campus (Mid-Town II location) and the York Campus. Students can attend full-time during the day, or part-time during the evening, depending on the campus chosen.

### Career Opportunities

Graduates find employment as HVAC service technicians, equipment installers, or HVAC maintenance technicians. (SOC Code: 49-9021 Heating, A/C and Refrigeration Mechanics and Installers)

Link to occupational profiles on O\*NET: <http://www.onetcodeconnector.org/>

Application and admission information: <http://www.hacc.edu/NewStudents/Apply/index.cfm>

### Competency Profile

This curriculum is designed to prepare students to:

- Develop and apply basic skills of electricity, heating, refrigeration, and air conditioning technology
- Install, repair, and maintain heating, air conditioning, and refrigeration systems
- Cite federal laws relevant to refrigerant recovery and recycling
- Read HVAC blueprints
- Design HVAC systems to meet prescribed specifications
- Address customer-service issues

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 30)

General Education	Major Requirements	Other Required Courses		
	HVAC 100 EPA Refrigerant Handling,	1	GTEC 105 Customer Service	1
	HVAC 101 Basic Electrical Fundamentals	4	*HVAC Program Elective	<u>1</u>
	HVAC 102 R410-Safety & Handling	1		2
	HVAC 103 Fundamentals of Air Conditioning I	4		
	HVAC 105 Fundamentals of Air Conditioning II	4		
	HVAC 107 Fundamentals of Low & Medium Temperature Refrigeration	4		
	HVAC 109 Heating Systems	4		
	HVAC 110 Fundamentals of Air Conditioning & Heating System Design	3		
	HVAC 200 Control Systems	<u>3</u>		
		28		

\*Students are to select from the following courses: ELEC 100 (1-credit); GTEC 101 (3-credits); HBR 130 (3-credits).

### RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part time students can complete this program by taking one or more courses each semester.

Fall Semester I		Spring Semester I	
GTEC 105	1	HVAC 100	1
HVAC 101	4	HVAC 102	1
HVAC 103	4	HVAC 105	4
HVAC 109	4	HVAC 107	4
Program Elective	1	HVAC 110	3
		HVAC 200	3

Please see the College's website at <http://www.hacc.edu/ProgramsandCourses/Heating-Ventilation-and-Air-Conditioning/Refrigeration-4280.cfm> for the most current Gainful Employment Information.

## INTRODUCTION TO HVAC/REFRIGERATION, Diploma - 0280

Engineering & Technology Department

CIP Code: 47.0201

The Introduction to Heating, Ventilation and Air-Conditioning/Refrigeration (HVAC/R) diploma provides students with the basic hands on training in electricity, refrigeration, air conditioning and heating systems. The complete program is held at the Harrisburg Campus (Mid-Town II location) and at the York Campus. Students can attend full time during the day or part time during the evening, depending on the campus chosen.

### Career Opportunities

Graduates find employment as HVAC Service Technicians, Equipment Installers, or HVAC Maintenance Technicians.

(SOC Code: 49-9021 Heating, A/C and Refrigeration Mechanics and Installers)

Link to Occupational profiles on O\*NET: <http://www.onetcodeconnector.org/>

Application and admission information: <http://www.hacc.edu/NewStudents/Apply/index.cfm>

### Competency Profile

This curriculum is designed to prepare students to:

- Perform the basic skills of electricity, heating, refrigeration, and air conditioning technology
- Install, repair and maintain heating, air conditioning, and refrigeration systems
- Outline the federal laws relevant to refrigerant recovery and recycling

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 16)

#### General Education

#### Major Requirements

#### Other Required Courses

HVAC 100 EPA Refrigerant Handling, Preparation & Testing	1
HVAC 101 Basic Electrical Fundamentals	4
HVAC 102 R410-A Safety and Handling	1
HVAC 103 Fundamentals of Air Conditioning I	4
HVAC 109 Heating Systems	4
	14

ELEC 100 Fund of Electricity & Electronics	1
GTEC 105 Customer Service	1
	2

Please see the College's website at <http://www.hacc.edu/ProgramsandCourses/Introduction-to-HVAC-Refrigeration-0280.cfm> for the most current Gainful Employment Information.

# HOME AND BUILDING REMODELING, Certificate - 4430

Engineering & Technology Department

CIP Code: 46.0000

The Home and Building Remodeling certificate delivers introductory training in construction materials and processes, while providing students for continued skills development. In addition, students select technical elective courses that develop specialized skills in such disciplines as concrete and masonry, plumbing, interior finishing, and heating systems. The program can be completed at Harrisburg Campus's Midtown location.

### Career Opportunities

Graduates of the program find entry-level employment with local remodeling and construction contractors as carpenters, finish carpenters, masonry technicians, HVAC helpers, roofers, siding installers, and drywall installers. (SOC Code: 47-2031 Carpenters)

Link to occupational profiles on O\*NET: <http://www.onetcodeconnector.org/>

Application and Admission information: <http://www.hacc.edu/NewStudents/Apply/index.cfm>

### Competency Profile

This curriculum is designed to prepare students to:

- Use basic hand tools and equipment of the trade
- Read construction prints
- Apply proper construction materials and processes
- Work safely in a construction environment
- Demonstrate construction work applications
- Communicate effectively with others
- Solve math problems related to the trade

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 31)

#### General Education

#### Major Requirements

#### Other Required Courses

CARP 110 Carpentry Fundamentals	3
CARP 130 Floor, Wall, & Roof Framing	3
CARP 150 Interior Finishing I	3
ELOC 153 Fundamentals of Electricity	4
ELOC 157 Electrical Wiring I	4
ELOC 172 National Electric Code	2
GTEC 110 Construction Print Reading	3
HBR 130 Plumbing I	3
HBR 140 Concrete & Masonry	3
WELD 111 Welding Applications	3
	<u>31</u>

Please see the College's website at <http://www.hacc.edu/ProgramsandCourses/Home-and-Building-Remodeling-4430.cfm> for the most current Gainful Employment Information.

# HOSPITALITY & TOURISM MANAGEMENT, Associate in Applied Science Degree - 1906

Business Studies Department

The Hospitality and Tourism Management AAS degree is a field of study designed to prepare students with the knowledge, commitment, and skills needed for management, marketing, and operational positions in the growing hospitality and tourism industry that provides food and beverage, accommodations, and tourism services. As a field of study, the Hospitality and Tourism Management degree is interdisciplinary. As such, it draws upon a wide range of basic disciplines to provide students with the fundamental knowledge and skills required to fulfill the diverse demands placed upon individuals who pursue management positions within this industry. Students are able to select a concentration in Restaurant Food Service Management, Hotel and Lodging Management, or Tourism, Convention and Event Management. This program is accredited by the Accreditation Council for Business Schools and Programs (ACBSP). Since 1992, ACBSP is the only nationally recognized organization that grants regional accreditation to two- and four-year colleges and universities. The complete Hospitality and Tourism Management program is available at the Harrisburg campus.

## Career Opportunities

Upon completion of this degree, graduates of the Restaurant Food Service Management concentration may obtain employment as dining room managers, kitchen managers, beverage managers, and banquet and food event managers. The Hotel and Lodging Management concentration prepares students to enter employment as front office operations managers, rooms division managers, convention services managers, meeting planners and sales and marketing managers. Finally, the Tourism, Convention and Event Management concentration prepares students for employment as tour operators, tour guides, destination planners, destination promoters, and convention services managers.

## Competency Profile

This curriculum is designed to prepare students to;

- Demonstrate basic skills needed in hospitality and tourism organizations
- Display competency in hospitality and tourism business subjects required for critical thinking applications
- Display competency in computer applications relevant to the hospitality and tourism industry
- Demonstrate technical operations, management, and supervisory skills
- Recognize how hospitality and tourism organizations work in synergy to enhance the economic viability of geographic areas, both domestic and foreign
- Embrace change to stay current with the ever changing face of hospitality and tourism
- Recognize how specialized training fits into the larger management and societal context

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 66)

General Education		Major Requirements		Other Required Courses	
ENGL 110 Foundations in Professional Writing	3	HTMT 101 Intro to Hospitality & Tourism Industry	3	CIS 105 Intro to Software for Business	3
COMM 101 Effective Speaking (or) COMM 203 Interpersonal Communication	3	HTMT 154 Supervisory Housekeeping	3	CULI 100 The World of Wine	1
Humanities & Arts Elective	3	HTMT 201 Tourism: Theories & Practices	3		4
Mathematics or Science Elective	3	HTMT 212 Front Office Operations & Management	3		
Social & Behavioral Science Elective	3	HTMT 213 Marketing: Hospitality & Tourism	3		
First-Year-Seminar Elective	1	HTMT 225 Destination Geography	3		
Wellness	1	HTMT 251 Hospitality Supervision	3		
	17	HTMT 270 Convention & Event Management	3		
		HTMT 278 Hospitality & Tourism Management Coop Seminar & Field Experience	3		
			27		

### Restaurant/Food Service Management Option

CULI 113 Sanitation & Safety	2
CULI 221 Basic Foods: Preparation & Production	4
HTMT 104 Nutrition for Food Service	3
HTMT 110 Menu Planning & Marketing	3
HTMT 125 Dining Room Management	3
HTMT 231 Cost Control: Food, Beverage & Labor	3
<b>Total</b>	<b>18</b>

### Hotel & Lodging Management Option

CULI 113 Sanitation & Safety	2
CULI 221 Basic Foods: Preparation & Production	4
HTMT 202 Principles of Travel Selling	3
HTMT 231 Cost Control: Food, Beverage, & Labor	3
HTMT 269 Hospitality Industry Computer Systems	3
MKTG 235 Digital Media Marketing	3
<b>Total</b>	<b>18</b>

### Tourism, Convention & Event Management Option

HTMT 125 Dining Room Management	3
HTMT 202 Principles of Travel Selling	3
HTMT 203 Group Travel Planning	3
HTMT 269 Hospitality Industry Computer Systems	3
HTMT 279 Travel Reservation Systems	3
MKTG 235 Digital Media Marketing	3
<b>Total</b>	<b>18</b>

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students can complete this program by taking one or more courses each semester.

### Restaurant/Food Service Management Option

Fall Semester I		Spring Semester I		Summer		Fall Semester II		Spring Semester II	
CIS 105	3	CULI 113	2	HTMT 225	3	HTMT 110	3	COMM 101 or 203	3
CULI 100	1	HTMT 154	3	HTMT 278	3	HTMT 125	3	CULI 221	4
ENGL 110	3	HTMT 212	3	Wellness	1	HTMT 201	3	HTMT 270	3
FYS Elective	1	HTMT 251	3			HTMT 213	3	Humanities/Arts Elective	3
HTMT 101	3	Social/Behavioral Science Elective	3			HTMT 231	3	Math/Science Elective	3
HTMT 104	3								

### Hotel & Lodging Management Option

Fall Semester I		Spring Semester I		Summer		Fall Semester II		Spring Semester II	
CIS 105	3	HTMT 154	3	HTMT 225	3	CULI 100	1	COMM 101 or 203	3
CULI 113	2	HTMT 202	3	HTMT 278	3	HTMT 213	3	CULI 221	4
ENGL 110	3	HTMT 212	3	Wellness	1	HTMT 231	3	HTMT 269	3
FYS Elective	1	Social/Behavioral Science Elective	3			HTMT 251	3	HTMT 270	3
HTMT 101	3					MKTG 235	3	Humanities/Arts Elective	3
HTMT 201	3					Math/Science Elective	3		

### Tourism, Convention & Event Management Option

Fall Semester I		Spring Semester I		Summer		Fall Semester II		Spring Semester II	
CIS 105	3	HTMT 154	3	HTMT 225	3	CULI 100	1	COMM 101 or 203	3
ENGL 110	3	HTMT 202	3	HTMT 278	3	HTMT 125	3	HTMT 269	3
FYS Elective	1	HTMT 212	3	Wellness	1	HTMT 203	3	HTMT 270	3
HTMT 101	3	HTMT 251	3			HTMT 213	3	HTMT 279	3
HTMT 201	3	Social/Behavioral Science Elective	3			Math/Science Elective	3	Humanities/Arts Elective	3
MKTG 235	3								

# HOSPITALITY & TOURISM MANAGEMENT, Certificate - 1101

Business Studies Department

CIP Code: 52.0999

The Hospitality and Tourism Management certificate is a field of study designed to prepare students with the knowledge, commitment, and skills needed for management, marketing, and operational positions in the growing hospitality and tourism industry that provides food and beverage, accommodations, and tourism services. This curriculum is intended for those individuals who have earned college credits in other fields of study, or who have obtained life experience in other industries, but now wish to pursue career opportunities within the Hospitality and Tourism field. As a field of study, the Hospitality and Tourism Management certificate is interdisciplinary. As such, it draws upon a wide range of basic disciplines to provide students with the fundamental knowledge and skills required to fulfill the diverse demands placed upon individuals who pursue management positions within this industry. Students are able to select a concentration in Restaurant Food Service Management, Hotel and Lodging Management, or Tourism, Convention and Event Management. The complete program is available at the Harrisburg Campus.

## Career Opportunities

Upon completion of this degree, graduates of the Restaurant Food Service Management concentration may obtain employment as dining room managers, kitchen managers, beverage managers, banquet managers, and food event managers. The Hotel and Lodging Management concentration prepares students to enter employment as front office operations managers, rooms division managers, convention services managers, meeting planners and sales and marketing managers. Finally, the Tourism, Convention and Event Management concentration prepares students for employment as tour operators, tour guides, destination planners, destination promoters, and convention services managers. (SOC Code: 11-9051 – Food Service Managers; 11-9081 Lodging Managers)

Link to Occupational profiles on O\*NET: <http://www.onetcodeconnector.org/>

Application and admission information: <http://www.hacc.edu/NewStudents/Apply/index.cfm>

## Competency Profile

This curriculum is designed to prepare students to:

- Demonstrate basic skills needed in hospitality and tourism organizations
- Display competency in hospitality and tourism business subjects required for critical thinking applications
- Display competency in computer applications relevant to the hospitality and tourism industry
- Demonstrate technical operations, management, and supervisory skills
- Recognize how hospitality and tourism organizations work in synergy to enhance the economic viability of geographic areas, both domestic and foreign
- Embrace change to stay current with the ever changing face of hospitality and tourism
- Recognize how specialized training fits into the larger management and societal context

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 34)

General Education	Major Requirements	Other Required Courses
	CULI 100 The World of Wine	CIS 105 Intro to Software for Business
	HTMT 101 Intro to Hospitality & Tourism Industry	3
	HTMT 201 Tourism Theories & Practices	3
	HTMT 213 Marketing: Hospitality & Tourism	3
	HTMT 251 Hospitality Supervision	3
	HTMT 270 Convention & Events Management	3
		16
<b>Restaurant/Food Service Management Option</b>	<b>Hotel &amp; Lodging Management Option</b>	<b>Tourism, Convention &amp; Event Management Option</b>
CULI 113 Sanitation & Safety	2 HTMT 154 Supervisory Housekeeping	3 HTMT 202 Principles of Travel Selling
CULI 221 Basic Foods: Preparation & Production	4 HTMT 202 Principles of Travel Selling	3 HTMT 203 Group Travel Planning
HTMT 110 Menu Planning & Marketing	3 HTMT 212 Front Office Operations & Management	3 HTMT 225 Destination Geography
HTMT 125 Dining Room Management	3 HTMT 269 Hospitality Industry Computer Systems	3 HTMT 279 Travel Reservation System
HTMT 231 Cost Control: Food, Beverage & Labor	3 MKTG 235 Digital Media Marketing	3 MKTG 235 Digital Marketing Media
	15	15

Please see the College's website at <http://www.hacc.edu/ProgramsandCourses/Hospitality-and-Tourism-Management-1101.cfm> for the most current Gainful Employment Information.

## HUMAN SERVICES, Associate in Applied Science Degree - 5556

Health & Public Service Department

The Human Services AAS program prepares students to work as human service professionals who are able to provide direct-service delivery to clients in a variety of community-based social service agencies. Students are able to select from one of two tracks: the **General Human Services** and **Drug and Alcohol Services**. The General Human Services track promotes a generalist perspective that ensures that students obtain the knowledge and skills necessary to function in most human service settings. The Drug and Alcohol Services track is more specialized and builds upon that perspective by focusing on a specific client group. The General Human Services track is accredited by the Council for Standards in Human Service Education. Students are required to complete a Pennsylvania Child Abuse History Clearance, FBI Criminal Background Check, and a State Police Criminal Record Check prior to enrollment into the practicum course. If the student has any questions regarding this, he or she should contact the Program Director or Practicum Coordinator. Both tracks can be completed at the Harrisburg and Lancaster campuses. The General Human Services Track can be completed at the Gettysburg, Lebanon and York campuses. The Drug and Alcohol Services Track can be completed at the York Campus by taking some courses through Virtual Learning.

### Career Opportunities

Graduates of the program receive the training and education for entry-level positions in a number of social and human service fields, such as family services, women's programs, rehabilitation for alcohol dependency, and services for people with intellectual disabilities.

### Competency Profile

#### General Human Services

This curriculum is designed to prepare students to:

- Establish and maintain effective working relationships with clients and their families to plan treatments and/or services
- Perform case management responsibilities in a variety of settings
- Explain the ethics and laws applicable to the human service field
- Recognize the characteristics of culturally diverse populations

#### Drug and Alcohol Services

The curriculum is designed to prepare students to:

- Establish and maintain effective working relationships with clients and their families to plan treatments and/or services
- Discuss the use of drugs and alcohol from a historical, social, biological, and psychological perspective
- Discuss the current models of drug and alcohol prevention and treatment
- Conduct effective crisis and brief intervention counseling techniques and strategies
- Identify the symptoms and behaviors that constitute the basis for diagnostic assessments
- Explain the ethics and laws applicable to the drug and alcohol field

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 60)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	HUMS 100 Introduction to Human Services	3	SOCI 201 Introduction to Sociology	3
COMM 203 Interpersonal Communication	3	HUMS 108 Drugs & Alcohol: Use & Abuse	3		
Humanities & Arts Elective*	3	HUMS 215 Fieldwork Practicum	4		
Mathematics or Science Elective - MATH 111	3		10		
Social & Behavioral Science Elective - PSYC 101	3				
First-Year-Seminar Elective	1				
Wellness	1				
	17				

\*Students are to select courses from the following: ART 181 or 182; ENGL 206; HUM 101, 115 or 201; MUS 104; PHIL 200; THTR 101; or a foreign language course.

#### General Human Services Track

HUMS 120 Social Welfare Programs and Policies	3
HUMS 121 Skills and Methods in Human Services I	3
HUMS 122 Skills and Methods in Human Services II	3
HUMS 200 Group Work Practice	3
HUMS 206 Human Development in a Social Environment	3
SOCI 205 Racial and Cultural Relations	3
Program Electives**	12
	30

#### Drug and Alcohol Track

HUMS 109 Drug and Alcohol: Issues & Treatment	3
HUMS 122 Skills and Methods in Human Services II	3
HUMS 216 Crisis and Brief Intervention Counseling	3
HUMS 217 Addictions Counseling Interventions	3
HUMS 218 Co-Occurring Disorders	3
HUMS 219 Drug and Alcohol Screening & Assessment	3
HUMS 220 Drug and Alcohol Foundational Counseling Skills	3
Program Electives***	9
	30

\*\*Students are to select from the following: BIOL 111; CJ 101; ENGL 104 or 106; GERT 211, 215; HUMS 109, 216, 217, 218; PSYC 213, 229; SOCI 202, 203.

\*\*\*Students are to select from the following: BIOL 105, 111; CJ 101; ENGL 106; GERT 211, 215; HUMS 200, 206; PSYC 213, 229; SOCI 202, 203.

Notes: A minimum grade of C must be earned in all HUMS, PSYC, and SOCI courses. Other elective courses may be substituted upon approval by the Program Director and/or Department Chair.

### RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students can complete this program by taking one or more courses each semester.

#### Human Services General

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
ENGL 101	3	COMM 203	3	HUMS 121	3	Humanities/Arts Elective	3
FYS Elective	1	HUMS 120	3	HUMS 122	3	HUMS 200	3
HUMS 100	3	HUMS 206	3	SOCI 205	3	HUMS 215	4
HUMS 108	3	SOCI 201	3	Program Electives	6	Program Electives	6
Math/Science Elective	3	Social/Behavioral Science Elective	3				
Wellness	1						

#### Drug and Alcohol Services

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
ENGL 101	3	COMM 203	3	HUMS 122	3	Humanities/Arts Elective	3
FYS Elective	1	HUMS 109	3	HUMS 216	3	HUMS 220	3
HUMS 100	3	HUMS 217	3	HUMS 219	3	HUMS 215	4
HUMS 108	3	HUMS 218	3	SOCI 201	3	Program Electives	6
Math/Science Elective	3	Social/Behavioral Science Elective	3	Program Elective	3		
Wellness	1						

# INDUSTRIAL TECHNOLOGY, Associate in Applied Science Degree - 4680

Engineering & Technology Department

The Industrial Technology AAS degree prepares students for job advancement or to transfer to a four-year institution to obtain a bachelor's degree in technology-dependent fields such as, automotive technology and service, building construction, electronics, heating, ventilating and air conditioning, electrical technology, automated systems maintenance and manufacturing, machine design, and welding to name a few. This program is designed to afford students with the flexibility to tailor their coursework to meet their individual occupational or transfer goals. The complete program is available at the Harrisburg and York campuses, as well as through Virtual Learning. Students may also complete this program at the Lancaster Campus by taking some courses through Virtual Learning.

## Career Opportunities

Graduates are able to advance in technology-dependent fields related to their plan of study. In addition, graduates may advance their education and transfer coursework to a four-year institution offering technical programs.

## Competency Profile

This curriculum is designed to prepare students to:

- Utilize computer software for business applications and recognize the importance of computers in today's technology
- Apply specialized industrial technology skills in the chosen specialty area
- Implement health and safety regulations, policies, and required business procedures and practices
- Design technology solutions to improve performance of industrial processes.
- Explain how the broad field of business interrelates in a global environment

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 61)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I (or)	3	CIS 105 Intro to Software for Business	3	Program Electives**	30
ENGL 110 Foundations of Professional Writing	(3)	Mathematics Elective (100-299)	3		
COMM 101 Effective Speaking	3	MKTG and/or MGMT Electives	6		
Humanities & Arts Elective	3		12		
Mathematics or Science Elective	3				
Social & Behavioral Science Elective*	3				
First-Year Seminar Elective - BUSI 101	3				
Wellness	1				
	19				

\*Students are to select electives from the following courses: ANTH 201 or 205; COMM 253; GEOG 201 or 230; HIST 102; PSYC 229; SOCI 202 or 203.

\*\*Students select their program electives from the following subject areas: AUTO, CAD, CARP, ELEC, ELOC, FIRE, GTEC, HBR, HVAC, IA, IMT, or WELD.

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part time students can complete this program by taking one or more courses each semester.

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
BUSI 101	3	COMM 101	3	Program Specific Electives	15	Program Specific Electives	15
CIS 105	3	MGMT and/or MKTG Electives	6				
ENGL 101 or 110	3	Mathematics Elective	3				
Humanities/Arts Elective	3	Social/Behavioral Science Elective	3				
Math/Science Elective	3	Wellness	1				

## INTERNATIONAL STUDIES, Associate in Arts Degree - 5030

### Social Science Department

The International Studies AA program provides a solid foundation for students who plan to major in international studies, international relations, or political science with a concentration in international relations or area studies. Since the requirements of senior institutions vary widely, it is essential to choose an intended transfer institution as soon as possible and carefully follow the program described in that college's catalog. The complete program is available at the Harrisburg, Lancaster, and York campuses. Students can complete the program at the Lebanon campus by taking some courses through Virtual Learning.

### Transfer Opportunities

This transfer curriculum is provided as a guide for students planning to transfer to a baccalaureate degree granting institution. Such a major can lead to a career in the international political science field in United States Diplomatic Services, or in a wide range of international organizations.

### Competency Profile

This curriculum is designed to prepare students to:

- Transfer into an international relations program at a four-year institution
- Define international relations, which include the terminology, institutions, and issues associated with international relations
- Understand essential methodologies, perspectives, approaches, processes, and sources customarily used in the field of international relations
- Describe the major issues and/or future challenges to the current problem and concerns discussed in international relations along with possible responses, and/or solutions
- Describe how factors such as culture, institutions, environment, knowledge, beliefs, and/or ideology have influenced the conduct and effects of international relations
- Express an intermediate level of proficiency in a foreign language
- Explain the technology and communication forms and methods used in discussing and disseminating knowledge areas in the study of international relations

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 60)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	*Computer Elective	3	Transfer Electives	13
ENGL 102 English Composition II	3	GEOG 201 World Geography	3		
COMM 101 Effective Speaking	3	GP 201 Introduction to American Government	3		
Humanities & Arts Elective	3	GP 205 International Relations	3		
Humanities & Arts Elective <b>or</b> Social & Behavioral Science Elective - ANTH 101	3	GP 208 Comparative Government	3		
Mathematics Elective	3	HIST 101 World History I ( <b>or</b> )	3		
Social & Behavioral Science Elective - ECON 201	3	HIST 201 Western Civilization I	(3)		
Science w/ a Laboratory Elective	3	HIST 102 World History II ( <b>or</b> )	3		
First-Year Seminar Elective	1	HIST 202 Western Civilization II	(3)		
Wellness	<u>1</u>		21		
	26				

Foreign Study Option: Students should consult with their advisors for sequencing.

\* Choose any CIS course except CIS 100 (CIS 105 recommended)

### RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students can complete this program by taking one or more courses each semester.

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
ENGL 101	3	ENGL 102	3	ANTH 101	3	CIS Elective	3
FYS Elective	1	GEOG 201	3	ECON 201	3	COMM 101	3
GP 201	3	GP 205	3	GP 208	3	Humanities/Arts Elective	3
HIST 101 <b>or</b> 201	3	HIST 102 <b>or</b> 202	3	Transfer Elective	4	Science w/ Lab Elective	3
Mathematics Elective	3	Transfer Elective	3			Transfer Elective	3
Transfer Elective	3					Wellness	1

# LIBERAL ARTS, Associate in Arts Degree - 2091

Communication, Humanities and the Arts Department

The Liberal Arts, AA program is designed for students who plan to seek a four-year degree specializing in English or English literature, History, Humanities, Music, World Languages, or related major at a four-year institution. This program provides students with the opportunity to select from a variety of courses to fit their area of interest and/or explore topics within the liberal arts. Since the requirements of senior institutions vary widely, it is essential that students choose an intended transfer institution as soon as possible and carefully follow the program described in that institution's college catalog. The complete program is available at all of HACC's campus locations, as well as through Virtual Learning.

## Transfer Opportunities

This transfer curriculum is provided as a guide for students planning to transfer to a baccalaureate degree granting institution.

## Competency Profile

This curriculum is designed to prepare students to:

- Transfer into a Liberal Arts major such as English Language or Literature, History, Humanities, Music, or World Languages at a four-year institution
- Apply the fundamental concepts associated with the disciplines studied to analysis, research, writings, and presentations
- Analyze, interpret, and critique the assertion of ideas and conclusions within the context of a global community
- Recognize the influence of cultural, historical, geographical, political, religious, and social context on creative expressions

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 60)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	CIS Elective*	3	Global Awareness Elective***	3
ENGL 102 English Composition II	3	Humanities Transfer Electives**	18	Transfer Electives****	10
COMM 101 Effective Speaking	3		21		13
Humanities & Arts Elective - HUM 101	3				
Humanities & Arts Elective <b>or</b> Social & Behavioral Science Elective	(3)				
Mathematics Elective	3				
Science w/ a Laboratory Elective	3				
Social/Behavioral Science Elective	3				
First-Year Seminar Elective	1				
Wellness	1				
	26				

\*Choose any CIS course except CIS 100 (CIS 105 recommended)

\*\*Select courses in ARAB, ART (181 – 185); CHIN; ENGL (not 001-102 or 901); FRCH; GRMN; HIST; HUM; MUS; SPAN

\*\*\*Select courses in ANTH 205; ART 181; COMM 253; GEOG 201 or 230; HIST 101 or 102; MUS 104; or PHIL 200.

\*\*\*\*Students select courses appropriate for the transfer college; see HACC catalog for suggested options.

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students can complete this program by taking one or more courses each semester.

Fall Semester		Spring Semester		Fall Semester		Spring Semester	
COMM 101	3	CIS Elective	3	Humanities Transfer Electives	9	Global Awareness Elective	3
ENGL 101	3	ENGL 102	3	Transfer Elective (s)	4	Humanities Transfer Elective	6
FYS Elective	1	Humanities/Transfer Elective	3	Wellness	1	Transfer Electives	6
		Humanities/Arts <b>or</b> Social/Behavioral					
HUM 101	3	Science Elective	3				
Mathematics Elective	3	Science w/ a Lab Elective	3				
Social/Behavioral Science Elective	3						

## **MASSAGE THERAPY, Certificate – Noncredit**

*Workforce Development/Healthcare Education*

Massage Therapy is a healing art as well as a science. It requires a balance of academic and technical knowledge, clinical skills, manual dexterity, sensitivity, and awareness. It requires a sincere desire to help others, along with a commitment to the time, energy, and focus necessary for the training process in order to become a solid practitioner. Working alone, or in consultation with other healthcare professionals (physical therapists, physicians, chiropractors), Massage Therapists perform assessments and manipulation of soft tissues of the body to effect a therapeutic response in the treatment and prevention of physical dysfunction. The result can be preventative or restorative, helping to maintain, rehabilitate, augment physical function and/or relieve pain. The following requirements must be completed (at the student's expense) after acceptance in the program and before the start of class: a 2-Step PPD, PA State Police Criminal Background Check and an FBI Check if the student has not resided in Pennsylvania for the past two consecutive years. Students should consider these factors prior to enrolling. Any questions regarding this information may be directed to the Massage Therapy Program Coordinator at (717) 221-1386. The complete program is 900-hours and is presented in a blended format (classroom meetings plus required online work). It is available at the Harrisburg Campus. Certificates are awarded upon successful completion of the program.

### *Career Opportunities*

Graduates of this program are prepared to enter the healthcare profession as Massage Therapists in settings that include private or group massage practices, health clubs or fitness centers, chiropractic or medical offices, nursing homes, health spas and resorts, cruise ships, sports medicine facilities, and physical therapy centers. Some Massage Therapists have portable equipment and work at their clients' offices or homes. (SOC Code: 31-9011 Massage Therapists)

Link to occupational profiles on O\*NET: <http://www.onetcodeconnector.org/> Application and Admission information: <http://www.hacc.edu/HealthCareers/index.cfm>

### *Competency Profile*

This curriculum is designed to prepare students to:

- Have a working knowledge of the structure and function of the human body and how it is affected by massage
- Take a client health history and determine an appropriate course of massage therapy treatment
- Perform relaxation massage
- Perform therapeutic massage
- Communicate effectively with clients and other healthcare providers
- Behave in an ethical manner
- Take the State Licensing Exam for Therapeutic Massage

\*Completion of this 900-hour certificate program, state licensing exam and employment in the massage therapy field may allow articulation of up to 30-credits towards an Associate Degree in HACC's Health Science AAS program.

## **PROGRAM REQUIREMENTS**

Anatomy/Physiology/Kinesiology/Pathology  
Swedish Massage (I and II)  
Chair Massage  
Connective Tissue Therapy  
Neuromuscular Therapy  
Sports Massage  
Eastern Concepts

Awareness/Communication/Ethics  
Business Practices  
Special Populations  
Spa/Aromatherapy  
Student Studio

## **RECOMMENDED SEQUENCE FOR STUDENTS**

This program must be completed in sequence as part of a full –time day or part-time evening program.

*Please see the Colleges website at: <http://www.hacc.edu/ProgramsandCourses/Massage-Therapy-Program-0003.cfm> for the most current Gainful Employment information.*

## MATHEMATICS, Associate in Science Degree - 4076

Mathematics & Computer Science Department

The Mathematics AS degree prepares students to transfer to four-year institutions offering degrees in mathematics, operations research, and statistics. Since the requirements of senior institutions vary widely, it is essential to choose an intended transfer institution as soon as possible and carefully follow the program described in that college's catalog. The complete program is available at the Harrisburg and Lancaster campuses. Students may also complete the program at the York Campus by taking courses through Virtual Learning.

### Transfer Opportunities

This transfer curriculum is provided as a guide for students planning to transfer to a baccalaureate degree granting institution.

### Competency Profile

The curriculum is designed to prepare students to:

- Demonstrate the relationship between mathematical and visual representations
- Demonstrate the connections between mathematical concepts
- Solve problems by developing mathematical models, analyzing data, and creating or applying algorithms
- Effectively communicate mathematical ideas and their applications
- Demonstrate the ability to communicate, create, and collaborate effectively using technologies in multiple modalities

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 60)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	CPS 121 Computer Science I: Intro to Computer Programming JAVA	3	Transfer Electives	17
ENGL 102 English Composition II (or)	3	MATH 125 Discrete Mathematics	3		
ENGL 104 Technical Writing	(3)	MATH 221 Calculus III	4		
COMM 101 Effective Speaking	3	MATH 220 Linear Algebra (or)	4		
Humanities & Arts Elective*	3	MATH 222 Differential Equations	(4)		
Mathematics Elective (MATH 121)	4		14		
Mathematics or Science Elective (MATH 122)	4				
Science w/ a Laboratory (PHYS 211)	4				
Social & Behavioral Science Elective	3				
First-Year Seminar Elective	1				
Wellness	$\frac{1}{29}$				

\*Students select courses from the following: ART 181 or 182; ENGL 206; HUM 101, 115 or 201; MUS 104; PHIL 200; THTR 101; or a foreign language course.

### RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students can complete this program by taking one or more courses each semester.

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
COMM 101	3	CPS 121	3	MATH 125	3	MATH 220 or 222	4
ENGL 101	3	ENGL 102 or 104	3	MATH 221	4	Science w/ a Lab Elective	4
FYS Elective	1	Humanities & Arts Elective	3	Social/Behavioral Science Elective	3	Transfer Electives	8
Mathematics Elective	4	Math/Science Elective	4	Transfer Elective	3		
Transfer Elective	3	Transfer Elective	3	Wellness	1		

# MATHEMATICS - COMPUTER SCIENCE, Associate in Science Degree - 4030

Mathematics & Computer Science Department

The Mathematics-Computer Science AS program focuses on computer design, algorithm design, programming techniques, data structures, and a variety of programming languages. Since mathematical background is essential to success in this program, students must complete College Algebra or its equivalent to begin the program. Requirements of senior institutions vary widely, so it is essential to choose an intended transfer institution as soon as possible and carefully follow the program described in that college's catalog. Students completing this degree are admitted at the Junior-level to any institution participating in Pennsylvania's statewide college credit transfer system. The complete program is available at the Harrisburg Campus. Students may also complete the program at the Lancaster Campus by taking some courses through Virtual Learning.

## Transfer Opportunities

This transfer curriculum is provided as a guide for students planning to transfer to a baccalaureate degree granting institution.

## Competency Profile

The curriculum is designed to prepare students to:

- Analyze problem situations and create algorithms to solve those problems
- Use mathematical concepts and models to analyze data
- Select appropriate control structures, data structures, and abstract data types for implementing computer solutions
- Code computer programs that are effective, efficient, and accurate
- Work as part of a professional team to design, code, test, and debug mathematically based object-oriented computer software

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 62)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	CIS 110 Introduction to Computer Systems (or)	3	BIOL 102 General Biology II or	4
ENGL 102 English Composition II (or)	3	CNT 120 Network Communications Technology	(3)	CHEM 102 General Inorganic Chem & Qualitative Analysis or	(4)
ENGL 104 Technical Writing	(3)	CPS 121 Computer Science I: Intro to Computer Programming JAVA	3	PHYS 202 General Physics II or	(4)
COMM 101 Effective Speaking	3	CPS 161 Computer Science II: Algorithmic Design JAVA & C++	3	PHYS 212 Physics for Engineers & Scientists II	(4)
Humanities & Arts Elective*	3	CPS 162 Computer Science III: Data Structures C++	3	Transfer Elective**	3
Mathematics Elective - MATH 121	4	CPS 230 Object Oriented Programming JAVA	3		7
Mathematics or Science Elective - MATH 122	4	MATH 125 Discrete Mathematics	3		
Science w/ a Laboratory Elective - BIOL 101, CHEM 101, PHYS 201, or PHYS 211	4	MATH 202 Introduction to Statistics	4		
Social & Behavioral Sciences Elective	3	MATH 220 Linear Algebra	4		
First-Year Seminar Elective	1		26		
Wellness	1				
	29				

\*Students select courses from the following: ART 181, 182; ENGL 206; HUM 101, 115, 201; MUS 104; PHIL 200; THTR 101; or a foreign language course.

\*\*Students are to select their Transfer Elective that are appropriate for their intended institution.

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students can complete this program by taking one or more courses each semester.

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
CIS 110 or CNT 120	3	COMM 101	3	BIOL 101, CHEM 101, PHYS 201 or 211	4	BIOL 102 or CHEM 102 or PHYS 202 or PHYS 212	4
CPS 121	3	CPS 161	3	CPS 162	3	CPS 230	3
ENGL 101	3	ENGL 102 or 104	3	MATH 202	4	Humanities/Arts Elective	3
FYS Elective	1	MATH 122	4	MATH 220	4	Social/Behavioral Science Elective	3
MATH 121	4	MATH 125	3	Wellness	1	Transfer Elective	3

# MECHANICAL ENGINEERING TECHNOLOGY, Associate in Science Degree - 4700

Engineering & Technology Department

The Mechanical Engineering Technology AS program prepares students to enter the job market as mechanical engineering technicians working with prototype technologies, mechanical systems, and manufacturing processes. Coursework allows students to operate state-of-the-art computer-aided-design (CAD) systems, computer-numerical-controls (CNC) and programmable logic controls (PLC) systems. The complete program is only available at the Harrisburg Campus.

## Career Opportunities

Graduates are prepared as technicians for the mechanical engineering field. Graduates are also prepared as technicians employable in the manufacturing industry.

## Competency Profile

This curriculum is designed to prepare students to:

- Write and speak effectively.
- Effectively operate a solid modeling system
- Identify the student's career path
- Solve engineering problems
- Analyze static structures using trigonometry
- Prepare technical reports and manuals
- Analyze dynamic problems using trigonometry
- Identify properties of engineering materials and their common modes of failure
- Perform basic programming of CNC tools and fabricate components
- Program and operate PLC systems
- Identify global and ethical engineering issues

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 64)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	CAD 154 Computer Aided Drafting & Design	3	Open Elective*	3
ENGL 104 Technical Writing	3	CAD 164 Advanced Computer Aided Drafting and Design	2		
COMM 101 Effective Speaking	3	CVTE 208 Strength of Materials	3		
Humanities & Arts Elective	3	ELEC 100 Fundamental of Electricity/Electronics	1		
Mathematics Elective - MATH 103	3	GTEC 104 Engineering Materials and Processes	3		
Mathematics or Science Elective - MATH 104	3	GTEC 201 Statics	3		
Science w/ a Laboratory Elective	3	GTEC 202 Statistical Quality Control	3		
Social & Behavioral Sciences Elective	3	GTEC 208 Strength Materials Lab	1		
First-Year Seminar Elective - ENGR 102	2	IA 205 Computer Numerical Control	3		
Wellness	1	IA 208 PLCs and Automation	2		
	27	MDES 201 Dynamics	3		
		MDES 204 Product Design	3		
		MDES 206 Fluid Flow	3		
		MDES 207 Machine Shop Theory and Practice	$\frac{1}{2}$		
			34		

\*Students are to select the Open Elective from the following courses: ACCT 101; CAD 115; CPS 113, 115, 135; CHEM 101; CVTE 120; ELEC 100, 101, 108, 125, 126; ENGR 291; IA 205, 208; MDRF 101, 103; MATH 119, 121, 202; MGMT 201; PHYS 201, 202; SET 201, 202.

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part time students can complete this program by taking one or more courses each semester.

Fall Semester I	Spring Semester I	Summer I	Fall Semester II	Spring Semester II
CAD 154	3 ENGL 104	3 COMM 101	3 CVTE 208	3 CAD 164
ENGL 101	3 ELEC 100	1 Social/Behavioral Sciences	3 GTEC 202	3 GTEC 208
ENGR 102	2 GTEC 104	3 Elective	3 IA 205	3 IA 208
Humanities/Arts Elective	3 GTEC 201	3	MDES 201	3 MDES 204
MATH 103	3 MATH 104	3	MDES 206	3 Open Elective
	MDES 207	1		Science w/ a Lab Elective
	Wellness	1		3

## SUGGESTED ADDITIONAL SEQUENCE FOR STUDENTS TRANSFERRING TO A BSMET PROGRAM

Fall Semester III for transfer students	Spring Semester III for transfer students
CHEM 101 (Inorganic Chemistry)	4 Transfer Electives*
Transfer Elective*	3 MATH 121 (Calculus I)
MATH 119 (Pre-Calculus, 12 Week Session)	4 PHYS 202 (General Physics II)
PHYS 201 (General Physics I)	4 Wellness (PSU Only)
Wellness (PSU Only)	$\frac{1}{2}$ Total Credits
Total Credits	16

\*Students are to select courses that are suited for their intended transfer institution.

# MECHANICAL TECHNOLOGY, Certificate - 4350

Engineering & Technology Department

CIP Code: 15.0805

The Mechanical Engineering Technology certificate teaches students solids modeling as well as two-dimensional and three-dimensional drafting techniques. The sophisticated, high technology of computer numerical controls (CNC) and programmable logic controls (PLC) systems for computer-assisted manufacturing is also included. The complete program is only available at the Harrisburg Campus.

## Career Opportunities

Graduates are prepared for entry-level employment as drafters or technical assistants in government or industry. (SOC Code: 17-3013 Mechanical Drafters)

Link to occupational profiles on O\*NET: <http://www.onetcodeconnector.org/>

Application and admission information: <http://www.hacc.edu/NewStudents/Apply/index.cfm>

## Competency Profile

This curriculum is designed to prepare students to:

- Draft design details and production drawings for mechanical components using a computer-aided-drafting (CAD) system
- Serve as entry-level programmers for numerical control (NC)/computer numerical control (CNC) equipment
- Install and test mechanical equipment
- Serve as aides to engineers and scientists
- Serve as apprentice machinists

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 30)

### General Education

### Major Requirements

### Other Required Courses

CAD 154 Computer Aided Drafting and Design	3	MATH 103 College Algebra	3
ELEC 100 Fundamentals of Electricity and Electronics	1	MATH 104 Trigonometry	3
ENGR 102 Engineering & Engineering – Tech Orientation	2	Program Specific Electives*	6
GTEC 104 Engineering Materials & Processes	3		12
GTEC 201 Statics	3		
IA 205 Computer Numerical Control	3		
IA 208 PLCs and Automation	2		
MDES 207 Machine Shop Theory and Practice	1		
	18		

\*Select from the options below: ACCT 101; CAD 115, 164; CPS 113, 115, 135; CHEM 101; CVTE 120, 208; ELEC 100, 101, 108, 125, 126; ENGR 291; GTEC 202, 208; MDES 201, 204, 206; MDRF 101, 103; MATH 119, 121, 202; MGMT 201; PHYS 201, 202.

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part time students can complete this program by taking one or more courses each semester.

Fall Semester I		Spring Semester I	
CAD 154	3	GTEC 104	3
ELEC 100	1	GTEC 201	3
ENGR 102	2	IA 205	3
MDES 207	1	IA 208	2
MATH 103	3	Program Electives	6
MATH 104	3		

Please see the College's website at <http://www.hacc.edu/ProgramsandCourses/Mechanical-Technology-4350.cfm> for the most current Gainful Employment Information.

# MECHATRONICS, Associate in Applied Science Degree - 4711

Engineering & Technology Department

The Mechatronics AAS degree program educates students through an integrated-systems approach that includes automation, process controls, and industrial robotics used throughout industry. Designed as a multidisciplinary program that incorporates theory and hands-on experience with a focus on advanced control systems and industrial robotics, Students gain the broad skill-set necessary to maintain, repair, and manage mechanical, electrical, electronic, fluid power, and automation control systems. Emphasis is placed on the integration of these systems and working successfully as part of a team. Graduates are prepared to for positions in which maintenance, troubleshooting, repairing, and modifying the designs of automated systems and equipment is required. The complete program is available at the Harrisburg Campus's Midtown location.

## Career Opportunities

Graduates find employment as multi-skilled technicians in a wide variety of industrial, manufacturing, and commercial settings. Although this program is designed to lead directly to employment, opportunities exist for students to transfer their coursework to four-year institutions and complete a bachelor's degree.

## Competency Profile

This curriculum is designed to prepare students to:

- Perform maintenance on electronic, electrical, pneumatic, hydraulic and mechanical systems
- Interpret and apply OSHA Safety Standards
- Use mechanic and measurement tools, power tools, and test equipment
- Read electrical, mechanical, and hydraulic / pneumatic prints
- Demonstrate practical knowledge of electrical and electronic fundamentals and motor controls
- Demonstrate practical knowledge in mechanical systems
- Demonstrate practical knowledge in fluid power systems
- Demonstrate practical knowledge in process control systems
- Troubleshoot and repair electronic, electrical, pneumatic, hydraulic, and mechanical systems
- Troubleshoot and repair electromechanical equipment and systems
- Troubleshoot AC and DC systems
- Program, wire, and troubleshoot contemporary programmable logic control (PLC) systems
- Design, program, wire, and troubleshoot IEC61131-3 programmable logic control (PLC) control systems including Human Machine Interface (HMIs)
- Effectively operate and develop basic programs for maintaining and troubleshooting industrial robots

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 63)

General Education	Major Requirements	Other Required Courses
ENGL 101 English Composition I	ELEC 144 Semiconductor Principles & Applications	3
ENGL 104 Technical Writing	ELOC 153 Fundamentals of Electricity	4
COMM 101 Effective Speaking	GTEC 101 Safety: OSHA-30 & NFPA 70E	3
Humanities & Arts Elective	IA 201 Motors and Controls I	4
Mathematics or Science Elective - MATH 111*	IA 202 Motors & Controls II	4
Social & Behavioral Science Elective - GEOG 201	IA 208 PLC's and Automation	2
First-Year Seminar Elective	IA 210 Industrial Robotics I	3
Wellness	IA 211 Industrial Robotics II	3
	IA 213 PLCs and Automation II	3
	IA 221 Sensor Technology	3
	IMT 108 Power Transmission	4
	IMT 110 Fluid Power	4
	WELD 111 Welding Applications	3
		43

\* May be replaced with a higher level MATH

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part time students can complete this program by taking one or more courses each semester.

Fall Semester I	Spring Semester I	Summer I	Fall Semester II	Spring Semester II
ELOC 153	ENGL 101	IA 202	COMM 101	ELEC 144
FYS Elective	IA 201		ENGL 104	Humanities/Arts Elective
GTEC 101	IA 208		GEOG 201	IA 211
IMT 108	IA 221		IA 210	IA 213
MATH 111	IMT 110		Wellness	WELD 111

# MECHATRONICS, Certificate - 4261

Engineering & Technology Department

CIP Code: 14.4201

Mechatronics is a multi-disciplinary program designed to provide students with the broad skill set required to maintain, repair, and manage the automated systems and machines used throughout industry. The certificate teaches students mechanical, electrical, electronic, fluid power, and control systems as they gain an understanding, through theory and hands-on experience, of how these systems integrate with one another. Graduates are prepared for positions in which maintaining, troubleshooting, repairing, and modifying the designs of automated systems and equipment is required. The complete program is available at the Harrisburg and Gettysburg campuses.

## Career Opportunities

Graduates find employment as multi-skilled technicians in industrial, manufacturing, and commercial settings.

(SOC Code: 49-9041 Industrial Machinery Mechanics)

Link to occupational profiles on O\*NET: <http://www.onetcodeconnector.org/>

Application and admission information: <http://www.hacc.edu/NewStudents/Apply/index.cfm>

## Competency Profile

This curriculum is designed to prepare students to:

- Perform maintenance on electronic, electrical, pneumatic, hydraulic and other mechanical equipment
- Interpret OSHA standards
- Use hand tools, power tools, and test equipment
- Demonstrate practical knowledge in electrical fundamentals, motor controls, and process control systems
- Demonstrate practical knowledge in mechanical systems
- Demonstrate practical knowledge in fluid power systems
- Read electrical and mechanical blueprints
- Troubleshoot basic AC systems
- Troubleshoot and repair electromechanical equipment systems

## PROGRAM REQUIREMENTS (TOTAL CREDITS =30)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	ELOC 153 Fundamentals of Electricity	4	MATH 111 Principles of Mathematics*	3
		GTEC 101 Safety: OSHA 30 & NFPA 70E	3		
		IA 201 Motors & Controls I	4		
		IA 208 PLC's and Automation	2		
		IA 221 Sensor Technology	3		
		IMT 108 Power Transmission	4		
		IMT 110 Fluid Power	4		
			<u>24</u>		

\*May be replaced with a higher level MATH offering.

Please see the College's website at <http://www.hacc.edu/ProgramsandCourses/Mechatronics-4261.cfm> for the most current Gainful Employment Information.

## MEDICAL ASSISTING, Certificate - 3210

Health & Public Service Department

CIP Code: 51.0801

Medical Assisting is a multi-skilled allied health profession with practitioners working primarily in ambulatory care settings such as medical offices and clinics. This program offers the student foundation skills in medical office administration and clinical patient care required for beginning practice in the field, as well as, grounding in the legal and ethical principles governing medical practice. The program is accredited by the Commission on Accreditation of Allied Health Education Programs based upon the recommendation of the Medical Assisting Education Review Board (MAERB). Students must take the Certified Medical Assisting (CMA AAMA) exam in order to fulfill the requirements of this degree to graduate. However, failure to pass this exam will not prevent a student from receiving their certificate in Medical Assisting. The complete program is available at the Harrisburg and Gettysburg campuses.

*Selective Program:* Entry into this program is not guaranteed with admission to the College; this is a selective and competitive admission program, specific admissions criteria must be met. Please go to the Health Careers website ([www.hacc.edu/healthcareers](http://www.hacc.edu/healthcareers)), or contact us by email at [start@hacc.edu](mailto:start@hacc.edu) for specific program entry requirements.

The following requirements must be completed (at the student's expense) after being selected for, but prior to starting the clinical portion of the program. Requirements include physical examination and immunizations, background checks, drug and alcohol screens and CPR certification. The student should consider these factors before enrolling. If the student has any questions regarding this, he or she should contact the program director.

### Career Opportunities

Graduates find employment in various health care facilities as Medical Assistants. (SOC Code: 31-9092 Medical Assistants)

Link to Occupational profiles on O\*NET: <http://www.onetcodeconnector.org/>

Application and admission information: <http://www.hacc.edu/NewStudents/Apply/index.cfm>

### Competency Profile

This curriculum is designed to prepare students to:

- Function effectively as members of the healthcare team
- Demonstrate the entry-level competencies prescribed by the American Medical Assistants Endowment
- Take the Certified Medical Assisting credentialing examination for Medical Assistants administered by the AAMA
- Demonstrate effective oral and written communication skills

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 37)

#### General Education

#### Major Requirements

#### Other Required Courses

BIOL 111 Intro to Human Biology (or)	3
BIOL 121 Anatomy & Physiology I	(4)
CIS 105 Intro to Software for Business	3
MA 110 Medical Terminology	3
MA 140 Intro to Medical Assisting	4
MA 142 Intro to Medical Laboratory Techniques	3
MA 150 Pathophysiology for Medical Assisting	3
MA 200 Pharmacology for Medical Assisting	3
MA 201 Pharmacology Laboratory	1
MA 212 Ambulatory Care Clinical Procedures	4
MA 213 Medical Insurance & Billing	3
MA 220 Medical Office Administration	3
MA 230 Medical Assisting Externship	<u>4</u>
	37

*Note: A grade of C or higher is required for all AH, BIOL, CIS, and MA courses. Students must take the Certified Medical Assisting (CMA AAMA) exam. Failure to pass this exam will not prevent the student from obtaining their certificate in Medical Assisting.*

Please see the College's website at <http://www.hacc.edu/ProgramsandCourses/Medical-Assisting-3210.cfm> for the most current Gainful Employment Information.

# MEDICAL LABORATORY TECHNICIAN, Associate in Science Degree - 3486

Health & Public Service Department

The Medical Laboratory Technician AS degree is designed to prepare a student for a career as a medical laboratory professional. The student acquires the technical expertise to perform a wide variety of laboratory tests that aid primary care providers in the diagnosis and treatment of disease. This program is fully accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). Students must complete following after admission into, but prior to starting, the clinical portion of this program: physical examination and required immunizations, background checks (Pennsylvania Child Abuse History Clearance, FBI fingerprint check, and the Pennsylvania State Police Criminal Record Check), and drug and alcohol screenings. The student should consider this factor before enrolling in this program. If the student has any questions regarding this, he or she should contact the Program Director at (717) 780-1953. The complete program is available at the Harrisburg Campus.

**Selective Program:** Entry into this program is not guaranteed with admission to the College; specific admissions criteria must be met. Please go to the Health Careers website ([www.hacc.edu/healthcareers](http://www.hacc.edu/healthcareers)), or contact us by email at [start@hacc.edu](mailto:start@hacc.edu) for information on specific program entry requirements. **Students must be aware that even though the program begins in Fall, they begin classes for this major during the Summer terms.**

## Career Opportunities

Graduates of this program obtain positions as Medical Laboratory Technicians in acute care facilities, physician office laboratories, clinics, independent laboratories, business, industry, and veterinary offices.

## Competency Profile

This curriculum is designed to prepare students to:

- Work effectively with other hospital personnel
- Demonstrate the skills prescribed by laboratory professional organizations as MLT entry-level knowledge and skills expected of a *new graduate* upon successful completion of a formal educational program.
- Successfully pass the national entry-level credentialing examination administered by certifying agencies of the profession
- Recognize how specialized training fits into the health care delivery system
- Write and speak effectively
- Appreciate accomplishments in the arts and sciences

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 67)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	MLT 120 Hematology & Coagulation	4	PBT 100 Intro Phlebotomy – Allied Health	2
ENGL 102 English Composition II	3	MLT 122 Immunology & Molecular Biology	3		
COMM 101 Effective Speaking	3	MLT 124 Immunohematology	4		
Humanities & Arts Elective	3	MLT 220 Clinical Microbiology I	4		
Mathematics Elective	3	MLT 222 Clinical Chemistry	4		
Mathematics or Science Elective - CHEM 100	3	MLT 224 Urinalysis & Body Fluids	2		
Science w/ a Laboratory - BIOL 111	3	MLT 226 Clinical Experience I	5		
Social/Behavioral Science Elective	3	MLT 228 Clinical Experience II	5		
First-Year-Seminar Elective - MLT 100	2	MLT 230 Clinical Microbiology II	4		
Wellness	1	MLT 236 Clinical Laboratory Management	2		
	27	MLT 238 Clinical Capstone Project	1		
			38		

Note: A grade of C, or higher, is required for ENGL 102; BIOL 111; CHEM 100; PBT 100; and all MLT courses.

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part time students can complete this program by taking one or more courses each semester.

Summer I	Fall Semester I	Spring Semester I	Summer II	Fall Semester II	Spring Semester II
BIOL 111 3	CHEM 100 3	MLT 120 4	MLT 124 4	Humanities/Arts Elective 3	COMM 101 3
ENGL 101 3	ENGL 102 3	MLT 220 4	MLT 224 2	MLT 226 5	MLT 228 5
	MLT 100 2	MLT 222 4	MLT 230 4	MLT 236 2	MLT 238 1
	MLT 122 3	Wellness 1		Mathematics Elective 3	Social/Behavioral Science Elective 3
	PBT 100 2				

## **MUNICIPAL POLICE ACADEMY PROGRAM - Noncredit**

### *Workforce Development/Law Enforcement & Public Service*

As the need for education and training of municipal police officers increases, the Senator John J. Shumaker Public Safety Center at HACC – Central Pennsylvania’s Community College continues to serve successfully as a certified police training center under the Municipal Police Officers’ Education and Training Commission (MPOETC).

In-service cadets are those individuals employed by a municipal police department or another law enforcement agency. These individuals are enrolled by the employing agency. Pre-service cadets are those cadets who attend on their own and are responsible for tuition and other expenses. The college offers both a full-time and a part-time academy at the Senator Jeffrey E. Piccola Law Enforcement Complex on the Harrisburg campus.

### *Career Opportunities*

Municipal police officers and county detectives are required to complete this 25-week police academy in order to attain certification, which is mandated by the MPOETC.

### *Competency Profile*

This curriculum is designed to prepare students to:

- Enforce criminal and traffic laws
- Develop proficiency in investigative techniques, verbal, and writing skills
- Develop proficiency in use of firearms and defense tactics
- Meet established standards of physical fitness
- Develop proficiency in operation of police patrol vehicles
- Develop skills in human relations and community-oriented policing
- Develop skills in patrol procedures and operations
- Develop skills in crisis management
- Receive certification in Emergency Medical Response

\*Upon successful completion of the Municipal Police Academy, the student is currently eligible to receive 21 credits upon enrolling in HACC’s Criminal Justice Transfer Associate degree curriculum. (Courses: CJ 104, CJ 201, Criminal Justice Electives, and Physical Education Electives)

### **PROGRAM ENTRANCE REQUIREMENTS (Pre-service cadets)**

- Must be a U.S. Citizen
  - Required to be a minimum of 21 years of age by the first day of firearms training
  - Possess a valid operators license
  - High school diploma or G.E.D (transcript required)
  - Submit college transcripts if applicable
  - A \$25 application fee is required at the time the application is submitted
  - A \$15 fee is required to take the Nelson-Denny Reading Test (a test on reading comprehension and spelling)
  - A \$25 fee is required to take the MPOETC Fitness Standard Test
  - The MPOETC Fitness Test consists of a 300 meter timed run, bench press, one-minute sit-ups, and 1 ½ mile run
  - Provide proof of medical insurance
  - Complete physical examination on MPOETC physical form
  - Meet vision requirement – at least 20/70 in stronger eye, corrected to 20/20; at least 20/200 in weaker eye, corrected to 20/40
  - Complete psychological examination (MMPI and a clinical interview with the psychologist) on MPOETC form
  - Obtain a Criminal History Check through the PA State Police (online at <https://epatch.state.pa.us/Home.jsp>)
  - Obtain an FBI Criminal History Check: (online at <http://www.fbi.gov/about-us/cjis/background-checks>)
  - Obtain a 10-year Department of Transportation driving record check (online at [www.dmv.state.pa.us](http://www.dmv.state.pa.us))
  - If applicable, submit a copy of military discharge document (DD214)
  - A letter of endorsement from a Chief of Police to be submitted to the MPOETC School Director
  - Three letters of reference from non-relatives
  - Three letters of reference from present or former employers
  - Successful completion of an oral interview
  - Agree in writing to abide by the Academy Policies and Procedures
  - Full-time pre-service cadets are not permitted to be employed during their attendance. This does not apply to part-time academy students.
- (Note: In-service cadets are enrolled through a similar process and requirements with their employing agency)

### **RECOMMENDED SEQUENCE FOR STUDENTS:**

Students must successfully complete the entire 25-week, 919-hour, police academy.

# MUSIC BUSINESS, Associate in Applied Science Degree - 1806

Business Studies Department

The Music Business AAS provides a broad music business curriculum that is focused on skill-development in multiple areas including music publishing and licensing, record-label marketing and touring, music product sales, concert promotion, recording studio production, electronic digital distribution and music-related technologies, such as MIDI. Music history, songwriting and music theory classes are offered, along with live performance development through private instruction and participation in ensembles and the HACC Music Club. Through HACC's music computer lab (Harrisburg campus), professional studio production at off-campus locations, and required internships, students experience learning in state-of-the-art facilities. The complete program is available at the Harrisburg Campus. Students may also complete this program at the Lebanon Campus by taking courses through Virtual Learning.

## Career Opportunities

Graduates of the program are prepared for careers in music business, music marketing, retailing, wholesaling, music publishing and licensing, concert promotion, arts promotion, audio and studio recording production and digital distribution technology in the music and entertainment field.

## Competency Profile

This curriculum is designed to prepare students to:

- Prepare and deliver oral and written presentations on music business concepts
- Develop skills in applied critical thinking and decision making
- Integrate various research methods to collect and analyze music marketing data in order to design music marketing strategies
- Identify the skills, concepts, and methodologies necessary to manage the legal, financial, artistic, and ethical issues that face the contemporary music business professional
- Identify the basic functions and business interrelationships that occur among the numerous business entities that exist within the music business industry
- Perform and function as a team member
- Compare and contrast basic foundational knowledge of music languages and genres
- Investigate changes to the music business, music media, and music management and distribution environments
- Utilize appropriate software and music technologies in order to complete audio and recording production assignments
- Demonstrate functional mastery of necessary collaborative skills by completing a final music marketing internship

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 60)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	ACCT 101 Principles of Accounting I	4	MATH 100 College Math for Business	3
ENGL 102 English Composition II (or)	3	MUS 119 Introduction to Music Theory (or)	3	MKTG 201 Principles of Marketing	3
ENGL 106 Business Writing	(3)	MUS 120 Music Theory I	(3)	Music or Music Industry Electives**	3
COMM 101 Effective Speaking	3	MUSB 111 Music Business and the Internet	3		9
Humanities & Arts Elective*	3	MUSB 214 Music Business Studies	3		
Mathematics or Science Elective	3	MUSB 224 Music Industry & American Popular Music	3		
Social & Behavioral Science Elective	3	MUSB 225 Entertainment & Music Promotion	3		
First-Year Seminar Elective (BUSI 101)	3	MUSB 226 Music Computer Applications	3		
Wellness	1	MUSB 228 Audio Technology	4		
	22	MUSB 291 Music Industry Internship	3		
			29		

\*Students are to select from the following courses: ART 181 or 182; ENGL 206; HUM 101, 115 or 201; MUS 104; PHIL 200; THTR 101; or a foreign language course.

\*\*Select 3-credits from the following courses: MUSB 227, 229 or MUS 111, 112, 115 & 116.

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part time students can complete this program by taking one or more courses each semester.

Fall Semester I	Spring Semester I	Summer I	Fall Semester II	Spring Semester II
ENGL 101	3 COMM 101	3 MUSB 291	3 MATH 100	3 ACCT 101
FYS Elective	3 ENGL 102 or 106	3	3 MUSB 225	3 MKTG 201
MUS 119 or 120	3 Humanities/Arts Elective	3	4 MUSB 228	3 MUSB 226
MUSB 111	3 MUSB 224	3	3 MUS or MUSB Elective	3 Math/Science Elective
MUSB 214	3 Wellness	1	3 Social/Behavioral Science Elective	3

# MUSIC AUDIO AND RECORDING TECHNOLOGY, Diploma - 0161

Business Studies Department

CIP Code: 10.0203

The Music Audio and Recording Technology diploma program gives students the opportunity to learn audio and recording technical skills necessary to participate in studio production and performance management, as well as in digital media production, distribution, and marketing. The complete program is only available at the Harrisburg Campus.

## Career Opportunities

Students who complete the program can be employed by sound production companies or recording studios as technicians. (SOC Code: 27-4014 Sound Engineering Technicians)

Link to Occupational profiles on O\*NET: <http://www.onetcodeconnector.org/>

Application and admission information: <http://www.hacc.edu/NewStudents/Apply/index.cfm>

## Competency Profile

This curriculum is designed to prepare students to:

- Cite examples of the expanding role the Internet and the World Wide Web has in all aspects of the music business
- Explain how the Internet/World Wide Web is a dynamic source of information in all areas of the music industry
- Demonstrate the basics of MIDI hardware and software and their respective applications to recording, editing, arranging, mixing, and printing of music
- Create new music in a digital audio format using audio loop technology and/or rendering MIDI files
- Create audio recordings in compliance with current industry standards
- Configure equipment for portable and installed sound systems, recording devices, and audio editing computers
- Differentiate various output standards including streaming, static web, digital media formats, audio for video, audio aspects of film, and many non-music media
- Interpret metering signals, digital over indications, and loudness perception to identify possible flaws in processed audio and attempt to avoid these flaws

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 17)

### General Education

### Major Requirements

### Other Required Courses

MUSB 111 Music Business and the Internet	3
MUSB 214 Music Business Studies (or)	3
MUSB 225 Entertainment & Music Promotion	(3)
MUSB 226 MIDI and Computer Applications	3
MUSB 227 Studio and Performance Production Operations	4
MUSB 228 Audio Technology	4
	17

Please see the College's website at <http://www.hacc.edu/ProgramsandCourses/Music-Audio-and-Recording-Technology-0161.cfm> for the most current Gainful Employment Information.

# NANOFABRICATION MANUFACTURING TECHNOLOGY, Associate in Applied Science Degree - 4690

Engineering & Technology Department

The Nanofabrication Manufacturing Technology AAS programs provides students with knowledge and skills used in chip manufacturing, pharmaceuticals, micro-electromechanical systems, sensors, biomedicine, opto-electronics, and cutting-edge computer displays. The Nanofabrication Manufacturing Technology program uses a resource-sharing approach to “high-tech” workforce development that permits students to gain hands-on skills in a laboratory environment at both HACC and at Pennsylvania State University. Once students successfully complete three semesters of background work with a minimum 3.0 GPA and obtain a letter of recommendation from a HACC electronics faculty member, they are able to go to the PSU Electronic Materials and Processing Research Laboratory (EMPRL), located in State College, Pa to complete their coursework. The program is only available at the Harrisburg Campus.

## Career Opportunities

Graduates of the program enter the job market as clean-room technicians in the semiconductor manufacturing industry.

## Competency Profile

This curriculum is designed to prepare students to:

- Assist a technical team in the clean-room environment
- Operate and maintain clean-room equipment
- Work in a micro- or nanofabrication environment
- Demonstrate proper safety when working in a chemical environment
- Demonstrate knowledge of clean-room procedures
- Identify global and ethical engineering issues

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 71)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	CAD 154 Computer Aided Drafting and Design	3	CHEM 100 Principles of Chemistry (or)	3
				CHEM 101 General Chemistry I	(4)
ENGL 104 Technical Writing	3	ELEC 101 Equipment Utilization	1	MATH 104 Trigonometry	3
COMM 101 Effective Speaking	3	ELEC 106 Fundamental of Electronics	4	MATH 202 Introduction to Statistics	4
Humanities & Arts Elective	3	ELEC 111 AC/DC Circuits I	4	PHSC 113 Introduction to Physical Science	3
Mathematics or Science Elective - MATH 103	3	ELEC 125 Introduction to PC Technology	3		13
Social & Behavioral Science Elective	3	ELEC 213 Digital Electronics	4		
First-Year Seminar Elective - ENGR 102	2	NFAB 211 Material, Safety & Equipment Overview	3		
Wellness	1	NFAB 212 Basic Nanofabrication Procedures	3		
	21	NFAB 213 Thin Films in Nanofabrication	3		
		NFAB 214 Lithography for Nanofabrication	3		
		NFAB 215 Materials Modification	3		
		NFAB 216 Characterization, Packaging & Testing	3		
			37		

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students can complete this program by taking one or more courses each semester.

Fall Semester I		Spring Semester I		Summer	Fall Semester II		Spring Semester II (Capstone Semester @ EMPRL)		
CAD 154	3	COMM 101	3	Humanities/Arts Elective	3	CHEM 100 or 101	3 or 4	NFAB 211	3
ELEC 101	1	ELEC 111	4	Social/Behavioral Science Elective	3	ELEC 106	4	NFAB 212	3
ELEC 125	3	ELEC 213	4	Wellness	1	MATH 202	4	NFAB 213	3
ENGL 101	3	ENGL 104	3			PHSC 113	3	NFAB 214	3
ENGR 102	2	MATH 104	3					NFAB 215	3
MATH 103	3							NFAB 216	3

## NURSING, Associate in Science Degree - 3456

### Nursing Department

The Nursing AS degree (ADN) prepares students to sit for the NCLEX® licensing exam. Successful completion of this exam is required by the PA State Board of Nursing to become a Registered Nurse (RN). RNs work to promote health, prevent disease, and help patients cope with illness. In addition, they are advocates and health educators for patients, families, and communities. This program provides students with vital nursing care experience as they provide direct patient care; observe, assess, and record symptoms, reactions, and progress; assist physicians with treatments and examinations; administer medications, and assist in convalescence and rehabilitation. Students are taught to develop and manage nursing care plans, instruct patients and their families in proper care, and help individuals and groups take steps to improve or maintain their health. Possible exposure to bloodborne pathogens and potentially hazardous materials may occur. All students accepted into the clinical component of the program must undergo a Pennsylvania Child Abuse History Clearance, State Police Criminal Record Check, and an FBI fingerprint clearance. Pennsylvania law states that the State Board of Nursing may refuse to license a person who has been convicted of a criminal action(s). This program also requires all students accepted into the clinical component to submit a health examination form completed by a physician/nurse practitioner/physician's assistant with immunization history including verification through blood work, and submit to a drug and alcohol screen. Competence in dosage calculation must be demonstrated on admission to and for progression in the Nursing program. (A dosage calculation course is offered for students who do not meet this requirement.) The student should consider all of these factors before enrolling in this program. If the student has any questions regarding this, he or she should contact the Program Director at the campus of his/her choice. This program is approved by the Pennsylvania State board of Nursing and accredited by the Accreditation Commission for Education in Nursing (ACEN). The complete Nursing program is available at the Gettysburg (day only), Harrisburg (day and evening), Lancaster (day and evening), and York (day and evening) campuses.

*Selective Program:* Entry into this program is not guaranteed with admission to the College. Specific admissions criteria must be met. Please go to the Health Careers website ([www.hacc.edu/healthcareers](http://www.hacc.edu/healthcareers)), or contact us by email at [start@hacc.edu](mailto:start@hacc.edu) for specific program entry requirements.

#### *Career Opportunities*

Graduates of the program are prepared for employment as registered nurses caring for patients in hospitals, extended care facilities, and health care delivery settings.

#### *Competency Profile*

**The Associate Degree Nursing Program Outcomes are derived from the 4-core concepts and 9-key components of the Conceptual Framework.**

This curriculum is designed to prepare students to:

#### **[Professionalism]**

- Possess a sense of professional identity and a commitment to the profession of nursing
- Qualify for RN Licensure Examination
- Demonstrate self-awareness, respect and value for differing perspectives, and expertise of all health care team members
- Adhere to the standards of professional practice
- Consistently demonstrate **ethical behavior**
- Manage safe, **competent**, patient-centered care
- Commit to **life-long learning**, possessing a spirit of inquiry which encourages continued personal and professional growth

#### **[Communication]**

- **Communicate** effectively in a therapeutic way with the patient, promoting human dignity, integrity, and human flourishing across the **life span**
- **Communicate** collaboratively and respectfully with other members of the health care team
- **Communicate** information
  - Verbally
  - Nonverbally
  - In writing
- Utilize Informatics to provide patient-centered care
- Utilization information interventions to promote health and assist the patient in the navigation of the healthcare system

#### **[Critical Thinking]**

- Demonstrate problem-solving using the nursing process and evidence-based practice
- Provide patient-centered care utilizing the nursing process
- Utilize **evidence-based practice** as a basis for formulating nursing judgments
- Demonstrate critical thinking to deliver **clinically competent care** in accordance with the national patient safety initiatives



# PARALEGAL STUDIES, Associate in Applied Science Degree - 5706

Business Studies Department

The Paralegal Studies AAS degree, which is approved by the American Bar Association (ABA), prepares students to work as paralegals assisting attorneys in law firms, corporate legal departments, insurance companies, title companies, federal, state or local courts and government agencies. **Paralegals may not provide legal services directly to the public, except as permitted by law.** This program is available at the Harrisburg and Lancaster campuses.

## Career Opportunities

Graduates are likely to be employed in a variety of law-related positions including in private and corporate practice, government agencies, insurance companies, titles companies, federal, state, or local courts, and law libraries. Transfer options are available for students wishing to pursue their bachelor degree.

## Competency Profile

This curriculum is designed to prepare students to:

- Demonstrate a mastery of legal terminology, substantive and procedural law, and ethical rules
- Conduct legal research and prepare legal memoranda and briefs
- Draft correspondence and litigation documents (complaints, answers, motions, discovery documents)
- Draft a variety of legal documents including, but limited to, bankruptcy schedules, divorce complaints, property settlement agreements, support calculations, wills, inheritance tax returns, corporate filings, fictitious name filings, deeds, HUD-1 settlement sheets.
- Identify and analyze the ethical issues that may arise for the paralegal
- Write and speak effectively
- Develop critical thinking and communication skills through the appreciate accomplishments in the arts and sciences

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 61)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	PLGL 102 Legal Research and Writing I**	3	Program Specific Electives***	18
ENGL 102 English Composition II	3	PLGL 104 Legal Research and Writing II	3	Open Elective	3
COMM 101 Effective Speaking	3	PLGL 105 Contracts	3		21
Humanities & Arts Elective	3	PLGL 201 Civil Litigation I**	3		
Mathematics or Science Elective	3	PLGL 202 Civil Litigation II	3		
Social & Behavioral Science Elective*	3	PLGL 210 Paralegal Ethics and Professionalism	3		
First-Year-Seminar Elective - PLGL 101	3		18		
Wellness	1				
	22				

\*Students are to select from the following: ANTH 101 or 205; COMM 253; GEOG 201 or 230; HIST 102; PSYC 229; or SOCI 202 or 203.

\*\*Indicates courses that require a grade of C or higher.

\*\*\*Students select program electives from the following courses: CJ 203, 212; PLGL 203, 204, 206, 207, 209, 211 and 251.

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students can complete this program by taking one or more courses each semester.

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
COMM 101	3	ENGL 102	3	Math/Science Elective	3	Humanities/Arts Elective	3
ENGL 101	3	PLGL 102	3	PLGL 104	3	Open Elective	3
PLGL 101	3	PLGL 201	3	PLGL 202	3	PLGL 210	3
PLGL 105	3	Program Specific Electives	6	Program Specific Electives	6	Program Specific Electives	6
Social/Behavioral Science Elective	3	Wellness	1				

## PARALEGAL STUDIES, Certificate - 5301

Business Studies Department

CIP Code: 22.0302

Students prepare to provide legal services, under attorney supervision, in law-related occupations, including private, corporate, and governmental law practice. The program is approved by the American Bar Association (ABA). The complete program is available at the Harrisburg and Lancaster campuses. Due to course sequencing, a minimum of three semesters are required to complete the certificate program.

**Paralegals may not provide legal services directly to the public, except as permitted by law.**

*Selective Program:* Entry into this program is not guaranteed with admission to the College. HACC's Paralegal Certificate Program is a post-baccalaureate certificate. Only students who can document completion of a baccalaureate degree will be admitted to the Certificate Program. Official transcripts should be submitted to HACC's Admission Office along with the application to the College.

### Career Opportunities

Graduates are employed as paralegals in private, corporate and governmental law practices, title insurance companies, and as assistants in law libraries. (SOC Code: 23-2011 Paralegals and Legal Assistants)

Link to Occupational profiles on O\*NET: <http://www.onetcodeconnector.org/>

Application and admission information: <http://www.hacc.edu/NewStudents/Apply/index.cfm>

### Competency Profile

This curriculum is designed to prepare students to:

- Conduct research and prepare legal memoranda and briefs
- Conduct computer-assisted legal research
- Prepare and draft litigation documents (complaints, answers, motions, discovery documents)
- Perform administrative tasks in a legal office
- Prepare and draft legal documents related to estates (wills, trusts), bankruptcy (petitions, schedules), domestic relations (support/property settlement agreements), real estate law (deeds, settlement sheets)

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 39)

#### General Education

#### Major Requirements

#### Other Required Courses

PLGL 101 Intro to Paralegal Studies  
PLGL 102 Legal Research & Writing I  
PLGL 104 Legal Research & Writing II  
PLGL 201 Civil Litigation I  
PLGL 202 Civil Litigation II  
PLGL 210 Paralegal Ethics & Professionalism

3	BUSI 201 Business Law I	3
3	CIS 105 Intro to Software for Business	3
3	*Program Specific Electives	15
3		21
3		
18		

\*Select five courses from the following:

BUSI 202 Business Law II  
CJ 203 Criminal Evidence  
CJ 212 Criminal Law & Procedure  
PLGL 203 Family Law  
PLGL 204 Estate Planning & Administration  
PLGL 206 Employment Law  
PLGL 207 Bankruptcy Law  
PLGL 209 Real Estate Law for Paralegals  
PLGL 211 Administrative Law  
PLGL 251 Paralegal Internship I  
PLGL 252 Paralegal Internship II

Please see the College's website at <http://www.hacc.edu/ProgramsandCourses/Paralegal-Studies-5301.cfm> for the most current Gainful Employment Information.



## PHILOSOPHY, Associate in Arts Degree - 2050

Communication, Humanities and the Arts Department

The Philosophy AA transfer degree allows students the opportunity to explore and examine various systems of beliefs and values in order to help them to better understand, expand, and support their own system of beliefs and values. This program fosters the development of skills in critical thinking, clear and precise writing, as well as more careful reading through investigating the major branches of philosophical inquiry. These include the history of philosophy and culture, ethics and value theory, logic, critical thinking, and the philosophy of science, theories of nature and reality, and the foundations of knowledge. In addition, this program provides the core courses specifically required to transfer into a bachelor's degree program with a major in Philosophy while also satisfying *some* of the requirements for a Religious Studies or interdisciplinary humanities major or minor. Since the requirements of senior institutions may vary, it is essential to choose a target transfer school as soon as possible and then carefully follow the program described in that school's catalog. The complete program is available at the Gettysburg, Harrisburg, Lancaster and York campuses, as well as Virtual Learning. The program can be completed at the Lebanon Campus by taking some courses through Virtual Learning.

### Transfer Opportunities

Graduates acquire a basic foundation in philosophy suitable for transferring into a four-year baccalaureate institution. In addition, a major in philosophy provides a solid foundation for students planning careers in medicine, law, the clergy, education, and business. Philosophy majors also succeed in executive or management positions in business, non-profit organizations, and governmental institutions where the ability to assimilate information rapidly and produce effective solutions to persistent and challenging societal problems is essential.

### Competency Profile

This curriculum is designed to prepare students to:

- Transfer into four-year colleges and universities to earn a Bachelor of Arts Degree in Philosophy
- Sharpen communication, writing, and research skills needed for framing hypotheses, analyzing a variety of qualitative and quantitative data, and for putting complex problems into manageable forms
- Exemplify effective decision-making and leadership skills by examining philosophies of both Western and Eastern cultures and cultivating sensitivity to other world views

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 60)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	HIST 101 World History I	3	CIS 105 Introduction to Software for Business	3
ENGL 102 English Composition II	3	HIST 102 World History II	3	PSYC 101 General Psychology	3
COMM 101 Effective Speaking	3	PHIL 101 Introduction to Philosophy	3	Transfer Electives**	10
Humanities & Arts Elective	3	PHIL 102 Logic	3		16
Humanities & Arts Elective <b>or</b> Social & Behavioral Science Elective	3	Philosophy Electives*	6		
Mathematics Elective	3		18		
Science w/ a Laboratory Elective	3				
Social & Behavioral Science Elective (Recommend: ANTH 101)	3				
First-Year Seminar Elective	1				
Wellness	1				
	26				

\*Students select Philosophy electives from the following: PHIL 200, 215 or 225.

\*\*Students are to select transfer electives appropriate for their intended transfer institution. See the HACC catalog for suggested options.

### RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students can complete this program by taking one or more courses each semester.

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
COMM 101	3	ENGL 102	3	Humanities & Arts Elective	3	CIS 105	3
ENGL 101	3	HIST 102	3	Philosophy Elective	3	Humanities/Arts Elective <b>or</b>	
FYS Elective	1	PHIL 102	3	Transfer Electives	7	Social/Behavioral Science Elective	3
HIST 101	3	PSYC 101	3	Wellness	1	Mathematics Elective	3
PHIL 101	3	Science w/ Lab Elective	3			Philosophy Elective	3
Social/Behavioral Science Elective	3					Transfer Elective	3

## PHYSICAL SCIENCE, Associate in Science Degree - 3076

### Science Department

The Physical Science AS degree provides students with the firm foundation in mathematics, science, and liberal arts necessary to transfer to and succeed in a baccalaureate degree program in astronomy, geology, meteorology, physics, and physical science. This program offers two options for the Physical Science AS degree: **Geology or a General Physical Science**. The Geology option is for students intending to go on to degrees in the Geology or Environmental Science fields. The General Physical Science option is for students intending to go on to degrees in Physics, Astronomy, Meteorology, or Physical Science. With appropriate further education, graduates may find jobs in astronomical research and/or planetarium operations (astronomy), the petroleum industry, the mining industry, or within a government agency (geology). They may also find employment at the National Weather Service as a weather researcher, or broadcasting (meteorology); within research and development at a university or in private industry, at a national laboratory, inspection, testing, and quality control, or other production-related jobs (physics); or as an environmental consultant or lawyer. Since the requirements of senior institutions and their degree programs vary widely, it is recommended that students choose an intended transfer institution as soon as possible and carefully align their course sequence with the program described in that institution's catalog. Both program options are available at the Harrisburg Campus. In addition, both options can be completed at the York Campus by taking courses through Virtual Learning. Lastly, the General Physical Science track can be fully completed at the Lancaster Campus.

### Transfer Opportunities

This transfer curriculum is provided as a guide for students planning to transfer to a baccalaureate degree granting institution. With appropriate further education, graduates may find jobs in astronomical research and/or planetarium operations (astronomy), the petroleum industry, the mining industry, or within a government agency (geology). They may also find employment at the National Weather Service as a weather researcher, or broadcasting (meteorology); within research and development at a university or in private industry, at a national laboratory, inspection, testing, and quality control, or other production-related jobs (physics); or as an environmental consultant or lawyer.

### Competency Profile

This curriculum is designed to prepare graduates of the program to:

- Transfer to and succeed in a baccalaureate program
- Ability to apply scientific principles and concepts including the scientific method to a variety of problems and situation.
- Knowledge of scientific methods accomplishments and how they affect technology, politics and society
- Demonstrate computer literacy in data manipulation, mining, and analysis
- Perform technical work in a typical laboratory while following appropriate safety procedures
- Effectively communicate results both orally and through written reports
- Demonstrate information literacy by appropriately vetting online information sources for truthfulness and scientific validity

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 62)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	CHEM 102 General Inorganic Chemistry/Qual. Analysis	4	Transfer Electives	6
ENGL 102 English Composition II (or)	3	MATH 122 Calculus II	4		
ENGL 104 Technical Writing	(3)	PHYS 212 Physics for Scientists & Engineers II	4		
COMM 101 Effective Speaking	3	General Physical Sciences Track** (or)	15		
Humanities & Arts Elective*	3	Geology Track	(15)		
Mathematics Elective (MATH 121)	4	GEOL 101 Physical Geology	(4)		
Mathematics or Science Elective (PHYS 211)	4	GEOL 102 Historical Geology	(4)		
Science w/ a Laboratory Elective (CHEM 101)	4	GEOL 201 Environmental Geology	(4)		
Social & Behavioral Science Elective	3	GIS 141 Introduction to Geospatial Technology	(3)		
First-Year-Seminar Elective (Rec: SCI 100)	1		27		
Wellness	<u>1</u>				
	29				

\*Students are to select courses from the following: ART 181 or 182; ENGL 206; HUM 101, 115 or 201; MUS 104; PHIL 200; THTR 101; or a foreign language course.

\*\*Students select 15-credits from the following courses: CHEM 203, 204; CPS 121 135, 161, 162; GEOL 101, 102, 201; GIS 141, 165, 205; MATH 220, 221.

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students can complete this program by taking one or more courses each semester.

### General Physical Science Track

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
ENGL 101	3	CHEM 102	4	COMM 101	3	PHYS 212	4
FYS Elective	1	ENGL 102 <b>or</b> 104	3	PHYS 211	4	Physical Science Electives	6
Mathematics Elective	4	Humanities/Arts Elective	3	Physical Science Electives	6	Social/Behavioral Science Elective	3
Science w/ a Lab Elective	4	MATH 122	4	Transfer Elective	3	Wellness	1
Transfer Elective	3	Physical Science Track Elective	3				

### Geology Track

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
ENGL 101	3	CHEM 102	4	COMM 101	3	GEOL 201	4
FYS Elective	1	ENGL 102 <b>or</b> 104	3	GEOL 102	4	PHYS 212	4
Science w/ a Lab Elective	4	GEOL 101	4	GIS 141	3	Social/Behavioral Science Elective	3
Mathematics Elective	4	MATH 122	4	Humanities/Arts Elective	3	Transfer Elective	3
Transfer Elective	3			Math/Science Elective	4	Wellness	1

## POLICE SCIENCE, Associate in Applied Science Degree - 6806

Social Science Department

The Police Science AAS degree provides students with the opportunity to obtain practical experience in the HACC Criminalistics Laboratory, one of the best-equipped crime laboratories in Pennsylvania. Students receive hands-on training in bloodstain pattern analysis, firearms examination, shooting reconstruction, police photography, crime scene processing, fingerprint analysis, polygraph, forensic pathology, and microscopy. This program may require the student to submit to an Act 34 Pennsylvania State Police Criminal Background Check prior to enrollment, prior to the start of a field experience, prior to testing and/or obtaining employment. The student should consider this factor before enrolling in this program. If the student has any questions regarding this, he or she should contact the department chair. The complete program is available at the Harrisburg Campus.

### Career Opportunities

Graduates are employed locally and nationally as municipal or state police officers, agents for specialized law-enforcement agencies, private investigators, private security supervisors, and evidence technicians.

### Competency Profile

This curriculum is designed to prepare students to:

- Discuss the history, philosophy, and organization of law enforcement and criminal justice systems
- Apply principles of police management and operations
- Demonstrate the proper methods of collection, documentation and preservation of evidence
- Identify the technologies commonly operated by police agencies.
- Practice the management and techniques of patrol operations
- Distinguish between the various theories that identify the causes of criminal behavior
- Explain the history, theory, and application of criminal law

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 61)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	CJ 101 Introduction to Criminal Justice	3	Criminal Justice Electives	6
ENGL 102 English Composition II (or)	3	CJ 104 Police Operations	3		
ENGL 104 Technical Writing (or)	(3)	CJ 108 Criminology	3		
ENGL 106 Business Writing	(3)	CJ 109 Instrumentation and Technologies	3		
COMM 101 Effective Speaking	3	CJ 201 Criminal Investigation	3		
Humanities & Arts Elective	3	CJ 203 Criminal Evidence	3		
Mathematics or Science Elective	3	CJ 206 Criminalistics	4		
Social & Behavioral Science Elective	3	CJ 208 Intermediate Criminalistics	4		
First-Year-Seminar Elective	1	CJ 211 Juvenile Justice	3		
Wellness	1	CJ 212 Criminal Law and Procedure	3		
	20	CJ 240 Ethics and Diverse Cultures	3		
			35		

### RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part time students can complete this program by taking one or more courses each semester.

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
COMM 101	3	CJ 104	3	CJ 109	3	CJ 208	4
CJ 101	3	CJ 201	3	CJ 206	4	CJ 240	3
CJ 108	3	CJ 203	3	CJ 211	3	Criminal Justice Electives	6
CJ 212	3	ENGL 102 or 104 or 106	3	Humanities/Arts Elective	3	Math/Science Elective	3
ENGL 101	3	Wellness	1	Social/Behavioral Science Elective	3		
FYS Elective	1						

## PRACTICAL NURSING, Certificate - 3270

Health & Public Service Department

CIP Code: 51.3901

Students are prepared for employment as Practical Nurses. As integral members of a health care team, Practical Nurses meet the basic needs of clients, carry out therapeutic procedures, and observe/report symptoms in response to treatment. The program is approved by the Pennsylvania State Board of Nursing and accredited by the Accreditation Commission for Education in Nursing (ACEN). The complete program is available at the Harrisburg and Lancaster campuses.

*Selective Program:* Entry into this program is not guaranteed with admission to the College; this is a selective and competitive admission program, specific admissions criteria must be met. Please go to the Health Careers website ([www.hacc.edu/healthcareers](http://www.hacc.edu/healthcareers)), or contact us by email at [start@hacc.edu](mailto:start@hacc.edu) for specific program entry requirements

The following requirements must be completed (at the student's expense) after being selected for, but prior to starting the clinical portion of the program. Requirements include physical examination and immunizations, background checks, drug and alcohol screens and CPR certification. The student should consider these factors before enrolling. If the student has any questions regarding this, he or she should contact the program director.

### Career Opportunities

Graduates of the program are employed as practical nurses caring for patients in hospitals, extended care facilities, and health care delivery settings.

(SOC Code: 29-2061 Licensed Practical and Vocational Nurses)

Link to Occupational profiles on O\*NET: <http://www.onetcodeconnector.org/>

Application and admission information: <http://www.hacc.edu/NewStudents/Apply/index.cfm>

### Competency Profile

This curriculum is designed to prepare students to [demonstrate]:

#### [Professionalism]

- Participate in *life-long learning*
- Qualify for NCLEX-PN Licensure Examination
- Demonstrate *ethical* behaviors in nursing practice
- Demonstrate accountability in nursing practice

#### [Communication]

- *Communicate* effectively with client, family and colleagues

#### [Critical Thinking]

- Utilize the *Nursing Process* to assist in the provision of *developmentally* appropriate care to clients with common well-defined health problems throughout the *life span*
- Demonstrate *critical thinking* using the *Nursing Process* to assist in the delivery of *clinically competent* care
- Collaborate in providing client care utilizing *evidence-based practice*

#### [Caring]

- Provide *holistic* care that reflects the client's values, cultures, and lifestyles
- Engage in caring behaviors to help achieve desired therapeutic outcomes
- Promote comfort and optimal level of functioning along the *health care continuum*

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 43)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	BIOL 100 Basic Microbiology (or)	1	PSYC 101 General Psychology	3
		BIOL 221 Microbiology	(4)	SOCI 201 Intro to Sociology	3
		BIOL 111 Intro to Human Biology (or)	3		6
		BIOL 121 Anatomy & Physiology I	(4)		
		NURS 100 Fundamentals of Practical Nursing	10		
		NURS 101 Concepts in Practical Nursing I	10		
		NURS 102 Concepts in Practical Nursing II	10		
			34		

### RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students can complete this program by taking one or more courses each semester.

Spring Semester I		Summer		Fall Semester I	
BIOL 100 or 221	1 or 4	NURS 101	10	NURS 102	10
BIOL 111 or 121	3 or 4	PSYC 101	3	SOCI 201	3
ENGL 101	3				
NURS 100	10				

Please see the College's website at <http://www.hacc.edu/ProgramsandCourses/Practical-Nursing-3270.cfm> for the most current Gainful Employment Information.

## PRE-HEALTH PROFESSIONS, Associate in Science Degree - 3150

Health & Public Service Department

The Pre-Health Professions AS degree is designed to allow students the ability to complete the first two years of a pre-health profession program, such as chiropractic, dentistry, medicine, pharmacy, veterinary, physical therapy, occupational therapy, and physician assistant, at HACC and then transfer onto 4-year institutions. Since the requirements of senior institutions vary widely, it is essential that a student choose an intended transfer institution as soon as possible and carefully follow the program described in that college's catalog. The complete program is available at the Gettysburg, Harrisburg, Lancaster, and York campuses.

### Transfer Opportunities

This transfer curriculum is provided as a guide for students planning to transfer to a baccalaureate (or higher) degree granting institution. Courses are offered for students who expect to transfer to four-year college or university programs in chiropractic, dentistry, medicine, pharmacy, veterinary, physical therapy, occupational therapy, and a physician assistant, or other science curricula.

### Competency Profile

This curriculum is designed to prepare the student to:

- Transfer with the skills required for success in a Baccalaureate degree program in the sciences
- Discuss and apply scientific principles and concepts
- Apply the scientific method to solve scientific problems
- Demonstrate communication of results both orally and through written reports
- Examine and apply a broad understanding of the political, social, environmental, economic, and cultural systems of the world
- Illustrate how to interact in a multi-cultural or cross-cultural environment
- Apply the principles of research, organization, and delivery for the preparation and presentation of speeches
- Demonstrate critical reading and critical thinking skills by integrating the ideas of others through the analysis and synthesis of information

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 60)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	BIOL 105 Medical Terminology	3	SOCI 201 Introduction to Sociology	3
ENGL 102 English Composition II	3	Program Electives**	15	Transfer Electives**	9
COMM 101 Effective Speaking	3		18		12
Humanities & Arts Elective*	3				
Mathematics Elective - MATH 103	3				
Mathematics or Science Elective - BIOL 122 or CHEM 101	4				
Science w/ a Laboratory Elective - BIOL 121	4				
Social & Behavioral Science Elective - PSYC 101	3				
First-Year Seminar Elective - AH 140	3				
Wellness	1				
	30				

\*Select from the following courses: ART 181, 182; ENGL 206; HUM 101, 115, 201; MUS 104; PHIL 200; THTR 101; or SPAN 104.

Select program and transfer electives from the following courses: BIOL 101, 102, 122, 215, 221; CHEM 101, 102, 203, 204; MATH 104, 119, 121, 202; PHYS 201 or 202. Students are to select their transfer electives that are appropriate for their intended transfer institution.

### RECOMMENDED SEQUENCE FOR FULL -TIME STUDENTS

Part time students can complete this program by taking one or more courses each semester.

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
AH 140	3	BIOL 105	3	BIOL 122 or CHEM 101	4	Program Electives	9
COMM 101	3	BIOL 121	4	Program Elective	3-4	Transfer Elective	3
ENGL 101	3	ENGL 102	3	SOCI 201	3	Wellness	1
MATH 103	3	Humanities/Arts Elective	3	Transfer Electives	6		
Program Elective	3-4	PSYC 101	3				

## PROFESSIONAL BOOKKEEPING, Certificate - 1206

Business Studies Department

CIP Code: 52.0302

The Professional Bookkeeping certificate prepares students for positions as professional bookkeepers and facilitate their passing of the certification exam indicating their expertise in this area. The curriculum includes preparation for a national exam sponsored by the American Institute of Professional Bookkeepers. Passing this exam, along with two years of experience in the field, allows students to use the designation of Certified Bookkeeper (CB). This certificate focuses on essential general business and accounting skills needed in today's bookkeeping environment and puts students on the fast track to a rewarding career. The complete program is available at the Harrisburg, Lebanon, York campuses, as well as through Virtual Learning. This program can also be completed at the Lancaster Campus by taking some courses through Virtual Learning.

### Career Opportunities

Graduates of this program may find employment as full-charge bookkeepers in any one of a variety of industries and businesses including accounting firms and even not-for-profit organizations. (SOC Code 43-3031 Bookkeeping, Accounting and Auditing Clerks)

Link to Occupational profiles on O\*NET: <http://www.onetcodeconnector.org/>

Application and admission information: <http://www.hacc.edu/NewStudents/Apply/index.cfm>

### Competency Profile

This curriculum is designed to prepare students to:

- Perform all functions of accounting for sole proprietorships, partnerships and corporations
- Implement an effective system of internal control
- Show proficiency in operating microcomputer-based accounting systems and developing solutions to accounting problems using computerized spreadsheets
- Access the Internet and operate websites and databases in order to retrieve and analyze business information
- Analyze financial statements, recognize potential problems and suggest appropriate solutions
- Complete bank reconciliations and track all needed payroll information for businesses

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 31)

#### General Education

#### Major Requirements

#### Other Required Courses

ACCT 101 Principles of Accounting I	4	BUSI 101 Introduction to Business	3
ACCT 200 Principles of Accounting II	4	CIS 105 Intro to Software for Business	3
ACCT 203 Income Tax Accounting	4	ENTR 101 Introduction to Entrepreneurship	3
ACCT 208 Professional Bookkeeping	4	Program Elective*	3
ACCT 215 Accounting Software Applications	3		12
	19		

\*Students select from MGMT or MKTG 100-299.

Please see the College's website at <http://www.hacc.edu/ProgramsandCourses/All-HACC-Programs.cfm> for the most current Gainful Employment Information.

# PSYCHOLOGY, Associate in Science Degree - 5156

Social Science Department

The Psychology AS transfer degree provides students with a solid foundation to transfer as a Psychology major to a wide range of Baccalaureate Institutions. Students receive a broad introduction to the field, an in-depth look into at least two subfields within Psychology, and a solid foundation in research design and analysis. Since some four-year institutions have specific preferences for course options, students are advised to identify their intended transfer institution as soon as possible and consult the associated transfer guide for that school. The complete program is available at the Harrisburg, Lancaster, Lebanon and York campuses.

## Transfer Opportunities

This transfer curriculum is provided as a guide for students planning to transfer to a baccalaureate-degree-granting institution. Students who plan to work in therapeutic or academic settings should expect to continue on to earn at least a Master's degree.

## Competency Profile

This curriculum is designed to prepare students to:

- Attain Basic-level competency across all major subfields of psychology
- Attain Developing-level competencies in at least two of the four major content categories as currently defined by the American Psychological Association: Human Development, Individual and Socio-cultural Differences, Learning and Cognition, and Biological Basis of Behavior and Mental Processes
- Develop Basic and Developing-level competency in Research Design and Analysis
- Comprehend biological processes as they relate to human and animal psychology and behavior and the environments in which they live
- Develop Basic and Developing-level understanding of critical thinking and evidence-based logic and reasoning
- Develop Basic and Developing-level understanding of the technology and communication forms and methods used in discussing and disseminating psychological ideas

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 61)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	PSYC 241 Research Design and Analysis I	4	BIOL 111 Intro Biological Science	3
ENGL 102 English Composition II	3	PSYC 242 Research Design and Analysis II	4	(or) BIOL 101 General Biology I	(4)
(or) ENGL 104 Technical Writing	(3)	Select 6 credits from two of the following three categories:	6	CIS 105 Intro to Software for Business	3
COMM 101 Effective Speaking	3	<b>Human Development (or)</b>		PHIL 102 Logic (or)	3
Humanities & Arts Elective	3	PSYC 209 Life Cycle Development (or)	(3)	PHIL 101 Intro to Philosophy (or)	(3)
Humanities & Arts or Science & Behavioral Science Elective - PSYC 101	3	PSYC 211 Psychology of Adolescence (or)	(3)	PHIL 215 Philosophy of Science (or)	(3)
Mathematics Elective - MATH 103, 119 or 121	3	PSYC 212 Child Growth & Development	(3)	PHIL 225 Ethics: Belief and Action	(3)
Mathematics or Science Elective	3	<b>Individual Processes (or)</b>	(3)	Transfer Electives**	9
Social & Behavioral Science Elective*	3	PSYC 213 Abnormal Psychology (or)	(3)		18
Science with a Laboratory Elective	3	PSYC 221 Social Psychology	(3)		
First-Year-Seminar Elective	1	<b>Biological Basis of Behavior &amp; Mental Process</b>			
Wellness	1	PSYC 226 Biopsychology	(3)		
	29		14		

\*Students select from the following: ANTH 101 or 205; COMM 253; GEOG 201 or 230; HIST 102; PSYC 229; SOCI 202 or 203.

\*\*Students are select transfer elective courses that are appropriate for the intended transfer institution.

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students can complete this program by taking one or more courses each semester.

Fall Semester I	Spring Semester I	Fall Semester II	Spring Semester II
CIS 105	BIOL 101 or 111	Math/Science Elective	Humanities/Arts Elective
ENGL 101	COMM 101	PHIL 101, 102, 215 or 225	PSYC 242
FYS Elective	ENGL 102 or 104	PSYC 241	Transfer Electives
PSYC 101	MATH 103, 119 or 121	Social/Behavioral Science Elective	
Science w/ Lab Elective	PSYC 101	PSYC Elective	
Wellness			

## RADIOLOGIC TECHNOLOGY, Associate in Science Degree - 3760

Health & Public Service Department

The Radiologic Technology AS program prepares students to enter the healthcare field as Radiologic Technologists, who perform general radiographic imaging. Coursework provides students with the knowledge and technical expertise to produce radiographic images of the human body, which are used by physicians to make a medical diagnosis. This program is offered in cooperation with affiliated physician offices, hospitals and medical imaging centers and provides students with both theoretical and practical instruction through in-class, virtual learning, and laboratory learning environments. Practical application is also provided through clinical instruction at these clinical affiliates. The program curriculum is structured so that courses are offered in both blended and face-to-face formats. Students are only required to attend in-class and lab-sessions at the campus one day per week. Graduates are eligible to take the national certifying examination given by the American Registry of Radiologic Technologists (ARRT). Previous conviction of a crime, including felony, gross misdemeanor, or misdemeanor, with the sole exceptions of speeding or parking violations, may result in denial to sit for the ARRT national registry examination. Therefore, any person interested in pursuing an education in Radiologic Technology who has any questions pertaining to his/her potential eligibility to qualify for taking the examination should seek guidance from the Department of Regulatory Services, ARRT, 1255 Northland Drive, St. Paul, Minnesota 55120, (651) 687-0048, before commencing coursework. This program is accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT), 20 North Wacker Drive, Suite #2850, Chicago, IL 60606-3182, (312) 704-5300, (<http://www.jrcert.org>). The complete program is only available at the Lancaster Campus.

**Selective Program:** Entry into this program is not guaranteed with admission to the College; this is a selective and competitive admission program, specific admissions criteria must be met. Please go to the Health Careers website ([www.hacc.edu/healthcareers](http://www.hacc.edu/healthcareers)), or by email [stuart@hacc.edu](mailto:stuart@hacc.edu)

### Career Opportunities

Graduates find employment as radiologic technologists or radiographers in hospital radiology departments, physician offices and independent medical-imaging centers.

### Competency Profile

This curriculum is designed to prepare students to:

- Be clinically competent radiographers
- Apply critical thinking skills
- Model professionalism
- Employ effective communication skills
- Model leadership qualities

### PROGRAM REQUIREMENTS (TOTAL CREDITS =75)

General Education		Major Requirements		Other Required Courses
ENGL 101 English Composition I	3	RADT 100 Intro to Radiologic Procedures	3	
ENGL 102 English Composition II	3	RADT 102 Introduction to Radiologic Tech	3	
COMM 203 Interpersonal Communication	3	RADT 105 Radiation Protection and Biology	2	
Humanities & Arts Elective - SPAN 104	3	RADT 106 Radiologic Tech Clinical Intro	3	
Mathematics Elective - MATH 103	3	RADT 107 Radiographic Procedures I	3	
Mathematics or Science Elective - BIOL 122	4	RADT 108 Radiation Characteristics & Production	3	
Science w/ a Laboratory Elective - BIOL 121	4	RADT 109 Radiologic Tech Clinical I	2	
Social & Behavioral Science Elective	3	RADT 111 Introduction to Radiation Sciences	3	
First-Year Seminar Elective	1	RADT 201 Radiographic Procedures II	3	
Wellness	1	RADT 202 Imaging Equipment	2	
	28	RADT 203 Radiologic Tech Clinical II	3	
		RADT 205 Radiographic Pathology	3	
		RADT 207 Radiologic Tech Clinical III	3	
		RADT 208 Imaging & Processing	3	
		RADT 209 Image Analysis	2	
		RADT 210 Intro to Computer Tomography	1	
		RADT 211 Radiologic Tech Clinical IV	3	
		RADT 212 Radiologic Technology Seminar	2	
			47	

Note: The following courses require a grade of C or higher: BIOL, COMM, ENGL, MATH, and RADT.

**RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS**

Part-time students can complete this program by taking one or more courses each semester.

Fall Semester I		Spring Semester I		Summer I		Fall Semester II		Spring Semester II		Summer II	
BIOL 121	4	BIOL 122	4	RADT 107	3	RADT 201	3	ENGL 102	3	RADT 205	3
ENGL 101	3	COMM 203	3	RADT 108	3	RADT 202	2	RADT 207	3	RADT 210	1
FYS Elective	1	RADT 100	3	RADT 109	2	RADT 203	3	RADT 208	3	RADT 211	3
MATH 103	3	RADT 105	2			SPAN 104	3	RADT 209	2	RADT 212	2
RADT 102	3	RADT 106	3			Wellness	1	Social/Behavioral Science Elective	3		
RADT 111	3										

## RADIOLOGY INFORMATICS, Associate in Applied Science Degree - 3786

Health & Public Service Department

The Radiology Informatics AAS program prepares students to enter the field of medical imaging informatics as Picture Archiving and Communication Systems (PACS) Administrators. Students are taught computer and radiology imaging basics, PACS interface and system analysis, project management and quality control, Digital Imaging and Communications in Medicine (DICOM) and Health Level 7 (HL7) messaging systems, and electronic health records (EHR), in addition to basic human biology. This program also includes 720-hours of practical clinical education in a PACS environment in which students may apply their skills in a “real world” setting. Students gain oral and written communication skills to aid them in working in PACS team and healthcare environments. Students are able to design and implement a “PACS Plan” for an imaging department within a health care facility. This program also includes 720 hours of practical clinical education in a PACS environment in which students may apply their skills in a “real world” setting. Students are eligible and prepared to take all three levels of certification exams through the PACS Administrators Registry and Certification Association (PARCA) before graduation. Additionally, graduates receive three-points in the Academic Education Category towards the required seven-point qualification system for taking the American Board of Imaging Informatics Certification (ABII). Graduates are eligible to take the ABII with two levels of PARCA certification and two years’ work experience in the field. Students taking their clinical coursework at one of HACC’s affiliated sites must submit to a physical examination, a drug and alcohol screening, the Pennsylvania Child Abuse History Clearance, the Federal Criminal Record Check and/or the State Police Criminal Record Check prior to the clinical experience and/or employment. The complete program is only available at the Lancaster Campus.

*Selective Program:* Entry into the clinical portion of this program is not guaranteed with admission to the College; specific admissions criteria must be met. Please see the Health Careers website ([www.hacc.edu/healthcareers](http://www.hacc.edu/healthcareers)), email [healthcareers@hacc.edu](mailto:healthcareers@hacc.edu) or contact (717) 780-1988 or (800) 222-4222 extension 1988 for more information.

### Career Opportunities

Graduates are prepared to work in medical imaging and information technology settings that utilize digital imaging, PACS, and Radiology Information System (RIS) as a PACS specialist/administrator. Graduates are also prepared to work in PACS equipment retail, PACS sales, and PACS support services.

### Competency Profile

This curriculum is designed to prepare students to:

- Function as an entry-level imaging informatics (PACS) administrator
- Demonstrate critical thinking and problem solving skills
- Demonstrate professional behavior while functioning as an informatics specialist
- Demonstrate effective communication skills
- Demonstrate effective project management skills
- Apply imaging informatics legal and ethical standards in the professional environment
- Comply within applicable imaging informatics professional standards
- Use appropriate safety practices within the clinical environment

### PROGRAM REQUIREMENTS (TOTAL CREDITS =69)

General Education		Major Requirements		Other Required Courses	
ENGL 110 Foundations in Professional Writing	3	RADI 100 DICOM	2	CIS 105 Intro to Software for Business	3
COMM 203 Interpersonal Communication	3	RADI 101 Health Level 7	3	CIS 140 Intermediate Micro Database	3
Humanities/Arts Elective (SPAN 104)	3	RADI 102 RADI Regulations, Quality Control, & Security	3	CNT 120 Network Comm. Tech I	3
Mathematics or Science Elective (BIOL 111)	3	RADI 103 PACS Interface & Systems Analysis I	2	ELEC 125 Introduction to PC Technology	3
Social & Behavioral Science Elective	3	RADI 201 RADI Project Management I	3	RADT 104 Intro to Radiology Informatics	4
First-Year-Seminar Elective	1	RADI 202 PACS Interface & Systems Analysis II	3	RADT 110 Radiology Basics for Informatics	4
Wellness	1	RADI 203 RADI Advanced Concepts I	4		20
	17	RADI 204 RADI Advanced Concepts II	4		
		RADI 205 RADI Project Management II	2		
		RADI 210 RADI Clinical I	3		
		RADI 211 RADI Clinical II	3		
			32		

Note: A grade of C or higher is required for all courses in the following disciplines: BIOL, CIS, CNT, COMM, ELEC, RADI, and RADT.

**RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS**

Part time students can complete this program by taking one or more courses each semester.

<b>Fall Semester I</b>	<b>Spring Semester I</b>	<b>Summer I</b>	<b>Fall Semester II</b>	<b>Spring Semester II</b>	<b>Summer II</b>
CIS 105 3	COMM 203 3	RADI 102 3	CIS 140 3	ELEC 125 3	RADI 204 4
CNT 120 3	Math/Science Elective 3	RADI 103 2	Humanities/Arts Elective 3	RADI 203 4	RADI 211 3
ENGL 110 3	RADI 101 3	Wellness 1	RADI 201 3	RADI 205 2	
FYS Elective 1	RADT 110 4		RADI 202 3	RADI 210 3	
RADI 100 2			Social/Behavioral Science Elective 3		
RADT 104 4					

# RESPIRATORY THERAPIST, Associate in Science Degree - 3920

Health & Public Service Department

The Respiratory Therapist AS program prepares students to enter the workforce as registered respiratory therapists. The program is offered in cooperation with Life Care Hospital of Mechanicsburg, Milton S. Hershey Medical Center, Holy Spirit Hospital – A Geisinger Affiliate, Pinnacle Health System, Summit Health, Wellspan York Hospital, Spring Creek Rehabilitation Hospital, FOX Subacute Hospital, and Pulmonary and Critical Care Associates. The Respiratory Therapist program is accredited by the Commission on Accreditation for Respiratory Care ([www.coarc.com](http://www.coarc.com)). Continuation in this program requires that the student receive a grade of C or higher in each course pursued. Graduation requirements include current Certification in American Heart Association BLS, American Heart Association Advanced Cardiac Life Support (ACLS) certification, professional development credits, and satisfactory performance on comprehensive written, laboratory, simulation, and oral exit examinations. Membership in the American Association for Respiratory Care (AARC) is required by the start of the second semester of the Respiratory Therapist program (#3920). The following must be completed after a student has been selected for, but prior to their start in, the clinical portion of the program and are also requirements for continuation: physical examination and required immunizations, background checks (Pennsylvania Child Abuse History Clearance, FBI fingerprint check, and PA State Police Criminal Record Check), and drug and alcohol screens. The student should consider these factors before enrolling in this program. If the student has any questions regarding this, he or she should contact the program director. In addition to tuition and fees, students must purchase uniforms, supplies, liability insurance, testing, and clinical parking fees. The complete program is available at the Harrisburg Campus.

**Selective Program:** Entry into this program is not guaranteed with admission to the College; this is a selective and competitive admission program, specific admissions criteria must be met. Please go to the Health Careers website ([www.hacc.edu/healthcareers](http://www.hacc.edu/healthcareers)) or email at [start@hacc.edu](mailto:start@hacc.edu) for specific program entry requirements.

## Career Opportunities

Graduates find employment as respiratory therapists in hospitals, nursing homes, rehabilitation centers, home healthcare companies, and as pharmaceutical sales representatives.

## Competency Profile

This curriculum is designed to prepare students to:

- Demonstrate proficiency as respiratory therapists as described by the National Board for Respiratory Care
- Assist physicians in the diagnosis, management, and treatment of patients afflicted with cardiopulmonary disorders
- Function effectively as members of the healthcare team
- Comprehend, apply, and evaluate clinical information relevant to their role as registered respiratory therapists (Cognitive Domain)
- Demonstrate technical proficiency in all registered respiratory therapist skills. (Psychomotor Domain)
- Demonstrate personal behaviors consistent with professional and employer expectations for the registered respiratory therapist (Affective Domain)

## PROGRAM REQUIREMENTS – Certified Respiratory Therapist (TOTAL CREDITS = 71)

General Education	Major Requirements	Other Required Courses
ENGL 101 English Composition I	3 RESP 100 Intro to Respiratory Care	2
ENGL 102 English Composition II	3 RESP 120 Cardiopulmonary Anatomy & Physiology	4
COMM 101 Effective Speaking	3 RESP 130 Hospital Orientation	2
Humanities & Arts Elective	3 RESP 140 Oxygen Administration	4
Mathematics Elective	3 RESP 150 Pharmacology	3
Mathematics or Science Elective - CHEM 100	3 RESP 160 Patient Assessment	3
Science w/ a Laboratory Elective - BIOL 111	3 RESP 170 Therapeutics	4
Social & Behavioral Science Elective	3 RESP 175 Clinical Practice I	2
First-Year Seminar Elective	1 RESP 200 Cardiopulmonary Diseases	3
Wellness	1 RESP 205 Clinical Practice II	2
	26 RESP 210 Critical Care	6
	RESP 230 Cardiopulmonary Lab Procedures	2
	RESP 235 Clinical Practice III	2
	RESP 245 Clinical Practice IV	2
	RESP 270 Neonatal/Pediatric Respiratory Care	4
		45

Note: A grade of C or higher is required for ENGL 101, BIOL 111, CHEM 100 & all RESP courses.

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

The program is offered during the day and students may enroll either full-time or part-time. General education courses are offered during the day and evening. Evening clinical rotations may be possible.

Fall Semester I	Spring Semester I	Summer I	Fall Semester II	Spring Semester II	Summer II
BIOL 111	3 COMM 101	3 RESP 140	4 ENGL 102	3 Humanities/Arts Elective	3 RESP 245
CHEM 100	3 RESP 120	4 RESP 150	3 Mathematics Elective	3 RESP 210	6 RESP 270
ENGL 101	3 RESP 130	2 RESP 175	2 RESP 170	4 RESP 235	2
FYS Elective	1 RESP 160	3	RESP 205	2 Social/Behavioral Science Elective	3
RESP 100	3 RESP 200	3	RESP 230	2	
Wellness	1				



## SOCIAL SERVICES, Associate in Arts Degree - 5060

Health & Public Service Department

The Social Services AA degree prepares students for transfer to four-year colleges and universities offering baccalaureate degrees in social work, psychology, human services, or other social service professions. This degree also prepares students for work in the Human Services field. Students are required to complete a Pennsylvania Child Abuse History Clearance, FBI Criminal Background Check, and a State Police Criminal Record Check prior to enrollment into the practicum course. If the student has any questions regarding this, he or she should contact the Program Director or Practicum Coordinator. Because students are planning to transfer to other institutions, it is essential to choose an intended transfer institution as soon as possible and carefully follow the program described in that college's catalog, as four-year institutions vary widely. The complete program is available at the Gettysburg, Harrisburg, Lancaster, and York campuses.

### Transfer Opportunities

This transfer curriculum is provided as a guide for students planning to transfer to a four-year institution. Transfer students may continue their education in a wide variety of social services field such as mental health, intellectual disabilities, substance abuse, gerontology, women's services and family services. Graduates of the program receive the training and education for positions in a number of social service fields such as social and human services assistants.

### Competency Profile

This curriculum is designed to prepare students to:

- Take advanced academic work at a four-year institution in one of the helping professions
- Recognize the characteristics of culturally diverse populations
- Establish and maintain effective working relationships with clients and their families to plan treatments and/or services
- Perform case management responsibilities in a variety of settings
- Explain the ethics and laws applicable to the human service field

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 63)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	HUMS 100 Introduction to Human Services	3	SOCI 201 Intro to Sociology or SOCI 205 Race & Cultural Relations	3 (3)
ENGL 102 English Composition II	3	HUMS 120 Social Welfare Programs and Policies	3	Science w/ a Laboratory Elective***	3
COMM 101 Effective Speaking	3	HUMS 121 Skills and Methods in Human Services I	3	Transfer Electives	9
Humanities & Arts Elective*	3	HUMS 122 Skills and Methods in Human Services II	3		
Humanities & Arts Elective or Social & Behavioral Science Elective**	3	HUMS 200 Group Work Practice	3		15
Mathematics Elective (Recommend: MATH 202)	3	HUMS 206 Human Development in a Social Environment	3		
Science w/ a Laboratory Elective - BIOL 111	3	HUMS 215 Fieldwork Practicum	4		
Social & Behavioral Science Elective - PSYC 101	3		22		
First-Year Seminar Elective	1				
Wellness	1				
	26				

\*Students must select a Philosophy course. PHIL 225 – Belief and Ethics is recommended.

\*\* Students must select either a Literature course (ENGL 200-299) or one of the following foreign language courses: SPAN 101, 102; FRCH 101, 102; or GRMN 101, 102.

\*\*\*Students must select an additional laboratory science elective from the following courses: ASTR 103, 104; BIOL 101, 108; CHEM 101, 113; or PHYS 201.

Note: A grade of C or higher is required for all HUMS, PSYC and SOCI courses.

### RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students can complete this program by taking one or more courses each semester.

Fall Semester I	Spring Semester I	Fall Semester II	Spring Semester II
BIOL 111	3	Humanities/Arts or Social/Behavioral Science Elective	3
ENGL 101	3	HUMS 121	3
FYS Elective	1	HUMS 122	3
HUMS 100	3	Science w/ Lab Elective	3
Mathematics Elective	3	Transfer Elective	3
PSYC 101	3		1

# STRUCTURAL ENGINEERING TECHNOLOGY, Associate in Science Degree - 4850

Engineering & Technology Department

The Structural Engineering Technology AS degree is designed for students who intend to pursue a career as an Engineering Technician in the field of Structural Engineering. Structural Engineering is a large specialty discipline within the broader engineering fields, particularly civil and mechanical. Structural Engineering involves the design and execution of large structural projects such as dams, docks, and bridges, tunnels, airport terminals, and railroad structures, in addition, to building frames and foundations. Students participate in team-based projects that allow them to complete basic designs for commercial buildings and other structures. These projects cover such specifics as calculating design loads and stresses, drawing free-body diagrams, and sizing component such as beams, columns and joists. It is expected that most graduates with an Associate's degree are then qualified to function as an assistant to the Engineer. Some students may wish to continue their education towards obtaining a four-year Bachelor's degree in Engineering Technology to eventually become an Engineer. The complete program is only available at the Harrisburg Campus.

## Career or Transfer Opportunities

Graduates of this program are prepared for employment as technicians, designers, specification writers, drafters, reviewers of shop and structural drawings, construction inspectors, and computer-aided drafting and design (CADD) operators within the Structural Engineering field.

## Competency Profile

This curriculum is designed to prepare students to:

- Assist in the design and development of structures using computer-aided design and drafting (CADD) equipment
- Prepare, interpret, and read technical drawings
- Conceptualize ideas and communicate them to other project team members
- Analyze static structures using trigonometry
- Perform simple member designs
- Interpret and apply the appropriate codes, regulations, and standards that govern the practice of structural engineering
- Collect and interpret engineering data
- Prepare reports, specifications, and manuals under the direction of scientists and engineers
- Write and speak effectively
- Identify the student's career path
- Identify global and ethical engineering issues

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 61)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	CAD 154 Computer Aided Drafting	3	Program Electives*	12
ENGL 104 Technical Writing	3	CVTE 103 Surveying I	3		
COMM 101 Effective Speaking	3	CVTE 208 Strength of Materials	3		
Humanities & Arts Elective	3	GTEC 104 Engineering Materials & Processes	3		
Mathematics Elective - MATH 103	3	GTEC 201 Statics	3		
Mathematics or Science Elective - MATH 104	3	GTEC 208 Strength of Materials Lab	1		
Science w/ a Laboratory Elective	3	SET 201 Intro Structural Engineering Technology	3		
Social & Behavioral Science Elective	3	SET 202 Structural Design Fundamentals & Concepts	3		
First-Year Seminar Elective - ENGR 102	2		22		
Wellness	1				
	27				

\*Select program electives from the following courses: ACCT 101; ARCH 253; BCT 215; CAD 115, 164; CPS 113, 115, 135; CHEM 101; CVTE 120; ELEC 100, 101, 108, 125, 126; ENGR 291; IA 205, 208; MDRF 101, 103; MATH 119, 121, 202; MGMT 201; MDES 201, 204, 206; PHYS 201, 202.

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students can complete this program by taking one or more courses each semester.

Fall Semester I	Spring Semester II	Summer	Fall Semester III	Spring Semester IV
CAD 154	3 COMM 101	3 CVTE 103	3 CVTE 208	3 GTEC 208
ENGL 101	3 ENGL 104	3	Program Electives	6 Program Electives
ENGR 102	2 GTEC 104	3	SET 201	3 SET 202
MATH 103	3 GTEC 201	3	Social/Behavioral Science Elective	3 Science w/ a Lab Elective
MATH 104	3 Humanities/Arts Elective	3		
Wellness	1			

## SUGGESTED ADDITIONAL SEQUENCE FOR STUDENTS TRANSFERRING TO A BSSET PROGRAM

Fall Semester III for transfer students	Spring Semester III for transfer students
CHEM 101 (Inorganic Chemistry)	4 Transfer Electives*
Transfer Elective*	3 MATH 121 (Calculus I)
MATH 119 (Pre-Calculus, 12 Week Session)	4 PHYS 202 (General Physics II)
PHYS 201 (General Physics I)	4 Wellness (PSU Only)
Wellness (PSU Only)	1 Total Credits
Total Credits	16

\*Students are to select courses that are suited for their intended transfer institution.

# STRUCTURAL ENGINEERING TECHNOLOGY, Certificate - 4581

Engineering & Technology Department

The Structural Engineering Technology certificate is designed for students who intend to pursue an entry-level career position in the field of structural engineering. Structural Engineering is a large specialty discipline within the broader engineering fields, particularly civil and mechanical. Structural Engineering involves the design and execution of large structural projects such as dams, docks, and bridges, tunnels, airport terminals, and railroad structures, in addition, to building frames and foundations. Students participate in team-based projects that allow them to complete basic designs for commercial buildings and other structures. The complete program is only available at the Harrisburg Campus.

## Career Opportunities

Graduates of this program are prepared for entry-level employment as technicians, drafters, reviewers of shop and structural drawings, construction inspectors, and computer-aided drafting and design (CADD) operators in the structural engineering field.

## Competency Profile

This curriculum is designed to prepare students to:

- Assist in the design and development of civil structures using computer-aided design and drafting (CADD) equipment
- Prepare, interpret, and read technical drawings
- Conceptualize ideas and communicate them to other project team members
- Analyze static structures using trigonometry
- Collect and interpret engineering data
- Identify the student's career path
- Identify global and ethical engineering issues

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 30)

General Education	Major Requirements		Other Required Courses	
	CAD 154 Computer Aided Drafting & Design	3	MATH 103 College Algebra	3
	CVTE 103 Surveying	3	MATH 104 Trigonometry	3
	ENGR 102 Engineering & Engineering-Tech Orientation	2	*Program Electives	7
	GTEC 104 Engineering Materials & Processes	3		13
	GTEC 201 Statics	3		
	SET 201 Intro Structural Engineering Technology	3		
		17		

\*Select from the following courses: ACCT 101; ARCH 253; BCT 215; CAD 115, 164; CPS 113, 115, 135; CHEM 101; CVTE 120, 208; ELEC 100, 101, 108, 125, 126; ENGR 291; IA 205, 208; MDRF 101, 103; MATH 119, 121, 202; MGMT 201; MDES 201, 206; PHYS 201, 202; SET 202.

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Fall Semester I	Spring Semester I	Summer I
CAD 154 3	GTEC 104 3	CVTE 103 3
ENGR 102 2	GTEC 201 3	
MATH 103 3	Program Electives 7	
MATH 104 3		
SET 201 3		

Please see the College's website at <http://www.hacc.edu/ProgramsandCourses/Structural-Engineering-Technology-4581.cfm> for the most current Gainful Employment Information.

# SURGICAL TECHNOLOGY, Associate in Applied Science Degree - 3646

Health & Public Service Department

The Surgical Technology AAS curriculum prepares an individual to assist in caring for the surgical patient in the operating room and to function as a member of the surgical team. Students apply theoretical knowledge to the care of patients undergoing surgery and develop the skills necessary to prepare supplies, equipment, and instruments; maintain aseptic conditions; prepare patients for surgery; and assist surgeons during surgical interventions. The program provides supervised clinical experience that enables students to develop surgical skills required for entry into practice. Graduates of the program are eligible to take the National Board for Surgical Technology and Surgical Assisting (NBSTSA) National Examination for the Certified Surgical Technologist (CST). The program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) upon the recommendation of the Accreditation Review Committee on Education in Surgical Technology and Surgical Assisting (ARCSTSA). The complete program is available at the Harrisburg Campus.

*Selective Program:* Entry into this program is not guaranteed with admission to the College; this is a selective and competitive admission program, specific admissions criteria must be met. Please go to the Health Careers website ([www.hacc.edu/healthcareers](http://www.hacc.edu/healthcareers)), or contact us by email at [start@hacc.edu](mailto:start@hacc.edu) for specific program entry requirements.

The following requirements must be completed (at the student's expense) after being selected for, but prior to starting the clinical portion of the program. Requirements include physical examination and immunizations, background checks, drug and alcohol screens and CPR certification. The student should consider these factors before enrolling. If the student has any questions regarding this, he or she should contact the program director.

### Career Opportunities

Graduates of this program prepare for employment as surgical technologists in hospital operating rooms, and outpatient surgery centers.

### Competency Profile

This curriculum is designed to prepare students to:

- Perform as an entry-level surgical technologist (ST) in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains
- Anticipate the needs of surgical patients by properly preparing the operating room suite, equipment, and instrumentation required for surgical interventions
- Function effectively as a member of the healthcare team
- Communicate effectively with all communities of interest in the delivery of safe patient care
- Value a commitment to life-long learning
- Take the Certified Surgical Technology exam administered by the NBSTSA

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 61)

General Education	Major Requirements	Other Required Courses
ENGL 101 English Composition I	3	3
COMM 203 Interpersonal Communication	3	1
Humanities & Arts Elective*	3	5
Mathematics or Science Elective - BIOL 121	4	5
Social & Behavioral Science Elective - PSYC 101	3	5
First-Year Seminar Elective	1	3
Wellness	1	4
	18	3
		29

\*Students are to select courses from the following: ART 181 or 182; ENGL 206; HUM 101, 115 or 201; MUS 104; PHIL 200; THTR 101; or a foreign language course.

### RECOMMENDED COURSE SEQUENCING

Fall Semester I	Spring Semester I	Summer I	Fall Semester II	Spring Semester II	Summer II
BIOL 105	3	BIOL 122	4	SURG 105	1
BIOL 121	4	BIOL 221	4	SURG 110	5
ENGL 101	3	SURG 101	3	COMM 203	3
FYS Elective	1	Wellness	1	SURG 111	5
PSYC 101	3			SURG 210	3
				Humanities/Arts Electives	3
				SURG 112	5
				SURG 220	4
				SURG 230	3

## THEATRE, Associate in Fine Arts Degree - 2500

Communication, Humanities and the Arts Department

The Theatre Associate in Fine Arts degree prepares students for entry-level employment in both performance and technical theatre. This hands-on curriculum teaches students fundamental knowledge and techniques essential in acting and/or theatre production. With an emphasis on resume building skills, students have the opportunity to complete an approved internship at an external theatre or theatre affiliation. Through the theatre practicum experience, students further develop skills in selected areas of performance, theatre design, theatre construction, and marketing as required by participation in HACC theatre productions. As part of the practicum experience, students are required to work on at least three HACC productions prior to graduation. While this program prepares students for entry-level employment, it may also serve to transfer to many four-year institutions and professional theatre schools. Since the requirements of senior institutions vary, it is essential to choose an intended transfer institution as soon as possible and carefully follow the program described in that college's catalog. The complete program is only available at the Harrisburg Campus.

### Career or Transfer Opportunities

Training is provided in both performance and technical theatre applications for entry-level job opportunities, as well as for transferring to a four-year institution, or professional theatre schools. In addition, this program may be taken for personal growth or for advancement by those already employed in some aspect of the performing arts.

### Competency Profile

This curriculum is designed to prepare the student to:

- Distinguish and demonstrate the various roles and functions of performers, directors, and designers within the Theater Arts
- Recognize the necessity for collaboration and artistic compromise
- Execute the various tasks involved in creating a live staged production
- Create a theatre resume
- Write and speak effectively about the nature of theatre

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 60)

General Education		Major Requirements		Other Requirements	
ENGL 101 English Composition I	3	THTR 110 Introduction to Acting	3	Program Specific Electives*	12
ENGL 102 English Composition II (or)	3	THTR 111 Acting II	3	Transfer Elective**	3
ENGL 104 Technical Writing (or)	(3)	THTR 120 Theatre Voice I	1		15
ENGL 106 Business Writing	(3)	THTR 130 Theatre Movement I	1		
COMM 101 Effective Speaking	3	THTR 131 Theatre Movement II	2		
Humanities & Arts Elective - THTR 101	3	THTR 142 Scenic Design	3		
Mathematics or Science Elective	3	THTR 143 Theatre Makeup	3		
Social & Behavioral Science Elective	3	THTR 144 Costuming for the Theatre	3		
First-Year Seminar	1	THTR 147 Theatre Practicum A	1		
Wellness	1	THTR 148 Theatre Practicum B	1		
	20	THTR 149 Theatre Practicum C	1		
		THTR 224 Modern American Theatre	3		
			25		

\*Students are to select their program specific electives from THTR 100-299.

\*\*Students are to select courses that meet the intended transfer institution or career-focus.

### RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students can complete this program by taking one or more courses each semester.

Fall Semester		Spring Semester		Fall Semester		Spring Semester	
ENGL 101	3	COMM 101	3	Math/Science Elective	3	Program Electives	6
FYS Elective	1	ENGL 102 or 104 or 106	3	Program Electives	6	Social//Behavioral Science Elective	3
THTR 101	3	THTR 111	3	THTR 142 or 143 or 144	3	Transfer Elective	3
THTR 110	3	THTR 131	2	THTR 148	1	THTR 149	1
THTR 120	1	THTR 142 or 143 or 144	3	Wellness	1	THTR 224	3
THTR 130	1	THTR 147	1				
THTR 142 or 143 or 144	3						

# WEB DEVELOPMENT AND DESIGN, Associate in Applied Science Degree - 1816

Engineering & Technology Department

The Web Development and Design AAS degree provides students with the skills and knowledge necessary for a rewarding career in designing and developing professional websites and applications. All students gain a foundation in website development and design, various web technologies, multimedia, and effective communication. Students are able to select from one of the following concentrations: **Interactive Web Media, Web Application Development, or General Web Studies**. The Interactive Web Media track graduates are able to focus on making creative content using rich media. Web Application Development track graduates emphasize their studies on building interactive data-driven web sites and mobile applications. Finally, students choosing the General Web Studies track are able to develop a mix of design and development skills. The complete program is available through Virtual Learning. This program may also be completed at the Harrisburg Campus by taking some courses through Virtual Learning.

## Career Opportunities

Graduates may obtain positions with many different businesses, government agencies, and Web consulting firms as Web Developers, Web Designers, Web Interactive Media Specialists, Web Producers, Web Content Writers, Web Application Developers, programmers, and other related positions.

## Competency Profile

This curriculum is designed to prepare students to:

- Design high quality web pages for a variety of uses
- Publish websites with effective design and content for various platforms
- Create interactive and multimedia content for web use
- Develop websites using modern standards for HyperText Markup Language (HTML), Cascading Style Sheets (CSS), and JavaScript
- Create programs for both web and mobile applications
- Develop web applications that integrate server programming, databases, and markup languages
- Work individually and as team members on website projects
- Recognize the importance of how specialized training fits into larger management and societal context

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 60)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I (or)	3	WEB 101 Web Program Introduction	3	Open Elective	1
ENGL 110 Foundations of Professional Writing	(3)	WEB 110 Web Site Publishing	3	Program Major Elective*	3
COMM 101 Effective Speaking (or)	3	WEB 125 HTML & CSS	3		4
COMM 203 Interpersonal Communication	(3)	WEB 130 Multimedia Fundamentals	3		
Humanities & Arts Elective	3	WEB 133 Design Fundamentals	3		
Mathematics or Science Elective	3	WEB 143 Development Fundamentals	3		
Social & Behavioral Sciences Elective	3	WEB 240 JavaScript Programming	3		
First-Year-Seminar Elective	1	WEB 268 Web Program Capstone (or)	(3)		
Wellness	1	WEB 270 Cooperative Work Experience in Web	3		
	17		24		

\*Students are to select program elective courses from the following: Any WEB course; AOS; ART; CIS; CISE; CNT; CPS; and ELEC; Excluding AOS 100, 101; CIS 100; Note: Students must achieve a collective average GPA of 2.0, or higher, in all required WEB/CIS courses in order to graduate.

General Web Studies Option		Interactive Web Media Option		Web Application Development Option	
WEB 135 Raster Imaging & Photography	3	WEB 135 Raster Imaging & Photography	3	CIS 245 Database Programming	3
WEB 245 Advanced Development	3	WEB 138 Vector Imaging and SVG	3	WEB 245 Advanced Development	3
General Web Studies Elective **	9	WEB 225 Responsive Design & Typography	3	WEB 253 Intro to Windows Development	3
		Interactive Web Media Option Electives (Select two: WEB 227, 230, 231, or 233)	6	Web Application Development Elective (Select from CIS 140; WEB 144, 255 or 257)	6

\*\*Students are to select from the following: 3-credits from Interactive Web Media Elective (WEB 138, 225, 227, 230, 231 or 233); 3-credits from Web Application Development Elective (CIS 140, 245; WEB 144, 253, 255 or 257); and 3-credits from either the Interactive Web Media or Web Application Development electives.

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part time students can complete this program by taking one or more courses each semester.

### General Web Studies Option

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
FS 102	1	Humanities/Arts Elective	3	Development Concentration Elective	3	COMM 101 or 203	3
ENGL 110 or 101	3	Math/Science Elective	3	Media Concentration Elective	3	Development or Media Concentration Elective	3
WEB 101	3	WEB 133	3	Social/Behavioral Science Elective	3	Open Elective	1
WEB 110	3	WEB 135	3	WEB 240	3	Program Major Elective	3
WEB 125	3	WEB 143	3	WEB 245	3	WEB 268 or 270	3
WEB 130	3					Wellness	1

### Interactive Web Media Option

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
FS 102	1	Humanities/Arts Elective	3	Media Concentration Elective	3	COMM 101 or 203	3
ENGL 110 or 101	3	WEB 133	3	Math/Science Elective	3	Media Concentration Elective	3
WEB 101	3	WEB 135	3	Social/Behavioral Science Elective	3	Open Elective	1
WEB 110	3	WEB 138	3	WEB 225	3	Program Major Elective	3
WEB 125	3	WEB 143	3	WEB 240	3	WEB 268 or 270	3
WEB 130	3					Wellness	1

### Web Application Developer Option

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
FS 102	1	Humanities/Arts Elective	3	CIS 245	3	COMM 101 or 203	3
ENGL 110 or 101	3	Math/Science Elective	3	Development Concentration Elective	3	Development Concentration Elective	3
WEB 101	3	WEB 133	3	Social/Behavioral Science Elective	3	Open Elective	1
WEB 110	3	WEB 143	3	WEB 245	3	Program Major Elective	3
WEB 125	3	WEB 240	3	WEB 253	3	WEB 268 or 270	3
WEB 130	3					Wellness	1

# WEB DEVELOPMENT AND DESIGN, Certificate - 1450

Engineering & Technology Department  
CIP Code: 11.0801

The Web Development and Design certificate program provides skills and knowledge needed for a rewarding career in designing and developing professional websites and applications. All students gain a foundation in website development and design, various web technologies, and multimedia. Students are able to select from one of two options: Web Application Development or Interactive Web Media. Graduates of the Web Application Development option emphasize their studies on building interactive, data-driven web sites and mobile applications. Graduates of the Interactive Web Media option are able to focus on making creative content using rich media. The complete program is available through Virtual Learning. Students may complete the program at the Harrisburg Campus by taking some courses through Virtual Learning.

### Career Opportunities

Graduates may obtain positions with many different businesses, government agencies, and web consulting firms as Web Developers, Web Designers, Web Interactive Media Specialists, Web Producers, Web Content Writers, Web Application Developers, programmers, and other related positions. (SOC Code: 15-1150 Computer Support Specialists)

Link to occupational profiles on O\*NET: <http://www.onetcodeconnector.org/>

Application and admission information: <http://www.hacc.edu/NewStudents/Apply/index.cfm>

### Competency Profile

This curriculum is designed to prepare students to:

- Design high quality web pages for a variety of uses
- Develop web applications that integrate server programming, databases, and markup languages for business and electronic commerce
- Publish websites with effective design and content for various platforms
- Create interactive and multimedia content for Web use
- Develop websites using modern standards for HyperText Markup Language (HTML), Cascading Style Sheets (CSS), and JavaScript
- Create programs for both web and mobile applications
- Work individually and as a team members on website projects

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 30)

General Education	Major Requirements	Other Required Courses
	WEB 101 Web Program Introduction	3
	WEB 110 Web Site Publishing	3
	WEB 125 HTML and CSS	3
	WEB 130 Multimedia Fundamentals	3
	WEB 133 Design Fundamentals	3
	WEB 143 Development Fundamentals	3
	WEB 240 JavaScript Programming	3
		21
<b>Interactive Web Media Option</b>	<b>Web Application Development Option</b>	
WEB 135 Raster Imaging & Photography	CIS 245 Database Programming	3
WEB 138 Vector Imaging & SVG	WEB 245 Advanced Development	3
WEB 225 Responsive Design & Typography	WEB 253 Intro to Windows Development	3
		9

Note: Students must achieve a collective average GPA of 2.0, or higher, in all required WEB program and WEB Option courses in order to graduate.

### RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

#### Interactive Web Media Option

Fall Semester I	Spring Semester I
WEB 101 3	WEB 133 3
WEB 110 3	WEB 135 3
WEB 125 3	WEB 138 3
WEB 130 3	WEB 225 3
WEB 143 3	WEB 240 3

#### Web Application Developer Option

Fall Semester I	Spring Semester I
WEB 101 3	CIS 245 3
WEB 110 3	WEB 133 3
WEB 125 3	WEB 240 3
WEB 130 3	WEB 245 3
WEB 143 3	WEB 253 3

Please see the College's website at <http://www.hacc.edu/ProgramsandCourses/Web-Development-and-Design-1450.cfm> for the most current Gainful Employment Information.

# WELDING TECHNOLOGY, Certificate - 4161

Engineering & Technology Department  
CIP Code: 48.0508

The Welding Technology certificate program prepares students for employment in the welding industry as a qualified welder. Advanced skills are developed in blueprint reading, oxy fuel welding, shielded metal arc welding, gas metal arc welding, gas tungsten arc welding, flux cored and subarc welding, and testing and inspection. The practice that is provided through laboratory training prepares the student for AWS certification tests. The complete program is offered at the Harrisburg Campus.

### Career Opportunities:

Graduates are employed as Assemblers, Maintenance Mechanics, Welders (with AWS certification), Welder’s Helpers, Repair Technicians, Machine Operators, and Welding Sales and Service Representatives.

(SOC Code: 51-4121 Welders, Cutters, Solderers and Brazers)

Link to occupational profiles on O\*NET: <http://www.onetcodeconnector.org/>

Application and admission information: <http://www.hacc.edu/NewStudents/Apply/index.cfm>

### Competency Profile:

The program is designed to prepare students to:

- Interpret welding blueprints
- Weld carbon steel, aluminum and stainless steel in all positions with the oxy fuel welding process
- Weld carbon steel in all positions with the shielded metal arc welding process
- Weld carbon steel, aluminum and stainless steel in all positions with the gas metal arc welding process
- Weld carbon steel, aluminum and stainless steel in all positions with the gas tungsten arc welding process
- Weld carbon steel, aluminum, and stainless steel in all positions with the flux cored arc welding process
- Weld carbon steel with the subarc welding process
- Weld pipe with oxy fuel, SMAW, GMAW, and GTAW welding processes
- Test and inspect weldments with destructive and nondestructive examination processes

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 33)

#### General Education

#### Major Requirements

#### Other Required Courses

WELD 101 Print Reading Analysis for Welders	3
WELD 102 Oxy-Fuel Welding & Cutting	3
WELD 103 Shielded Metal-Arc Welding	3
WELD 105 Shielded Metal-Arc Welding: Vertical & Overhead	3
WELD 107 Shielded Metal-Arc Welding: Plate Test	3
WELD 111 Welding Applications	3
WELD 120 Gas Metal Arc Welding I	3
WELD 130 Gas Tungsten Arc Welding I	3
WELD 240 Pipe Welding	<u>3</u>
	27

GTEC 101 Safety & Health in the Workplace	3
IA 210 Industrial Robotics I	<u>3</u>
	6

### RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Fall Semester I	Spring Semester I	Summer
WELD 101      3	GTEC 101      3	IA 210      3
WELD 102      3	WELD 107      3	WELD 240      3
WELD 103      3	WELD 120      3	
WELD 105      3	WELD 130      3	
WELD 111      3		

Please see the College’s website at <http://www.hacc.edu/ProgramsandCourses/Welding-Technology-4161.cfm> for the most current Gainful Employment Information.



# WELLNESS AND HEALTH PROMOTION, Associate in Applied Science Degree - 3610

## Science Department

The Wellness and Health Promotion AAS degree program prepares students for a rewarding career helping individuals, employers, communities, healthcare systems, and government agencies realize the power and potential of promoting healthy lifestyles, preventing disease, and supporting wellness for all individuals. This program allows students to select from two tracks: Workplace Wellness or Community Health. Students in both tracks gain a foundation of the various dimensions of wellness, health promotion, and health coaching. The curriculum provides students with the skills for promoting healthy choices, facilitating behavior change, assessing individuals, groups, and programs, and for designing and evaluating wellness-based programs. Students prepare for employment in the field by participating in a field and capstone experience, completing an electronic portfolio for professional use, and submitting a post-graduation plan. The Workplace Wellness track prepares graduates to design and implement wellness programs for both employers and employees using effective communication and program marketing skills. The Community Health option prepares graduates to be health advocates within health agencies and healthcare systems, as they connect individuals to available services and resources within their respective communities. Program graduates are prepared for and are highly encouraged to complete the *Health Coach Certification* from the *American Council on Exercise (ACE)* or a similar professional certification. Although this is not specifically designed as a transfer program, opportunities do exist for students to apply for admission to certain on-campus or online Bachelor's Programs once they have completed this degree, or more, along with specific prerequisites. The complete program is available through Virtual Learning. Students may complete the program at the Harrisburg Campus by taking some courses through Virtual Learning.

### Career Opportunities

The Wellness and Health Promotion Program prepares students to work in this emerging field within the healthcare system, non-profits organizations, corporations, and government agencies as: Health Educators or Advocates, Wellness or Health Coaches, Workplace Wellness Coordinators. Community Health Workers or Specialists, Behavior Modification Specialists, Community Engagement Specialists, Health Promotion Specialists or Coordinators, or Prevention Specialists

### Competency Profile:

This curriculum is designed to prepare the students to:

- Use current technologies, tools, and applications for academic and career settings
- Critique scientific literature and health-related information
- Assess individuals, programs, populations, or communities for wellness program planning
- Demonstrate health coaching and motivational interviewing skills
- Facilitate behavior change for lifestyle modification
- Design, implement, and evaluate wellness and health promotion programming
- Demonstrate critical thinking, problem-solving, organizational, and prioritization skills
- Connect resources and services to individuals and communities that serve to optimize health and wellness
- Model professional conduct and recognize scope-of-practice
- Pass and receive a national Health Coach or other Health or Wellness related certification upon graduation

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 60)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	WHP 101 Intro to Wellness & Health Promotion	3	BIOL 111 Introduction to Human Biology	3
ENGL 102 English Composition II (or)	3	WHP 102 Approaches to Weight Management	3	BIOL 121 Anatomy and Physiology	(4)
ENGL 104 Technical Writing (or)	(3)	WHP 103 Approaches to Stress Management	3	MGMT 227 Project Management	3
ENGL 106 Business Writing	(3)	WHP 201 Health Behavior Change & Interventions	3	PSYC 209 Life Cycle Development	3
COMM 101 Effective Speaking* (or)	3	WHP 202 Foundations of Health Coaching	3	****Program Specific Electives	3
COMM 203 Interpersonal Communication*	(3)	WHP 205 Assessment, Programming & Evaluation	3		12
Humanities & Arts Elective**	3	WHP 206 Wellness & Health Promotion Capstone	3		
Mathematics or Science Elective - MATH 202	4	***Workplace Wellness Track (or)	6		
Social & Behavioral Science Elective – PSYC 101	3	***Community Health Track	(6)		
First-Year Seminar Elective	1		27		
Wellness	<u>1</u>				
	21				

\*Students are to select the appropriate Communication course for the track selected. COMM 101 should be selected for students in the Workplace Wellness Track; COMM 203 is to be selected for students in the Community Health Track.

\*\*Students select from the following courses: ART 181, 182; ENGL 206; HUM 101, 115, 201; MUS 104; PHIL 200; THR 101; or a foreign language course.

\*\*\*Choose one of the following tracks:

**Workplace Wellness Track**

MKTG 201 Principles of Marketing	3
WHP 204 Concepts of Workplace Wellness	<u>3</u>
	6

**Community Health Track**

HUMS 108 Drugs & Alcohol: Use & Abuse	3
WHP 203 Concepts of Community Health	<u>3</u>
	6

\*\*\*\*Choose any three of GERT 100, 101, 102, or 103; or PSYC 229.

Note: A grade of C or higher is required in all WHP courses; MATH 202 and BIOL 111 or 121.

**RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS**

Part-time students can complete this program by taking one or more courses each semester.

**Workplace Wellness Track**

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
BIOL 111 or 121	3 or 4	ENGL 102 or 104 or 106	3	COMM 101	3	MGMT 227	3
ENGL 101	3	MATH 202	4	GERT or PSYC 229	3	MKTG 201	3
FYS Elective	1	WHP 102	3	WHP 201	3	PSYC 209	3
Humanities/Arts Elective	3	WHP 103	3	WHP 202	3	WHP 205	3
PSYC 101	3			WHP 204	3	WHP 206	3
WHP 101	3			Wellness	1		

**Community Health Track**

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
BIOL 111 or 121	3 or 4	ENGL 102 or 104 or 106	3	COMM 203	3	HUMS 108	3
ENGL 101	3	MATH 202	4	GERT or PSYC 229	3	MGMT 227	3
FYS Elective	1	WHP 102	3	WHP 201	3	PSYC 209	3
Humanities/Arts Elective	3	WHP 103	3	WHP 202	3	WHP 205	3
PSYC 101	3			WHP 203	3	WHP 206	3
WHP 101	3			Wellness	1		



# Course Descriptions

The numbers separated by colons following the title of a course indicate, respectively, the number of credits awarded for completion of the course, the number of lecture hours per week, and the number of laboratory hours per week. The course description state corequisites or prerequisites, if any. Courses that meet Diversity (D) and Physical Educational and Wellness (W) requirements are indicated following the course description. Unless the description uses a restrictive phrase, the college usually will offer the course at least once each year at the Harrisburg Campus. Variations may occur at the campuses in Gettysburg, Lancaster, Lebanon, Virtual, York, and at other sites.

## **ACCOUNTING**

### **ACCT 101 - Principles of Accounting I 4:4:0**

Introduces commonly accepted accounting principles as they pertain to external financial reports. This course addresses the accounting cycle, accounting systems, theories and policies relative to asset valuation, liability measurement, and income determination. Emphasis is placed on accounting for sole proprietorships and partnerships. *Prerequisite: ENGL 002, 007, or 057 with a grade of C or higher. Or, eligibility for enrollment into ENGL 003, 007, or 057 as identified by the College Testing and Placement Program; and eligibility for enrollment into MATH 022 (or MATH 020) or completion of MATH 008 (or MATH 010) with a grade of C or higher.*

### **ACCT 200 - Principles of Accounting II 4:4:0**

Recording, summarizing, and interpreting financial data for corporations; cash flows; financial statement analysis; job order and process costing; cost/volume/profit analysis budgets, variance analysis, cost allocation, and quantitative decision-making. *Prerequisite: ACCT 101 with a grade of C or higher.*

### **ACCT 201 - Intermediate Accounting 4:4:0**

Reviews the conceptual framework of accounting to foster further discussion of the income statement, statement of comprehensive income, statement of changes in stockholders equity, balance sheet, and statement of cash flow. Also, the course covers revenue recognition and the measurement of inventory, operational assets, intangible assets, investments in debt and equity securities, leases, deferred taxes and earnings per share. *Prerequisite: ACCT 200 with a grade of C or higher.*

### **ACCT 203 - Income Tax Accounting 4:4:0**

Identifies and applies myriad sources of tax law to various individual income tax situations. This course emphasizes planning as well as reviews the taxation of corporations, partnerships, and retirement plans. Commonly filed tax forms are used to demonstrate compliance with tax law. *Co-requisite: ACCT 200 with a grade of C or higher or permission of the Department Chair.*

### **ACCT 204 - Managerial Cost Accounting 3:3:0**

Presents the concepts and applications of cost accounting from a procedural and managerial approach. Various methods of accumulating cost data for planning, controlling, and decision-making purposes are explored and applied. In

addition, this course also addresses activity-based costing, responsibility accounting, budgeting, managing profitability, job-order and process costing, standard costs, and variance analysis. *Prerequisite: ACCT 200 with a grade of C or higher or permission of the Department Chair.*

### **ACCT 208 - Professional Bookkeeping 4:4:0**

Serves to reinforce the period end adjusting process including accruals, deferrals, and the use of an adjusted trial balance to prepare financial statements. This course covers the various methods used, as well as the legal requirements for, depreciation, payroll, and inventory. The design and implementation of procedures to protect businesses against fraud are emphasized. Students are able to practice communicating their recommendations, in the form of written memos and reports, designed for both managers and clients. In addition, this course prepares students to take the National Certified Bookkeepers Exam. *Prerequisite: ACCT 101 with a grade of C or higher. Co-requisite: ACCT 200.*

### **ACCT 215 - Accounting Software Applications 3:2:2**

Provides extensive hands on exposure to Microsoft (MS) Excel - an industry standard spreadsheet program. This course covers constructing a worksheet, entering and manipulating data, extracting useful information, and using MS Excel functions and formulas with emphasis on accounting as a financial analysis tool. Two-thirds of the course covers MS Excel. The remainder of the course addresses commercial accounting software packages, such as QuickBooks/ Peachtree, as well as Internet topics. A course fee is required. *Prerequisite: CIS 105 with a grade of C or higher and Co-requisite: ACCT 200 with a grade of C; or higher or permission of the Department Chair.*

### **ACCT 275 - Accounting Capstone 3:3:0**

Prepares students for entry-level employment in the accounting field. This capstone course allows students to apply all of the knowledge and skills acquired in prior accounting and business courses to solve real world problems through case studies. Students are exposed to real-world scenarios involving ethics and professional codes of conduct, reporting standards and practices, linkages between financial statements and decision making by business leaders, and the use of technology. Students also develop the presentation, communication and cooperation skills needed for entry level positions in accounting. In addition, this course examines potential career paths, including the professional requirements, available within this field. *Prerequisite: ACCT*

201 with a grade of C or higher. Co-requisite: ACCT 203, 204, and 215.

## **ADMINISTRATIVE OFFICE MANAGEMENT**

**AOS 100 –Keyboarding 2:1:2**  
Covers the proper techniques needed to touch-type letters, numbers, and symbols on alphabetic and numeric keyboards. This course helps students master the use of basic keyboards found on the computer. A course fee is required. *Prerequisite: Eligibility for enrollment in ENGL 003, or higher, or ENGL 002 with a grade of C or higher.*

**AOS 101 - Document Processing 3:3:0**  
Serves to reinforce keyboarding techniques with emphasis on building speed and accuracy. This course allows students to learn proper formatting of business documents as editing and proofreading are stressed. It is recommended that students be able to key straight copy at 30-wpm using proper technique. *Prerequisite: Eligibility for enrollment into ENGL 003 or higher, or completion of ENGL 002 with a grade of C or higher.*

**AOS 110 - Microsoft Word 3:3:0**  
Covers the basics of creating, editing, and formatting a document using Microsoft Word software. The primary emphasis is on Word's features of advanced formatting and editing, macros, mail merge, online forms, and sorting options. *Prerequisite: AOS 101 with a grade of C or higher.*

**AOS 111 - Grammar & Punctuation Essentials 3:3:0**  
Transcribes oral communication (dictation) into writing. This course stresses spelling, grammar, mechanics, punctuation, and usage through the context of proofreading, copy editing, and listening. *Prerequisite: ENGL 051 or 057 with a grade of C or higher, or eligibility for enrollment into ENGL 101.*

**AOS 160 - Office Accounting 3:3:0**  
Introduces the principles of accounting with emphasis on their relationship to the single proprietorship. This course covers specific topics for study, such as journal entries, posting, trial balance, adjustments, work sheets, closing entries, financial statements, special journals and ledgers, petty cash, and payroll. *Prerequisite: ENGL 051 or 057 with a minimum grade of C, or eligibility for enrollment into ENGL 101.*

**AOS 202 - Project Management 3:3:0**  
Understanding and implementing time-management skills through manual competencies and computer software. Students complete advanced projects within given timelines - planning, organizing, meeting, and adjusting deadlines,

communicating project information, and making decisions as one would on the job.

**AOS 203 - Records and Imaging Management 3:3:0**  
Provides the concepts needed to optimize the value of records, information, and image management. *Prerequisite: CIS 105 with a grade of C or higher.*

**AOS 210 - Cooperative Work Experience 3:0:16**  
A minimum of 240 hours in a College-approved office setting where students apply the knowledge and skills acquired in the Administrative Office Specialist curriculum. The course requires visits from an instructor and progress reports. Written documentation of the cooperative work experience activities and other performance-evaluation measurements are used to determine the grade. *Prerequisite: AOS 224 with a grade of C or higher.*

**AOS 224 - Office Applications 3:3:0**  
Simulates an office environment to reinforce and build software skills, improve Internet skills, and develop teamwork and critical-thinking skills. Class projects are constructed to replicate various tasks that arise within an office environment. The course also focuses on the integration of software programs. *Prerequisite: AOS 110 and CIS 105 with a C or above.*

**AOS 225 - Office Procedures 3:3:0**  
Covers the procedures associated with performing common office tasks that are based on emerging and useful technologies. This course specifically addresses the handling of incoming and outgoing mail and other documents, arranging travel, planning meetings, integrating mobile technology, and researching information using the Internet. In addition, this course covers the use of proper electronic techniques and etiquette. *Prerequisite: AOS 101 with a C or higher. Co-requisite: AOS 110.*

**AOS 226 - Office Transcription 3:2:2**  
Provides intensive instruction and practice in the listening and transcribing of recorded dictation using transcription equipment. This course covers the techniques for preparing meeting agendas and transcribing meeting minutes. A course fee is required. *Prerequisite: AOS 101 with a grade of C or higher.*

## **ALLIED HEALTH**

**AH 140 - Introduction to Allied Health 3:3:0**  
Provides an introduction to health career professions. The course reviews the evolution and current status of health care delivery and introduces the student to the concepts of, cultural diversity, safety in the workplace, communication skills,

aspects of management, securing employment and strategies for becoming a successful employee, professional role development, health care law and ethics, bloodborne pathogens, HIPAA, and quality assurance. (FYS)

**AH 150 - Introduction to Human Illness and Disease 3:3:0**

Introduces the student to important concepts related to human disease. This course presents the etiology, symptoms, and treatments of the most common disorders and diseases of each body system along with a review of the anatomy and physiology pertinent to the concept related to the disease. The relationship of aging to disease, along with their effects on each body system, is also discussed. *Prerequisite: BIOL 111 or 121 with a grade of C or higher.*

**AH 210 - Health Care Law and Ethics 3:3:0**

Fundamentals of law and the court system as well as an exploration of basic ethical principles and bioethics. The course focuses on applying legal and ethical principles to healthcare situations and includes a discussion on current medical-legal issues and bioethical dilemmas being addressed in the U.S. Healthcare system.

**AH 213 - Introduction to Medical Insurance 3:3:0**

Provides an overview of insurance programs at commercial, state and federal levels along with third-party billing techniques, cost-containment strategies, claims developing and processing, and diagnosis and procedure coding systems. Additional topics include legal issues, resources, managed care contracting, fee schedules and electronic data systems. *Prerequisite: BIOL 105 with a grade of C or higher.*

**ANTHROPOLOGY**

**ANTH 101 - Introduction to Anthropology 3:3:0**

Provides a holistic approach to the study of humankind over time and space that includes both the biological and cultural aspects of human beings. This course addresses human evolution, physical anthropology, archaeology, paleoanthropology, primatology, and the significant role that language plays in the understanding of culture. This course also involves comparing and contrasting individual cultures. (S&BS)

**ANTH 201 - Social Anthropology 3:3:0**

Broad, general introduction to social/cultural anthropology, the purpose of which is to acquaint the student with what anthropology is, what anthropologists do and why; to familiarize the student with the outlines of the history of anthropology; the concepts and tools of the discipline; its investigatory procedures, theoretical positions, subject matter, aims and achievements. (S&BS)

**ANTH 205 - Cultures of the World 3:3:0**

Explores human cultural diversity throughout the world, focusing on the question of what it means to be human. This course surveys selected cultures that include bands, tribes, chiefdoms, and states and examines their similarities and differences within the context of economic, political, and social structures. (S&BS)

**ANTH 210 - North American Indian Cultures 3:3:0**

General survey course focusing on the traditions, beliefs, social structure and ecology of Native American people from their earliest migrations to North America to the present. The forces of social change and acculturation are examined, and the impact of European contact is stressed.

**ANTH 215 - Physical Anthropology 3:3:0**

General introduction to physical and biological anthropology designed to provide the student with a broad knowledge of human evolutionary biology. The historical development of physical anthropology and the evolution of the human vertebrate form are examined. Special emphasis is placed on paleoanthropology, population genetics, demography, sociobiology, osteology, primatology and modern human variation.

**ANTH 220 - Introduction to Archaeology 3:3:0**

Examines the development of archaeology as a science. This course emphasizes various methods of archaeological investigation, chronological placement, excavation procedures, and review of extinct cultures in the Old and New Worlds.

**ARABIC**

**ARAB 101 - Elementary Arabic I 4:4:0**

Covers the fundamentals of Arabic grammar. This course addresses drill-in structure, pronunciation, and the development of vocabulary. Aural-oral and reading skills are introduced. *Prerequisite: Eligibility for enrollment into ENGL 101.* (H&A)

**ARAB 102 - Elementary Arabic II 4:4:0**

Continuation of ARAB 101 with increased emphasis on speaking and writing. *Prerequisite: ARAB 101 with a grade of C or higher.* (H&A)

**ARCHITECTURE**

**ARCH 101 - Architectural Design I 3:1:6**

Introduces basic theories of two- and three-dimensional space. This course explores the qualities of architectonic space including definition, scale, transition, light, emotive qualities, and organizing systems accompanied with the study

of historical precedents. Graphic communication and model-making skills are also covered. A course fee is required.

**ARCH 102 - Architectural Design II 3:1:6**

Studies visual composition in two and three dimensions. This course explores the concepts of visual movement, tension, balance, unifying systems, color theory, and the aesthetic expression of material and structure in architectonic form through various design problems. Continued emphasis is also placed on graphic communication and model-making skills. A course fee is required.

**ARCH 111 - Architectural Graphics I 3:1:6**

Introduces students to architectural drawing. This course emphasizes the development of visual cognition skills and the techniques of architectural communication - sketching, orthographic projection, and the use of computer-aided-drafting (CAD) and Building Information Modeling (BIM). A course fee is required. (FYS)

**ARCH 112 - Architectural Working Drawings I 3:1:6**

Encompasses the preparation of architectural working drawings for a wood frame structure. This course emphasizes sheet layout, material indication, line work, dimensioning, and notation. A course fee is required. *Prerequisite: ARCH 111 and GTEC 110 with grades of C or higher.*

**ARCH 130 - Construction Materials & Methods 3:3:0**

Investigates building materials and systems of construction with a focus on structure and enclosure. This course also examines the impact of building codes on material application and explores sustainable design, as applied to construction materials and methods. *Prerequisite: GTEC 110 with a grade of C or higher.*

**ARCH 135 - Codes, Specifications, & Safety 3:3:0**

Introduces students to codes and specifications with respect to their relevance and influence in the construction industry. This course focuses on the use and application of the International Building Code and the CSI Specification format in architectural and construction settings. Basic construction settings. Basic construction safety issues and the prevention of accidents is also covered. *Co-requisite: GTEC 110.*

**ARCH 201 - Architectural Design III 4:2:6**

Allows the student to develop an individual design process through resolving simple architectural programs. This course explores aspects of behavioral, environmental, and perceptual theory in greater depth. Continued emphasis is placed on graphic communication and model-making skills. A course fee is required. *Prerequisite: ARCH 101 and 102 with a grade of C or higher and eligibility for enrollment into ENGL 101 and MATH 103.*

**ARCH 202 - Architectural Design IV 4:2:6**

Focuses on resolving complex architectural programs within contextual issues. This course explores the integration of basic structural concepts and further emphasizes graphic communication and model-making skills. A course fee is required. *Prerequisite: ARCH 201 with a grade of C or higher and eligibility for enrollment into ENGL 101 and MATH 103.*

**ARCH 210 - Professional Practice for Architects 3:3:0**

The role of the architect in the design and construction process. Topics include the five project phases, AIA contracts, CSI format design and construction management, the ethical and legal responsibilities of the architect, business management, and project coordination. *Prerequisite: ARCH 110.*

**ARCH 211 - Architectural Graphics II 3:1:6**

Continues the topics covered in ARCH 111. This course explores a variety of digital tools for the creation of presentation drawings. Topics of study include file management, 2D graphic composition, image enhancement, 3D rendering techniques, and 3D modeling exploration. Students become proficient in assembling both print and digital presentations and portfolios. Students should be proficient in the fundamentals of drafting techniques and in the use of CAD software. A course fee is required. *Prerequisite: ARCH 111 or CAD 156; and ARCH 101 or 102 with a grade of C or higher.*

**ARCH 212 - Architectural Working Drawings II 4:2:6**

Continues the topics covered in ARCH 112. This course allows students to use Building Information Modeling (BIM) software to prepare a set of architectural working drawings for a commercial project of steel or concrete. Emphasis is placed on the integration of building systems, code requirements, and other issues covered in prior courses. A course fee is required. *Prerequisite: ARCH 112 with a grade of C or higher.*

**ARCH 214 - Site Planning 3:1:6**

Covers basic surveying and land development concepts. This course focuses on topographic studies, building placement, driveways and walkways, swales, zoning setbacks and easements, accessibility requirements, and parking layouts. Students have the opportunity to prepare site plans and related drawings used in architectural offices. A course fee is required. *Prerequisite: GTEC 110 and ARCH 111 with grades of C or higher.*

**ARCH 233 – Renovations & Architectural Detailing 4:2:6**

Covers the analysis and generation of architectural details through a study of the factors influencing architectural

detailing. Students research various systems and manufacturers' products as well as document existing buildings, create drawings, and write outline specifications for a proposed renovation project. A course fee is required. *Prerequisite: ARCH 212 with a grade of C or higher.*

**ARCH 241 - Architectural Sketching 3:0.5:4**

Develops the sketching abilities for students in the design field. This course focuses on freehand drawing as a way to broaden students' awareness of the built environment. In addition, students are able to build a visual vocabulary to help in their own design education. A course fee is required.

**ARCH 251 - Environmental Control Systems for Buildings 3:3:0**

Investigates the environmental systems that are commonly utilized in modern structures. The course focuses on understanding and applying the basic principles that inform the design of environmental systems, with topics including the influence of site and climate, psychrometrics, thermal performance, lighting, mechanical equipment for heating, cooling, and ventilation, plumbing, and fire protection. *Prerequisite: GTEC 110 with a grade of C or higher.*

**ARCH 253 - Sustainable Architecture 3:3:0**

Introduces students to sustainable architecture through the examination of criteria used to assess Green Buildings. This course examines both the design of Green Buildings and their significance to the construction industry. Integrated design is explored and the U.S. Green Building Council's LEED Green Building Rating System is utilized as the framework for reducing the environmental impacts of buildings. Building performance is analyzed in terms of sustainable sites, water efficiency, energy and atmosphere, materials and resources, and indoor environmental quality via case studies, design exercises, and web research. *Prerequisite: ARCH 111, 130; and GTEC 110 with grades of C or higher.*

**ARCH 291 - Arch Co-Op Work Experience 3:0:15**

Provides students with the opportunity to work at an architecture firm, engineering firm, or other entity related to the design/construction field for a minimum of 15 hours per week. Students are able to apply their acquired knowledge and skills to "real world" situations under the supervision of a licensed architect, engineer, or related professional. *Enrollment is restricted to students in the Architecture AAS program. Prerequisite: ARCH 130 and 212 with grades of C or higher; Co-requisite: ARCH 233.*

**ARCH 295 - Italy's History Through Architecture 3:3:0**

Encompasses a ten-day guided tour of architectural sites in the cities of Rome, Florence, and Venice. The course focuses on the significance of Italy's architecture and its contribution

to Western architecture. Students gain exposure to the social, political, economic, and technological history of Italy through examination of its architecture. Time is devoted to covering travel logistics so as to help students prepare for the trip. A course fee is required.

**ART**

**ART 102 - Silkscreen Printing 3:2:3.4**

Explores the art, aesthetics, and craft of silkscreen printing by constructing prints using lacquer, photo-emulsion, and computer-generated stencils. A course fee is required.

**ART 105 - Fundamentals of Two-Dimensional Design 3:2:3.4**

Covers the principles and elements of design and color theory as applied to problems within visual communication. This course uses a variety of media. A course fee is required.

**ART 106 - Printmaking 3:2:3.4**

Introduction to basic intaglio techniques. Students explore fundamental concepts and procedures of the etching process. A course fee is required. *Prerequisite: ART 121 with a grade of C or higher. (Occasional offering)*

**ART 107 - Fundamentals of Three- Dimensional Design 3:2:3.4**

Introduces students to working with the elements and principles of three-dimensional design. This course provides students with hands-on experience as they learn the basic concepts of three-dimensional design using a variety of materials (metal, plaster, clay, PVC, wood, etc.) to produce a body of work. A course fee is required.

**ART 108 - Fundamentals of Computer Art 3:2:3.4**

Provides a basic introduction to the fundamentals of computer art. This course allows students to freely create computer-generated images such as portraits and landscapes. Students are exposed to computer hardware and software packages, computer vocabulary and commands related to computer art. A course fee is required.

**ART 109 - Computer Graphics 3:2:3.4**

Introduces methods for producing graphic design for print, web, and interactive technologies. This course familiarizes students with computer hardware and software packages as well as print, web, and interactive terminology. A course fee is required. *Enrollment is restricted to students in the Graphic Interactive and Design AAS program. Prerequisite: ART 105, 121, 125, and 176 with grades of C or higher; Co-requisite: ART 143 and 144.*

**ART 114 - Interactive Media and Design 3:2:3.4**  
Increases students' knowledge for web and interactive media. This course integrates web standards and utilizes media queries to develop responsive website designs. Web fonts and file management are also explored. Students are required to develop a final outline portfolio. A course fee is required. *Enrollment is restricted to students in the Graphic and Interactive Design AAS program. Prerequisite: ART 140, 143, 144, 145, and 149 with grades of C or higher; Co-requisite: ART 146 and 147.*

**ART 115 - Beginning Digital Photography 3:2:3.4**  
Covers the basic techniques of digital photography, both in theory and in practice. The topics include: camera operations, basic editing and use of the digital darkroom, and the visual elements of photograph design. A course fee is required. A digital single lens reflex camera is required for all photography majors.

**ART 116 - Silver Gelatin Photography 3:2:3.4**  
Covers the basic techniques of silver gelatin black and white photography, in both theory and in practice. The course topics include film developing, printing, creative darkroom techniques, and further exploration of the visual elements of photographic design. A course fee is required. *A fully adjustable SLR (non-digital single lens reflex) camera is required for all Photography majors. Prerequisite: ART 115*

**ART 117 - Photoshop for Photographers 3:2:3.4**  
Introduces the tools and techniques of Adobe Photoshop to process, edit, and enhance digital photographs. This course reviews the basic camera operations used to achieve the best possible digital images in addition to covering, in detail, the Photoshop steps necessary to maximize both the technical and aesthetic qualities of images. A course fee is required.

**ART 121 - Drawing I 3:2:3.4**  
Introduces students to a range of drawing concepts and techniques that includes the effective use of line, mass, value, composition, and perspective. Working from observation, students apply these concepts and techniques through the study of still life, interior spaces, portraiture, and the nude human figure. A course fee is required. (H&A)

**ART 122 - Drawing II 3:2:3.4**  
Provides students with an opportunity to further develop their knowledge of observational drawing concepts and techniques. Emphasis is placed on human figure and color theory. Students apply these concepts and techniques through the study of still-life, interior spaces, portraiture, and the nude human figure. A course fee is required. *Prerequisite: ART 121 with grade of C or higher.*

**ART 123 - Illustration 3:2:3.4**  
Introduces concepts and techniques used in the illustration of editorials, advertisements, articles, brochures, books, and other printed and digital communication media. Students learn to communicate visually through problem-solving projects. A course fee is required. *Prerequisite: ART 105 and 121 with grades of C or higher.*

**ART 125 - Visual Thinking 3:2:3.4**  
Introduces visual arts and design and emphasizes the components of visual thinking and reductive drawing. This course provides core exercises, methods, and tips that lead students through a wide variety of processes for generating innovative ideas and concepts. A course fee is required. *Pre or Co-requisite: ART 121 with a grade of C or higher; eligibility for enrollment into ENGL 101.*

**ART 131 - Painting I 3:2:3.4**  
Introduces students to the basic techniques and concepts used in oil painting. Students apply skills through the study of still-life, interior spaces, portraiture, and the human figure. A course fee is required. *Prerequisite: ART 121 with a grade of C or higher. (H&A)*

**ART 132 - Painting II 3:2:3.4**  
Provides students with an opportunity to further develop their knowledge of painting concepts and techniques. Students apply skills through the study of still life, interior spaces, portraiture, and the human figure. A course fee is required. *Prerequisite: ART 131 with a grade of C or higher.*

**ART 133 - Introduction to Mac 1:1:1**  
An introduction to using the Macintosh operating system and several major graphic design software programs. Students complete tutorials and/or exercises that demonstrate an understanding of basic file creation and tool proficiency. A course fee is required.

**ART 140 - Web Design 3:2:3.4**  
Introduces functions of the World Wide Web and the fundamentals of creating mobile and desktop sites. Students utilize contemporary web technology and standards to develop creative and functional websites. This course emphasizes web fundamentals and application through using a web design software package. A course fee is required. *Enrollment is restricted to students in the Graphic and Interactive Design AAS program. Prerequisite: ART 109, 143, and 144 with grades of C or higher; Co-requisite: ART 145 and 149.*

**ART 143 - Typography 3:2:3.4**  
Introduces the fundamentals and expressive use of typography in print, web, and interactive design. Students

learn the historic and compositional aspects of typography while applying knowledge to work with type appropriately. A course fee is required. *Enrollment is restricted to students in the Graphic and Interactive Design AAS program.*

*Prerequisite: ART 105, 121, 125, and 176 with grades of C or higher; Co-requisite: ART 109 and 144.*

**ART 144 - Graphic Design I 3:2:3.4**

Introduces the skills needed in visual communication. Students are taught the fundamentals of design concept through the preparation of materials - from initial concept to production. A course fee is required. *Enrollment is restricted to students in the Graphic Design AAS program.*

*Prerequisite: ART 105, 121, 125 and 176 with grades of C or higher; Co-requisite: ART 109 and 143.*

**ART 145 - Graphic Design II 3:2:3.4**

Continues the topics covered in ART 144. This course studies advanced principles of advertising, layout, and design. A course fee is required. *Enrollment is restricted to students in the Graphic and Interactive Design AAS program.*

*Prerequisite: ART 109, 143, and 144 with grades of C or higher; Co-requisite: ART 140 and 149.*

**ART 146 - Graphic Design III 3:2:3.4**

Further explores the advanced techniques used in the graphic design industry. This course emphasizes creating refined graphic design pieces for inclusion in the student's final portfolio. A course fee is required. *Enrollment is restricted to students in the Graphic and Interactive Design AAS program.*

*Prerequisite: ART 140, 145, and 149 with grades of C or higher; Co-requisite: ART 114 and 147.*

**ART 147 - Portfolio Development 3:2:3.4**

Allows students to develop a professional portfolio based upon design work completed throughout the Graphic Design program. The merits of various portfolio styles and formats are explored and students are expected to refine and update all of their existing design work for inclusion in their final portfolio. A course fee is required. *Enrollment is restricted to students in the Graphic and Interactive Design AAS program.*

*Prerequisite: ART 140, 145, and 149 with grades of C or higher; Co-requisite: ART 114 and 146; or permission from the Instructor.*

**ART 148 - Graphic Design Internship 3:1:15**

Provides students with the opportunity to obtain valuable real-world experience by working in a graphic design environment for a total of 225-hours (15-hours per week) during a semester. Internship sites are carefully chosen for optimal career exposure. *Enrollment is restricted to students in the Graphic and Interactive Design AAS program. Pre/Co-*

*requisite: Completion of ART 146, 147 and 149 with grades of C or higher.*

**ART 148A - Graphic Design Internship 2:1:10**

Provides students with the opportunity to obtain valuable real-world experience by working in a design, print, web and/or interactive media environment for a total of 150 hours (ten hours a week) during a semester. Internship sites are carefully chosen for optimal career exposure. *Enrollment is restricted to students in the Graphic and Interactive Design AAS program. Pre/Co-requisite: Completion of ART 146, 147, and 149 with grades of C or higher.*

**ART 148B - Graphic Design Internship 1:1:5**

Provides students with the opportunity to obtain valuable real-world experience by working in a design, print, web and/or interactive media environment for a total of 75 hours (five hours a week) during a semester. Internship sites are carefully chosen for optimal career exposure. *Enrollment is restricted to students in the Graphic and Interactive Design AAS program. Prerequisite: Completion of ART 146, 147, and 149 with grades of C or higher or concurrent enrollment.*

**ART 149 - Design Practice 3:2:3.4**

Provides students with a practical knowledge of the business of graphic design for print or web/multimedia. This course focuses on acquiring an internship, freelance work, and becoming productive and conversant designer. In addition, this course addresses intellectual property rights and working with third parties and clients. A course fee is required.

*Enrollment is restricted to students in the Graphic and Interactive Design AAS program. Prerequisite: ART 109, 143, and 144 with grades of C or higher; Co-requisite: ART 145 and 140.*

**ART 151 - Ceramics I 3:2:3.4**

Introduces students to basic hand building and wheel throwing methods with an emphasis on process, history, and contemporary issues to clay. In addition, historical and global issues of ceramics are explored. A course fee is required.

**ART 152 - Ceramics II 3:2:3.4**

Explores materials and processes for self-expression using advanced techniques of throwing, casting, and sculpting of ceramic forms. The student is responsible for creating a thematic body of work. A course fee is required. *Prerequisite: ART 151 with a grade of C or higher.*

**ART 161 - Sculpture I 3:2:3.4**

Offers students hands-on experience in the development of spatial form in several media: clay, wood and metal. This studio course provides students with a beginner study of sculpture as they are able to produce a body of work that

reflects individual imagination. A course fee is required.  
*Prerequisite: ART 107 with a grade of C or higher.*

**ART 171 - Jewelry and Metal Design I 3:2:3.4**

Provides students with an opportunity to develop skills in the design and production of jewelry, working in semi- precious and base metals. This studio course addresses piercing, metal forming, hot and cold joining, and casting techniques. A course fee is required.

**ART 172 - Jewelry and Metal Design II 3:2:3.4**

Provides students with an advanced study of jewelry and metalworking techniques. This studio course addresses stone setting, chain making, anodizing, raising, mold making and casting, along with a review of techniques studied in ART 171. A course fee is required. *Prerequisite: ART 171 with a grade of C or higher.*

**ART 176 - Digital Photo Imaging 3:2:3.4**

Explores the techniques and aesthetics of digital image capture and manipulation using digital photography, scanning, and computer imaging software as tools for creating expression. Students learn essential digital camera operations and skills necessary to navigate and work in the computer environment. Students use industry standard software to edit and enhance original digital photographs and images to express a personal vision. A course fee is required.

**ART 181 - Art Through the Ages I – (Cave to 1300) 3:3:0**

Study of art from prehistoric times through the Middle Ages. The course emphasizes the relationship between art and social, economic, religious, and geographical conditions. Historical contexts of contemporary forms of expression are discussed whenever relevant. Western and non-Western cultures are discussed. *Prerequisite: Eligibility for enrollment in ENGL 101 and completion of any reading courses required by the College Testing and Placement Program. (H&A)*

**ART 182 - Art through the Ages II – (1300 to 20<sup>th</sup> Century) 3:3:0**

Study of art from the late Middle Ages to the early 20th century. The course emphasizes the relationship between art and social, economic, religious, and technological developments. Technical and historical contexts of contemporary forms of expression are stressed. Western and non-Western cultures are discussed. *Prerequisite: Eligibility for enrollment in ENGL 101 and completion of any reading courses required by the College Testing & Placement Program. (H&A)*

**ART 183 - Modern Art 3:3:0**

Study of the development of modern styles in painting, sculpture, architecture and the graphic arts from their origins

in the nineteenth century to the twentieth century. Emphasis is placed on styles and philosophies developed by modern artists and the elements of visual art they used, adapted or invented. *Prerequisite: Eligibility for enrollment in ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.*

**ART 184 - The Art of the Cinema 3:3:0**

Explores film as an art form. This course focuses on the integration of the key fundamentals of filmmaking, such as cinematography, mise-en-scene, editing, and sound. Film theory and criticism are also discussed as a framework for understanding film and its significance. Students are then able to synthesize these foundational components, through shared viewing experiences, in order to critically analyze film. *Prerequisite: Eligibility for enrollment in ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.*

**ART 185 - The History of the Cinema 3:3:0**

Survey course that investigates the development of the cinema from the late nineteenth century to the present. Emphasis is placed on movie genres, the people who have encouraged or created those genres, and how cultural patterns have affected the history of the cinema. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.*

**ART 186 - History & Aesthetics of Photography 3:3:0**

Explores the history of photography with emphasis on the aesthetic elements of traditional and contemporary work - including digital. The significance of technical developments, photographic processes, and photographic criticism is discussed. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required through the College Testing and Placement Program.*

**ART 190 - History of Graphic Design 3:3:0**

A study of the history of graphic design from prehistoric visual communications to contemporary graphic design. This study also considers the impact of typography, technology, and modern art on graphic design, as well as the styles and contributions of individual graphic designers. *Prerequisites: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.*

**ART 191 - Glass 3:2:3.4**

Introduces students to the art, aesthetics, and methods of glass working. This course covers the theory and techniques of blowing, fusing, casting, and cold working. A course fee is required.

**ART 192 - Art of Asia** **3:3:0**  
Surveys the history of art and architecture of South, Southeast, and East Asia. This course focuses upon the artistic tradition of India, China, and Japan. Through classroom discussions, visits to museums, and various assignments, students gain a broader understanding of the historical, social, and philosophical contexts surrounding the art's creation. Students are also able to discover aesthetic, cultural, and religious expressions have had on these ancient and vital civilizations. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.*

**ART 194 - Italian Renaissance Art & STUDY ABROAD** **3:3:0**  
Enables students to travel to Italy and learn about the history of Italian Renaissance art and architecture through on-site evaluation of monuments and artworks. In addition to examining the unique cultural climate that spawned many notable achievements in this epoch, this course emphasizes the impact of Antiquity on artistic creation. Special topics are also addressed including the role of patronage and the changing status of the artist, cross-cultural influence, and social attitudes towards women and those constituting the "Other". *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses as required by the College Testing and Placement program.*

**ART 201 - Color Photography** **3:2:3.4**  
Encompasses the area of color photographic image-making. This course examines color, vision, color principles, and color photographic materials and processes. A portion of the course allows students to participate in a visual design workshop where areas of visual awareness and sensitivity are explored. Through lectures and weekly laboratory sessions, students are able to study and apply color theory, work with color transparencies, and practice in color chromogenic printing, which are used to emphasize theory and build portfolios. A course fee is required. *Prerequisite: ART 115 with a grade of C or higher.*

**ART 202 - Materials and Processes of Photography** **3:2:3.4**  
Studies the theory and science of photography using practical applications. This course covers the theory of image formation, optics, sensitized materials, exposure, processing, tone reproduction, color, variability, visual perception, and digital photography. A course fee is required. *Prerequisite: ART 115 with a grade of C or higher.*

**ART 205 - Color Digital Photography** **3:2:3.4**  
Continues the skills and techniques covered in ART 201 with and added emphasis in digital color photography, digital

visual design, digital books, and digital printing. A course fee is required. *Prerequisite: ART 201.*

**ART 206 - Studio Photography** **3:2:3.4**  
Covers the art of photographic lighting. This course examines the use of available light, quartz light, and digital electronic flash. Digital and traditional 35mm and larger film formats - up to view camera - are employed. A course fee is required. *Prerequisites: ART 115, 117, and 201 with a grade of C or higher.*

**ART 207 - Portfolio Development** **1:1:1**  
Provides students an opportunity to develop a professional portfolio that utilizes work created in various ART courses. This course teaches students how to document, assemble, and refine portfolios that are based upon admission requirements of transfer institutions. A course fee is required. *Prerequisite: ART 105, 107, 122, & 131 with grades of C or higher.*

**ART 208 - Advanced Digital Photography** **3:2:3.4**  
Provides an advanced study of digital photography for commercial and fine art applications. This course explores the techniques and aesthetics of digital image capture and manipulation using digital photography and computer-imaging software. Students evaluate their ideas and visual judgments as they discover the technical, aesthetic, and theoretical aspects of digital photography. A course fee is required. *Prerequisite: ART 115, 117, and 201.*

**ART 209 - Photography Seminar** **3:2:3.4**  
Introduces contemporary topics, technologies, and the ethics of digital photography. This course provides students with marketing, self-promotional, interviewing, and resume skills, along with supplying them additional hands-on training in the refinement of their portfolios - necessary for the work place, transfer institutions, or exhibitions. A course fee is required. *Prerequisite: ART 115 with a grade of C or higher.*

**ART 214 - Advanced Glass** **3:2:3.4**  
Provides an advanced study in the formation of molten glass through the use of various mold making techniques and hot glass approaches. This course affords students the opportunity to produce portfolio work that is based upon advanced techniques of both form and surface. A course fee is required. *Prerequisite: ART 191 with a grade of C or higher.*

**ART 216A - Advanced Crafts: Glass** **1:0:3**  
An advanced glass course in which students explore specific techniques, processes, and concepts in depth. Students produce a body of work that reflects their research. A course fee is required. *Prerequisite: ART 191 and 214 with a grade of C or higher, and permission of the Instructor.*

**ART 216B - Advanced Crafts: Ceramics 1:0:3**  
An advanced ceramics course in which students explore specific techniques, processes, and concepts in depth. Students produce a body of work that reflects their research. A course fee is required. *Prerequisite: ART 151 and 152 with a grade of C or higher, and permission of the Instructor.*

**ART 217A - Advanced Studio Problems I 1:0:3**  
Covers advanced studio problems and production techniques. Students work with ceramic, glass, jewelry and/or wood under the direct supervision of a medium-specific Instructor. *Signature of the Instructor is required.*

**ART 217B - Advanced Studio Problems II 1:0:3**  
Continues the skills and competencies addressed in ARTS 217A. Students further explore advanced studio problems and production techniques - working with ceramic, glass, jewelry, and/or wood - under the supervision of a medium-specific Instructor. *Signature of the Instructor is required.*

**ART 217C - Advanced Studio Problems III 1:0:3**  
Continues the skills and competencies addressed in ARTS 217B. Students further explore advanced studio problems and production techniques - working with ceramic, glass, jewelry, and/or wood - under the supervision of a medium-specific Instructor. *Signature of the Instructor is required.*

**ART 220 - Color and Design 3:2:3.4**  
Introduces basic elements and principles of color theory. Topics include terminology, interaction of color, color perception, chromatic relationships, color psychology, and harmony. Students work in a variety of tools, from paint mixtures to collage. A course fee is required. *Prerequisite: ART 105 with a C or higher.*

## **ASTRONOMY**

**ASTR 103 - Introduction to Planetary Astronomy 3:3:1**  
Introduces the solar system with an emphasis on the sun, major and minor planets, the earth-moon system, asteroids, comets, meteors, the Kuiper Belt, and the Oort Cloud. This course covers the physical laws of motion and the properties of light, the origin of the Solar System, and formation of the planets. Laboratory exercises reinforce the concepts discussed in the lectures pertaining to the location and motion of objects in the sky. Nominal use of math is required. A course fee is required. (SCI/LAB)

**ASTR 104 - Introduction to Stellar Astronomy 3:3:1**  
Covers the physical features of stars (including the sun as a star), stellar distances and motion, evolution and star types, and the Milky Way Galaxy along with other galaxies. Topics include the H-R Diagram, cosmology, galactic clusters, and

the history of astronomy. The course includes discussion of recently discovered phenomena such as x-ray and gamma ray bursters, brown dwarfs, and extrasolar planets. It also includes a short unit on the solar system. Computer Planetarium and laboratory exercises allow students to gain familiarity with the science of astronomy. Nominal use of math is required. A course fee is required. (SCI/LAB)

## **AUCTIONEERING**

**AUCT 101 - Audience Communications 3:3:0**  
Covers the principles and techniques of developing effective interpersonal communication with individuals, groups, and audiences. The auctioneer's "chant" is taught. *Co-requisite: AUCT 102, 103, 104, 105, and 106.*

**AUCT 102 - Procurement and Appraisal of Merchandise I 3:3:0**  
Covers the principles of obtaining merchandise for the auction and appraisal as applied to antiques, modern household goods, farm equipment, heavy equipment, automobiles, and collectibles. *Co-requisite: AUCT 101, 103, 104, 105, and 106.*

**AUCT 103 - Procurement and Appraisal of Merchandise II 3:3:0**  
Covers the principles of obtaining merchandise for the auction and appraisal as applied to real estate, livestock, coins, jewelry, and art. *Co-requisite: AUCT 101, 102, 104, 105, and 106.*

**AUCT 104 - Auctioneering Law 3:3:0**  
Examines the Pennsylvania Commonwealth Law Code, which regulates Auctioneers and auctioneering. The federal and state statutes, which govern the operations of all phases of auctioneering, are studied. *Co-requisite: AUCT 101, 102, 103, 105, and 106.*

**AUCT 105 - Preparations for the Auction 4:4:0**  
Addresses the techniques, procedures, and principles necessary to accomplish the preparations for an auction. *Co-requisite: AUCT 101, 102, 103, 104, and 106.*

**AUCT 106 - The Auction 4:4:0**  
Addresses the principles, techniques, and procedures necessary to conduct and conclude an auction. *Co-requisite: AUCT 101, 102, 103, 104, and 105.*

## **AUTOMOTIVE TECHNOLOGY**

**AUTO 101 - Automotive Fundamentals 3:2:3**  
Provides an introduction to automotive service practices and procedures, such as service information systems, component

identification, and precision measurements. This course emphasizes the personal safety and proper use of shop equipment and tools. A course fee is required. *Enrollment is restricted to students in the Automotive Technology AAS and the Automotive Service Advisor Certificate programs. Signature of the Faculty Program Supervisor is required for enrollment, as well as a passing score on a mechanical aptitude test and a valid PA Driver's license.*

**AUTO 103 - Automotive Powerplants 3:2:3**

Introduces students to automotive engine servicing and assembly. This course emphasizes service procedures for gasoline and diesel fueled engines such as disassembly, measurement, and assembly. Engine mechanical diagnosis and testing is also included. A course fee is required. *Enrollment is restricted to students in the Automotive Technology AAS and the Automotive Service Advisor Certificate programs. Pre or Co-requisite: AUTO 101 with a grade of C or higher.*

**AUTO 105 - Fundamentals of Electrical/Electronics I 3:2:3**

Introduces students to automotive electrical systems and includes fundamental electrical and electronic principles such as resistance, induction, and magnetism. This course emphasizes the use of test equipment and electrical meters as students work with starting and charging systems. Automotive wiring diagrams, electronic service information, and basic diagnostic testing are also included. A Digital Multi-Meter is provided as part of the course fee. *Enrollment is restricted to students in the Automotive Technology AAS and the Automotive Service Advisor programs. A course fee is required. Pre or Co-requisite: AUTO 101 with a grade of C or higher.*

**AUTO 107 - Fuel & Emission Control Systems 3:2:3**

Provides students with an overview of low and high pressure fuel system components, construction, and diagnosis. This course also discusses emission control system operation and diagnosis, basic engine performance testing, and emphasizes the use and interpretation of various diagnostic equipment and tools. The PA Emission Inspector Certification examination is also incorporated into this course. A course fee is required. *Enrollment is restricted to students in the Automotive Technology AAS and the Automotive Service Advisor Certificate programs. Pre or Co-requisite: AUTO 101 with a grade of C or higher. A valid PA Driver's License is require for enrollment into this course.*

**AUTO 151 - Braking Systems 3:2:3**

Provides students with an introduction to automotive braking components and their operation. This course presents hydraulic principles, brake system component operation, and

anti-lock/stability control systems. Disc and Drum Brake component service and replacement is emphasized. The Pennsylvania Vehicle Safety Inspection Certification is also part of the class. A course fee is required. *Enrollment is restricted to students in the Automotive Technology AAS and the Automotive Service Advisor Certificate programs. Pre or Co-requisite: AUTO 101 with a grade of C or higher. A valid PA driver's license is required for enrollment into the course.*

**AUTO 153 - Suspension Systems 3:2:3**

Provides students with an introduction to wheels and tires, suspension, and steering system components and service. This course emphasizes the safe use of shop equipment to mount and balance tires, to change suspension components, and to perform wheel alignments. Diagnosing and testing steering and suspension systems is also included, as well as the Pennsylvania Vehicle Safety Inspection Certification. A course fee is required. *Enrollment is restricted to students in the Automotive Technology AAS and the Automotive Service Advisor Certificate programs. Pre or Co-requisite: AUTO 101 with a grade of C or higher; A valid PA driver's license is required for enrollment.*

**AUTO 157 - Engine Performance Testing 3:2:3**

Introduces students to light duty, vehicle spark, and compression-ignition-control-systems. This course covers the design, operation, and diagnostic procedures, as engine performance testing using current ignition diagnostic tools, oscilloscopes, and other equipment is emphasized and introduces students to the computer control system operation and diagnosis is introduced. A course fee is required. *Enrollment is restricted to students in the Automotive Technology AAS and the Automotive Service Advisor Certificate. Prerequisite: AUTO 107 with a grade of C or higher.*

**AUTO 159 - Automotive Heating/Air Conditioning Systems 3:2:3**

Provides students with an introduction to basic heating and refrigeration principles as applied to automobile service and replacement. This course focuses on the climate control system components and their operation, as well as diagnosing mechanical and electrical faults in automotive HVAC systems. The Automotive Service Excellence (ASE) Refrigerant Recovery and Recycling Program and Certification Test are completed during this course. A course fee is required. *Enrollment is restricted to students in the Automotive Technology AAS and the Automotive Service Advisor Certificate programs. Prerequisite: Auto 105 with a grade of C or higher.*

**AUTO 191 - Cooperative Work Experience 2:0:35**  
Provides students with the opportunity to obtain "real world" experience through full-time employment within an approved automotive repair facility. Students work a total of 480-hours during the semester performing tasks that are consistent with the topics studied throughout the Automotive Technology AAS and the Automotive Service Advisor Certificate programs. *Prerequisite: AUTO 101, 105, 107, 151, and 153.*

**AUTO 203 - Manual Transmissions/Transaxles 3:2:3 & Differentials**  
Introduces students to driveline components and manually shifted transmissions and transaxles used on light duty vehicles. This course encompasses the theory and operation of driveline components such as transfer cases, axle assemblies, differentials and manually shifted transmissions. Hands-on assembly and reconditioning is also emphasized. A course fee is required. *Enrollment is restricted to students in the Automotive Technology AAS and the Automotive Service Advisor Certificate. Prerequisite: AUTO 101 with a grade of C or higher.*

**AUTO 205 - Intermediate Automotive Electrical/ Electronics 3:2:3**  
Provides students with a review of electrical and electronic theory as presented in AUTO 105 and introduces advanced topics that include Supplemental Restraint Systems, wire and terminal repair, accessory operation and diagnosis, and in-car computer networking. The use of Digital Volt/Ohm Meters (DVOMs), oscilloscopes, and scan tools for diagnosis is also discussed. A course fee is required. *Enrollment is restricted to students in the Automotive Technology AAS and the Automotive Service Advisor Certificate programs. Prerequisite: AUTO 105 with a grade of C or higher.*

**AUTO 207 - Computerize Powertrain Controls 3:2:3**  
Combines the concepts and skills taught in previous engine performance courses and demonstrates how computerized controls are used to control engine output and emissions. This course illustrates how input sensors, low and high-side output drivers, adaptive strategies, and data streaming are all integrated in powertrain controls. Diagnosis, testing, and programming of Computerized Powertrain Controls is also emphasized. A course fee is required. *Enrollment is restricted to students in the Automotive Technology AAS and the Automotive Service Advisor Certificate. Co-requisite: AUTO 157.*

**AUTO 251 - Service Department Management 2:2:0**  
An overview of service/parts department operating procedures. Emphasis is on proper customer relations, how to organize service work, and how to interpret factory and extended warranties. The duties of service advisors, shop

supervisors and service managers are discussed as they relate to becoming service professionals in the automotive field. A course fee is required. *Prerequisite: AUTO 101.*

**AUTO 253 - Automatic Transmissions/ Transaxles 3:2:3**  
Automatic transmission/transaxle powerflow and hydraulic circuitry in today's vehicles. Overhaul procedures for these transmission/transaxles as well as diagnosis and minor service procedures are emphasized. Electronic controls such as shift solenoids and pressure control circuits and logic are introduced. A course fee is required. *Pre or Co-requisite: AUTO 205*

**AUTO 255 - Advanced Electrical/Electronics 3:2:3**  
Encompasses the wide array of Safety, Driver-Assist, Entertainment, Security and Infotainment systems available on today's automobiles. This course emphasizes the components, communication and operation of these systems. Advanced diagnostics of various in-car computer networks using lab scopes and meters is also included. A course fee is required. *Enrollment is restricted to students in the Automotive Technology AAS and the Automotive Service Advisor Certificate. Prerequisite: AUTO 205 with a grade of C or higher.*

## **AUTOMOTIVE (GM) TECHNOLOGY**

**AGM 101 - GM Automotive Fundamentals 3:2:3**  
Provides an introduction to General Motors (GM) automotive service practices and procedures. This course emphasizes the personal safety and proper use of shop equipment and tools. GM service information systems, scan tools, component identification, and precision measurement are introduced. *Enrollment is restricted to students in the Automotive Service Education Program (GM) AAS program. A course fee is required.*

**AGM 103 - GM Automotive Powerplants 3:2:3**  
Provides students with an introduction to General Motors (GM) automotive engine servicing and assembly. This course focuses on service procedures for current GM gasoline-fueled engines such as disassembly, measurement, and assembly. Engine mechanical diagnosis and testing is also discussed. A course fee is required. *Enrollment is restricted to students in the Automotive Service Education Program (GM) AAS program. Pre or Co-requisite: AGM 101 with a grade of C or higher.*

**AGM 105 - GM Automotive Electrical Fundamentals/ Electronics I 3:2:3**  
Introduces students to General Motors (GM) automotive electrical systems. This course covers fundamental electrical and electronic principles such as resistance, induction, and

magnetism and emphasizes the use of test equipment and electrical meters as students work with starting and charging systems. General Motors wiring diagrams, electronic service information, and basic diagnostic testing are also included. A Digital Multi-Meter is provided as part of the course fee. A course fee is required. *Enrollment is restricted to students in the Automotive Service Education Program (GM) AAS program. Pre or Co-requisite: AGM 101 with a grade of C or higher.*

### **AGM 107 - GM Automotive Fuel & Emission Control Systems 3:2:3**

Provides students with an overview of low and high- pressure fuel system components, construction, and diagnosis on current General Motors (GM) vehicles. This course also discusses emission control system operation and diagnosis, basic engine performance testing, and emphasizes the use and interpretation of GM diagnostic equipment and tools. The PA Emission Inspector Certification examination is also incorporated into this course. A course fee is required. *Enrollment is restricted to students in the Automotive Service Education Program (GM) AAS program. Pre or Co-requisite: AGM 101 with grade of a C or higher. A valid PA Driver's License is required for enrollment into this course.*

### **AGM 151 - GM Automotive Braking Systems 3:2:3**

Introduces students to General Motors (GM) automotive braking components and their operation. This course presents hydraulic principles, brake system component operation, and GM anti-lock/stability control systems and emphasizes the service and replacement of Disc and Drum Brake components. The Pennsylvania Vehicle Safety Inspection Certification is also part of this class. A course fee is required. *Enrollment is restricted to students in the Automotive Service Education Program (GM) AAS program. Pre or Co-requisite: AGM 101 with a grade of C or higher. A valid PA driver's license is required for enrollment into the course.*

### **AGM 151A - GM Automotive Braking Systems 2:1.5:1.5**

Troubleshooting and servicing car and light truck drum/disc and four-wheel disc systems. Instruction and procedures for the brake inspection portion of a PA State Vehicle Safety Inspection are included. A course fee is required. *Prerequisite: AGM 101 or AUTO 101; Co-requisite: AGM 101 or AUTO 101.*

### **AGM 151B - GM Automotive Antilock Braking Systems 1:0.5:1.5**

Troubleshooting and servicing car and light-truck antilock/traction control systems. Diagnostic procedures for anti-lock braking/traction control systems are introduced. A course fee is required. *Prerequisite: AGM 101 or AUTO 101; Co-requisite: AGM 101 or AUTO 101.*

### **AGM 153 - GM Automotive Steering & Suspension Systems 3:2:3**

Introduces students to wheels and tires, suspension, and steering systems used on General Motors (GM) vehicles. This course emphasizes the safe use of shop equipment to mount and balance tires, change suspension components, and perform wheel alignment. The diagnosis and testing of steering and suspension systems, including vibration analysis, is included. The Pennsylvania Vehicle Safety Certification is also part of this class. A course fee is required. *Enrollment is restricted to students in the Automotive Service Education Program (GM) AAS program. Pre or Co-requisite: AGM 101 with a grade of C or higher. A valid PA driver's license is required for enrollment into the course.*

### **AGM 153A - GM Automotive Suspensions & Alignment 2:1.5:2**

Design, operation and service procedures used to diagnose and service General Motors suspension systems. Proper vehicle alignment is emphasized as well as PA State Vehicle Inspection law as it pertains to suspension systems. A course fee is required. *Prerequisite: AGM 101 or AUTO 101; Co-requisite: AGM 101 or AUTO 101.*

### **AGM 153B - GM Automotive Steering Systems 1:0.5:1**

Design, operation and service procedures used to diagnose and service General Motors steering systems. Electronic and hydraulic controls are emphasized. A course fee is required. *Prerequisite: AGM 101 or AUTO 101; Co-requisite: AGM 101 or AUTO 101.*

### **AGM 157 - GM Automotive Ignition Control Systems 3:2:3**

Provides students with an introduction to General Motors (GM) Spark and Compression Ignition Control systems. This course covers the design, operation, and diagnostic procedures, as engine performance testing using current GM tools, oscilloscopes, and other equipment is emphasized. Also the computer control system operation and diagnosis is introduced. A course fee is required. *Enrollment is restricted to students in the Automotive Service Education Program (GM) AAS program. Prerequisite: AGM 105 and 107 with grades of C or higher.*

### **AGM 159 - GM Automotive Heating/ Air Conditioning Systems 3:2:3**

Provides students with an introduction to basic heating and refrigeration principles as applied to automobile service and replacement. This course focuses on climate control system components, their operation, and diagnosis in current GM vehicles. The Automotive Service Excellence (ASE) Refrigerant Recovery and Recycling Program and Certification Test are completed during the course. A course

fee is required. *Enrollment is restricted to students in the Automotive Service Education Program (GM) AAS program. Prerequisite: AGM 105 with a grade of C or higher.*

**AGM 191 - GM Cooperative Work Experience I 1:0:10**

A cooperative work experience of paid full-time employment with a General Motors dealership. Students perform tasks consistent with topics in prerequisite courses among their duties. Students must purchase some hand tools at or before this time. *Prerequisite: AGM 101, 105, 151, and 153 with grades of C or higher.*

**AGM 192 - GM Cooperative Work Experience II 1:0:10**

A cooperative work experience of paid full-time employment with a General Motors dealership. Students perform tasks consistent with topics in prerequisite courses among their duties. Students must purchase some hand tools at or before this time. *Prerequisite: AGM 103, 107, 159, and 205.*

**AGM 203 - GM Automotive Manual 3:2:3**

**Transmissions/ Transaxles & Differentials**

Introduces students to driveline components and manually shifted transmissions and transaxles used on current GM vehicles. This course encompasses the theory and operation of driveline components such as transfer cases, axle assemblies, differentials and manually shifted transmissions. Hands-on assembly and reconditioning is also emphasized. Current GM driveline vibration detection and correction is introduced. A course fee is required. *Enrollment is restricted to students in the Automotive Service Education Program (GM) AAS program. Prerequisite: AGM 101 with a grade of C or higher.*

**AGM 205 - GM Automotive Electrical 3:2:3**

**Fundamentals/ Electronics II**

Provides students with a review of electrical and electronic theory presented in AGM 105 and introduces advanced topics that include Supplemental Restraint Systems, wire and terminal repair, accessory operation and diagnosis, and in-car computer networking. The use of Digital Volt/Ohm Meters DVOMs, oscilloscopes, and General Motors (GM) scan tools for diagnosis is also discussed. A course fee is required.

*Enrollment is restricted to students in the Auto-motive Service Education Program (GM) AAS program. Prerequisite: AGM 105 with a grade of C or higher.*

**AGM 207 - GM Automotive Fuel Injection Systems 3:2:3**

Combines the concepts and skills taught in previous engine performance courses and shows how computerized controls are used to control engine output and emissions. Input sensors, low and high-side output drivers, adaptive strategies, and data streaming are all integrated in powertrain controls. Diagnosis, testing, and programming of Powertrain

Management Systems is also emphasized. A course fee is required. *Enrollment is restricted to students in the Automotive Service Education Program (GM) AAS program. Co-requisite: AGM 157.*

**AGM 251 - GM Dealership Operations 2:2:0**

An overview of service/parts department operation procedures. Emphasis is placed on proper customer relations, how to mechanize service work, and how to interpret factory and extended warranties. The duties of service advisors, shop supervisors, and service managers are discussed as they relate to becoming a service professional. A course fee is required. *Prerequisite: AGM 101.*

**AGM 253 - GM Automatic Transmissions/ Transaxles 3:2:4**

Automatic transmission/transaxle powerflow and hydraulic circuitry in General Motors cars from 1985 to the present. Overhaul procedures for these transmissions/transaxles as well as diagnosis and minor service procedures, including computer controls, are emphasized. A course fee is required. *Prerequisite: AGM 205.*

**AGM 255 - GM Advanced Automotive Electronics 3:2:3**

Provides a capstone experience for electrical and electronics for students in the Automotive Service Education program-GM (ASEP). This culminating experience emphasizes General Motors (GM) Safety Systems. Entertainment Systems, and Infotainment Systems. Advanced diagnostics of various in-car computer networks using lab scopes and meters is also included. A course fee is required. *Enrollment is restricted to students in the Automotive Service Education Program (GM) AAS program. Prerequisite: AGM 205 with a grade of C or higher.*

**AGM 291A - GM Cooperative Work Experience III 1:0:10**

A cooperative work experience of paid full-time employment with a General Motors dealership. Students perform tasks that demonstrate the topics of automotive technology among their duties. *Students must purchase some hand tools at or before this time. Prerequisite: AGM 157.*

**AGM 292A - GM Cooperative Work Experience IV 1:0:10**

A cooperative work experience of paid full-time employment with a General Motors dealership. Students perform tasks that demonstrate the topics of automotive technology among their duties. *Students must purchase some hand tools at or before this time. Prerequisite: AGM 203, 207, and 255.*

**AGM 293A - GM Cooperative Work Experience V 1:0:10**

A cooperative work experience of paid full-time employment with a General Motors dealership. Students perform tasks that demonstrate the topics of automotive technology among their duties. *Students must purchase some hand tools at or before this time. Prerequisite: AGM 251 and 253.*

**BAKING****BAKE 101 - Baking I****4:2:6**

Introduces students to techniques in the preparation of assorted quick breads and muffins, basic yeast doughs, enriched and laminated doughs, cookies, and brownies. This course combines theory, demonstration, and hands-on laboratory time as students evaluate and study product identification and functions while applying bakeshop sanitation. In addition, students are able to practice the proper use of equipment and bakeshop mise en place - emphasizing precise calculation of baker's mathematics and formulas. A gingerbread showpiece is constructed for grading. Students are responsible for purchasing an appropriate uniform and a designated small equipment kit. A course fee is required. *Enrollment is restricted to students in the Baking and Pastry Arts Certificate and in the Culinary Arts AAS and Certificate programs. Co-requisite: CULI 113.*

**BAKE 111 - Pastry Arts I****4:2:6**

Introduces the techniques and presentations of traditional American and classic international desserts through theory, demonstration, and hands-on laboratory time. This course specifically addresses layered and tiered cakes, tortes, frostings, fillings, custards, and curds with an emphasis on pies and tarts, ice cream, and frozen desserts. The course also focuses on working with chocolate and basic cake decorating procedures. Desserts, both individual and retail, are plated for presentation. Students must have an approved uniform and a small designated equipment kit. A course fee is required. *Enrollment is restricted to students in the Baking and Pastry Arts Certificate and the Culinary Arts AAS and Certificate programs. Prerequisite: BAKE 101 and CULI 113 with a grade of C or higher. Must have passed the National Restaurant Association Educational Foundation's SERVSAFE Certification.*

**BAKE 201 - Advanced Baking and Pastry Arts 4:2:6**

Focuses on advanced breads and pastries. This course exposes the student to a continuation of various bread styles using advanced techniques and hands-on application for sourdough and artisan style breads. Specialty dietary baking products are also covered. Decorating techniques, such as gumpaste and fondant are introduced for cakes and showpieces and chocolate candies and sugar confections are outlined. In addition, restaurant and plated desserts are covered with

flavor profiling and plate composition. A theme specific bread showpiece, utilizing different decorative doughs, is a part of the grading. Construction, assembly, decoration, and cost analysis of a tiered theme cake is also a part of the grading. Students must have an approved uniform and a designated small equipment kit. A course fee is required. *Enrollment is restricted to students in the Baking and Pastry Arts Certificate and in the Culinary Arts AAS and Certificate programs. Prerequisite: BAKE 101 and 111 with grades of C or higher.*

**BAKE 291 - Baking & Pastry Arts Internship 3:0:20**

Provides students with the opportunity to obtain employment in an approved bakery worksite for the equivalent of 280 hours of on-the-job training. Weekly progress reports are required. The student compiles a portfolio of the internship experience for a grade. *Enrollment is restricted to students in the Baking and Pastry Arts Certificate and in the Culinary Arts AAS and Certificate programs. Prerequisite: BAKE 101 with a grade of C or higher.*

**BIOLOGY****BIOL 100 - Basic Microbiology****1:1:0**

General review of microbiology with emphasis on pathological mechanisms of infectious disease and precautions necessary for the prevention of infectious disease in health care and extended care facilities.

**BIOL 101 - General Biology I****4:3:3**

Emphasizes biological organization; basic biochemistry; biophysics of living systems; membrane dynamics; cellular structures and functions; cellular reproduction, photosynthesis; cellular respiration; chromosomal and molecular inheritance. This course is intended for science majors. A course fee is required. *Prerequisite: High school academic biology and chemistry; Pre or Co-requisite: ENGL 101 and reading ability at the ENGL 003 level or higher; or permission of the Instructor. (SCI/LAB)*

**BIOL 102 - General Biology II****4:3:3**

Continues the competencies taught in BIOL 101. This course emphasizes basic life functions of animal systems as it provides a detailed examination of organ systems which, in the mammal, support homeostasis. In addition, this course presents the principles of heredity, reproduction and embryology; evolution as a process; and structure, function, and classification of major phyla of the animal kingdom. A course fee is required. *Prerequisite: BIOL 101 or the equivalent with a grade of C or higher.*

**BIOL 103 - Environmental Science 3:3:0**  
Introduces basic concepts of human ecology, such as population, natural resources, and pollution, as well as current issues of environmental concern. (SCI)

**BIOL 103H - Honors Environmental Science 3:3:0**  
Introduces basic concepts of human ecology such as population, natural resources, and pollution, as well as current issues of environmental concern. Using a seminar or discussion-based approach, this course encourages independent, creative and critical inquiry and prepares students for the practical application of information by emphasizing effective research strategies and technologies congruent with the field of study. *Prerequisite: Completion of all developmental reading and writing courses required as a result of the College Testing and Placement Program.* (SCI)

**BIOL 105 - Medical Terminology 3:3:0**  
The study of frequently used medical terms, abbreviations, and symbols as found within their usual contexts. Approached through an integrative review of anatomy and physiology, common pathophysiological states, and related diagnostic tests and treatments (including an introduction to the metric system).

**BIOL 108 - Introduction to Biological Science 3:3:1**  
Reviews contemporary and historical advances within biology. This course is designed for the non-science major and studies the evolution and diversity of life, the spectrum of animal and plant life, and ecology. A course fee is required. (SCI/LAB)

**BIOL 111 - Introduction to Human Biology 3:3:1**  
Explores basic biological principles by studying the structure and function of the human body with a focus on body systems. This course emphasizes homeostasis, the relationship of anatomy and physiology at all levels of biological organization, and the demonstration of life processes through the normal functioning of body systems. This is an introductory science course for non-science majors and preparatory for students in Health and Public Service programs. A course fee is required. *Prerequisite: ENGL 003, 007, or 057 with grade of C or higher.* (SCI/LAB)

**BIOL 115 - Introduction to Cells & Molecules 3:3:1**  
Introduces students to the molecular structure and function of the cell. This course specifically addresses the basis of scientific investigation, the chemistry of cells, the cell membrane structure and function, cellular organelles, cell metabolism, cell division, and the basic principles of genetics (both classical and molecular). *This course is an introductory biology course for science majors and pre-allied health*

*students and is recommended to be entered prior to completing BIOL 101, 121, or 221. A course fee is required.*

**BIOL 121 - Anatomy and Physiology I 4:3:3**  
Emphasizes basic body organization; functional biochemistry; cytology, histology, and the study of integumentary, skeletal, muscular, circulatory, and respiratory systems, as well as studies normal anatomy and physiology with clinical applications. This course is intended for students interested in pursuing careers within the health sciences. A course fee is required. *Prerequisite: ENGL 003, 007, or 057 with a grade of C or higher; High school biology and chemistry or HACC equivalents.* (SCI/LAB)

**BIOL 122 - Anatomy and Physiology II 4:3:3**  
Continues the competencies taught in BIOL 121. This course includes a comprehensive study of the digestive, excretory, endocrine, reproductive, and nervous systems. A course fee is required. *Prerequisite: BIOL 121 with a grade of C or higher.* (SCI/LAB)

**BIOL 130 - Field Biology 4:3:3**  
Field studies in Biology intended to acquaint the student with local flora and fauna, their biology and ecological relationships. Emphasis is placed on identification of organisms, collecting techniques, and their economic and ecological significance. A course fee is required.

**BIOL 201 - Invertebrate Zoology 4:3:3**  
A functional, morphological approach to the study of the major and minor invertebrate phyla. Special attention is given to phyla and organisms of economic and evolutionary importance. *Pre or Co-requisite: BIOL 102 or permission of the Instructor.*

**BIOL 202 - Vertebrate Zoology 4:3:3**  
A phylogenetic study of the structural, functional and behavioral adaptations of the vertebrates: fishes, amphibians, reptiles, birds, mammals. *Pre or Co-requisite: BIOL 102 or permission of the Instructor.*

**BIOL 206 - Ecology 4:3:3**  
Familiarize science majors with the concepts and applications of modern ecology. This course emphasizes ecological principles and case studies (including the natural history of aquatic and terrestrial life), individual ecology, and the distribution and abundance of organisms, population dynamics, and life-history strategies. Other additional topics covered include: competition, herbivory, predation and symbiotic relationships; disturbance and succession; community structure and function; ecosystem energetics and biogeochemical cycling. A course fee is required.

*Prerequisite: BIOL 101 or 103 or 108 or 130 with a grade of C or higher.*

**BIOL 210 - The Ecology of Barrier Islands 3:2:3**

Provides a comprehensive study of Barrier Island ecosystems. This course includes field studies and lectures that cover the topics of geography, geology, topography, stratigraphy, climate, oceanography, marine biology, tidal zone dynamics, ecology, and the interaction of man with this ecosystem. Field study activities include several hikes, a kayaking tour, and a workboat tour. In addition, students are able to explore the different habitats created in the near-shore, tidal, dune, salt marsh, freshwater marsh, and forest communities. A course fee is required.

**BIOL 212 - Botany 4:3:3**

Introduces students to the basic concepts of plant biology and a survey of major groups of plants and plant-like organisms. This course expands on many of the biological concepts introduced in BIOL 101 - General Biology I, as it includes plant physiology, comparative anatomy, and plant classification. Plant reproduction and other major botanical concepts are emphasized through the study of local flora, laboratory exercises, and lectures. A course fee is required. *Prerequisite: BIOL 101 with a grade of C or higher.*

**BIOL 215 - Introduction to Genetics 4:3:3**

Provides a foundation in classical and molecular genetics. This course allows students to gain an understanding of genetic material and explore topics within the field genetics including non-Mendelian inheritance, linkage, gene interactions and regulation, molecular genetics, and mutations. A course fee is required. *Prerequisite: BIOL 101 and 102 with grades of C or higher, or the equivalent.*

**BIOL 221 - Microbiology 4:3:2**

Provides students with a comprehensive study of the structure and function of microorganisms. This course presents the control of microorganisms, immunity, and microbes in the news, as well as discusses selected infectious diseases. Procedures and techniques used in the study of microorganisms are emphasized through the laboratory activities. A course fee is required. *Prerequisite: High school biology and chemistry, or HACC equivalents. (SCI/LAB)*

**BIOL 225 - Human Biology 3:3:0**

Fluids, electrolytes, nutrition therapy, and the physiology of exercise. *Prerequisite: BIOL 121 and BIOL 122.*

**BIOL 230 - Physiological Pathology 3:3:0**

The scientific study of the alterations produced by disease in human systems. *Prerequisite: BIOL 122.*

**BIOL 250 - Tropical Ecology of the Bahamas 4:3:3**

Introduces students to the study and general principles of ecology - specifically those pertaining to the tropical ecology of island ecosystems - using the scientific method. Course topics emphasize terrestrial and marine ecology of island ecosystems, biodiversity, food webs, natural history, conservation biology, ecotourism, and field research techniques. Students travel to the Bahamas and participate in hands-on field study. Their studies are supplemented through online coursework designed to educate them further on both ecological theory and the island ecosystems visited. This course is designed for Biology majors, but is open to all students of all majors. A course fee is required. *Prerequisite: ENGL 101 with a grade of C or higher; or permission of the Instructor.*

**BIOTECHNOLOGY**

**BTC 101 - Overview of Biotechnology 3:3:0**

Covers the basic principles of biotechnology with an emphasis placed on the current applications and techniques of this technology. The course focuses on current concepts and themes in biotechnology, scientific methodology, as well as the ethical, legal, and social implications of biotechnology. *Prerequisite: High school academic biology and chemistry or HACC equivalents. (SCI)*

**Building Construction Technology**

**BCT 211 - Structural Concepts for Construction 3:3:0**

Provides students with a qualitative examination of the fundamental structural concepts and principles associated with structural design. This course intends to help students develop structural literacy as they examine loads, connections, structural systems, and the structural characteristics and applications of wood, steel, and concrete. Historical and modern examples of structural forms are also explored. *Prerequisite: GTEC 110 and ARCH 130 with grades of C or higher.*

**BCT 212 - Construction Contracts & Related Laws 3:3:0**

Covers the legal factors associated with the operation of a construction company. This course places an emphasis on a practical approach to the law as it relates to such topics as construction contracts, inter-professional relationships, payments, bonds, liens, labor practices, liquidated damages, arbitration and delays. Also covered are the legal aspects of drawings, specifications, and insurance.

**BCT 213 - Construction Supervision & Leadership 3:3:0**

The human relations skills needed by a construction project manager/supervisor in order to develop sound managerial practices. Project management problems and their influence

on efficiency, productivity and employee morale are studied.  
*Prerequisite: ARCH 110 or permission of the Department Chair.*

**BCT 214 - Project Management 3:3:0**

The construction management process with emphasis on the phases of a commercial project from inception through owner occupancy. The roles of the owner, architect, construction manager, general contractor and subcontractors are emphasized. *Prerequisite: ARCH 110 and ARCH 130 or permission of the Department Chair.*

**BCT 215 - Construction Estimating 3:3:0**

Encompasses the conceptual, preliminary, detailed, and quantity estimating practices that are currently used in the construction industry. This course also emphasizes the interrelationship of drawings, specifications, and construction contracts is emphasized. Students prepare conceptual and final estimates for an actual commercial construction project and are introduced to the use of computerized methods of construction estimating. *Prerequisite: ARCH 130, CIS 105, and GTEC 110 with grades of C or higher; Eligibility for enrollment into MATH 103 or permission of the Instructor.*

**BCT 216 - Construction Planning & Scheduling 3:3:0**

Covers the planning and scheduling process of a construction project. This course emphasizes the importance of coordinating sub-contractors, materials, equipment, project funding, and cash flow. Utilization of computers in the planning and scheduling process is extensively integrated. *Prerequisite: GTEC 110, ARCH 130, & CIS 105 with grades of C or higher; or Permission of the Instructor.*

**BCT 217 - Construction Project Administration 3:3:0**

Addresses the full construction process. This course discusses all phases - from project conception to its completion - of a construction project including the roles that the owner, architect, construction manager, general contractor, and subcontractor has throughout the project. Students are taught the procedures for effective project cost control and the systematic methods of handling changes, claims, and disputes for both general and subcontractors. Construction accounting is also covered. *Prerequisite: GTEC 110 with a grade of C or higher. Co-requisite: ARCH 130; Or, permission of the Instructor.*

**BCT 218 - Construction Documents for Technicians 1:1:0**

A first-level course to prepare for certification examinations by the Construction Specifications Institute. Topics include the Institute's Manual of Practice and American Institute of Architects' General Conditions of Construction Contracts.

**BUSINESS**

**BUSI 101 - Introduction to Business 3:3:0**

Introduces students to the broad field of business. This course covers an overview of the basic functions of business including management, marketing, finance, accounting, and human resources. The course also introduces students to basic economic systems and discusses the importance of ethics and corporate social responsibility to business success. (FYS)

**BUSI 201 - Business Law I 3:3:0**

Introduces students to the principles of law that apply to businesses operating within the United States legal system. This course emphasizes contract law and the Uniform Commercial Code. This course also addresses constitutional law, the courts and alternative dispute resolution, ethics and social responsibility, tort law, intellectual property, internet law, social media and privacy, and criminal law. *Eligibility for enrollment into ENGL 003, 007, or 057 as required by the College Testing and Placement Program.*

**BUSI 209 - Legal Environment of Business 3:3:0**

Introduces students to the law as it affects business organizations. Students are taught how to analyze, use and apply the law when making business decisions. This course also helps them to develop their knowledge in the areas of contracts, constitutional law, criminal law, court structures, ethics and social responsibility, negligence, torts, product and strict liability, intellectual property, technology law, and employment law. *Prerequisite: Eligibility for enrollment into ENGL 003, 007, or 057 as required by the College Testing and Placement program.*

**BUSI 230 - Introduction to International Business 3:3:0**

Explores the role and importance that international business plays in a diverse, global economy. This course discusses the environmental and cultural aspects of international business and the major functional areas of trade, investment, economic integration, and the international monetary system. There is also an emphasis on organizational strategy including entry modes, product development and marketing, operations, and human resources management. *Prerequisite: Eligibility for enrollment into ENGL 003, 007, or 057, as identified by the College Testing and Placement Program.*

**BUSI 245 - Business Ethics 3:3:0**

Provides students with a general introduction to ethics as it affects decision-making in the business environment. This course specifically addresses ethical theory, moral issues, economic justice, capitalism, corporate social responsibility, individual moral decision-making, social and economic policy, and the environment. A strong emphasis is placed on the use of case studies. *Prerequisite: Eligibility for enrollment*

into ENGL 003, 007, or 057 as identified by the College Testing and Placement Program.

**BUSI 290 - Business Capstone 3:3:0**

Prepares students for both entry-level positions and upward career mobility in business. This capstone course allows students to apply the knowledge and skills acquired in prior courses through the organization of professional portfolios and completing an experiential learning activity. Students also develop professional skills needed for employment. This course is designed for students to enroll in their last semester prior to graduation. *Prerequisite: ACCT 101; BUSI 101, 201, or 209; CIS 105, ENGL 106; MGMT 201; and MKTG 201 with grades of C or higher. Overall GPA of 2.0 or higher; Completion of at least 36 credits prior to enrollment.*

**BUSI 291 - Business Internship 3:0:9**

Required students to obtain an internship approved by the course instructor prior to registration. Business students complete a minimum of 126 hours of verified professional field experience related to the student's concentration in a student-obtained internship approved by the course instructor. This internship experience allows students to apply the knowledge and skills they have acquired throughout a business curriculum culminating in a final reflective portfolio highlighting the main achievements of the internship. *Enrollment is restricted to students in the Business AAS program. Prerequisite: ACCT 101; BUSI 101, 201 or 209; CIS 105; ENGL 106; MGMT 201; & MKTG 201 with grades of C or higher; Overall GPA of 2.0 or higher; Completion of at least 36 credits prior to enrollment; Obtain Instructor approval of the Internship Learning Agreement.*

**CARDIOVASCULAR**

**CVAS 235 - Introduction to Vascular Sonography 3:3:0**

Provides the student with anatomy and pathophysiology of the venous, arterial and abdominal-visceral vascular systems. This course emphasizes normal structures, disease states, mechanisms of diseases, signs and symptoms, and risk factors commonly encountered in vascular disease states in the cardiovascular patient. Physical assessment and common clinical findings encountered during the evaluation of the cardiovascular patient with known vascular disease is also presented. *Signature of the Cardiovascular Technology Program Director is required.*

**CVAS 236 - Concepts in Vascular Ultrasound 3:3:0**

Introduces the student to the arterial, venous, and abdominal-visceral vascular system testing methods. Intra-cranial and extra-cranial arterial, upper and lower extremity arterial and venous, and abdominal-visceral vascular arterial and venous testing methods are discussed including direct and indirect

testing methods. Interpretation of all clinical findings associated with vascular disease states are presented. *Signature of the Cardiovascular Technology Program Director is required.*

**CVAS 237 - Vascular Hemodynamics and Doppler Physics 4:3:3**

Enables the student to discover the Doppler principles of flow hemodynamics as they relate to the arterial and venous vascular systems. Through laboratory experience, this course covers units of measure, pressure and flow resistance, arterial and venous hemodynamics and direct and indirect methods used to assess vascular disease states. Ultrasound quality assurance and safety is also discussed. These principles are then applied to vascular imaging techniques in the laboratory. A course fee is required. *Signature of the Cardiovascular Technology Program Director is required.*

**CVAS 238 - Vascular Specialty Procedures 2:2:0**

Introduces the student to imaging procedures employed in the correlation and treatment of vascular abnormalities. This course discusses vascular angiography and interventions, pre-operative and intra-operative procedures, Computed Tomography Angiography (CTA), Computed Tomography Venography (CTV), Magnetic Resonance Angiography (MRA), Magnetic Resonance Venography (MRV), nuclear medicine - Ventilation Perfusion scans, laboratory testing, and treatment options. *Signature of the Cardiovascular Technology Program Director is required.*

**CVT 100 - Foundations of Cardiovascular Medicine 3:3:0**

Provides students with a foundational knowledge that covers all aspects of patient care in cardiovascular medicine. In addition, this course addresses current trends within the healthcare profession. *Prerequisite: ENGL 003, 007, or 057 with a grade of C or higher. (FYS)*

**CVT 101 - Introduction to Cardiovascular Technology 3:3:0**

Provides instruction in cardiac anatomy and physiology, electrophysiology, basic Electrocardiogram (ECG) interpretation, and arrhythmia recognition. This course also discusses 12 Lead ECG interpretation specifically related to acute coronary syndrome. *Enrollment is restricted to the students in the Cardiovascular Technology AS programs. Prerequisite: BIOL 111 or 121 and MATH 022 or 020 with a grade of C or higher. Co-requisite: CVT 102. Pre/Co-requisite: CVT 100 with a grade of C or higher. This course must be completed within three years, or less, before a student may apply to the clinical component of the Cardiovascular Technology programs. Students who have completed this course more than three years ago must see the Program Director.*

**CVT 102 - Cardiovascular Technology Laboratory 1:0:3**  
Provides students with a foundation to basic non-invasive cardiovascular procedures. This course allows the students the opportunity to practice and demonstrate skills involving 12 Lead ECG, Holter monitoring, patient assessment, exercise stress testing, and vital signs. In addition, standard cardiovascular laboratory procedures are discussed. A course fee is required. *Enrollment is restricted to students in the Cardiovascular Technology AS programs. Prerequisite: BIOL 111 or 121, CVT 100, & MATH 022 or 020 with grades of C or higher. Co-requisite: CVT 100 and 101 with grades of C or higher.*

**CVT 103 - Cardiovascular Technology Clinical Experience 2:0:8**  
Introduces students to the Non-Invasive Cardiology Department within a hospital or cardiology outpatient office. Students gain hands-on experience with health care topics previously discussed in CVT 101 and 102. This clinical rotation requires students to complete a total of 120-hours and the student must attend a minimum of two days per week at an approved clinical site that is assigned by the director of clinical education. Students are expected to integrate all the information learned in the classroom and laboratory experiences obtained during the previous semester into clinical practice. This clinical rotation focuses on electrocardiograms (ECGs), Exercise Stress Testing, and Holter Monitoring. Throughout the clinical rotation, emphasis is placed on developing the student's interpersonal skills with patients and staff. Students receive a partial clinical manual for which they are expected to complete in addition to one case study, and a research paper. A course fee is required. *Prerequisite: CVT 101 and 102 with grades of C or higher.*

**CVT 200 - Cardiac Pathophysiology 4:4:0**  
Introduces students to the cardiovascular system and provides them an overview of various cardiac diseases. This course enables the student to understand the field of cardiology by covering basic pathophysiologic concepts that include patient signs and symptoms, physical examination results, and related diagnostic tests. In addition, this course presents a correlation between cardiac diseases and other general patient illnesses; diagnostic procedures to assess the status of cardiac disease that focus on signs, symptoms, disease processes; and diagnostic and therapeutic treatment options. In addition, students are prepared to communicate effectively with members of the health care team utilizing appropriate medical terminology and cardiology medical terminology. *Enrollment is restricted to students in the Cardiovascular Technology AS programs. Prerequisite: CVT 101, 102, 103; and BIOL 122 with grades of C or higher.*

**CVT 210 - Introduction to Invasive Cardiovascular Technology 3:3:0**  
Introduces students to Invasive Cardiovascular Technology. This course specifically discusses includes indications and contraindications for cardiac catheterization, left and right heart procedures, arterial and venous access, coronary angiography, application of pathophysiology, and procedural care. *Enrollment is restricted to students in the Cardiovascular Invasive Technology AS program. Prerequisite: CVT 200 with a grade of C or higher. Co-requisite: CVT 211 and 212.*

**CVT 211 - Radiation Safety and Invasive Instrumentation 2:2:0**  
Presents radiation safety principles, catheterization equipment, and instrumentation. This course reviews and demonstrates current technologies employed in the cardiac catheterization area. *Enrollment is restricted to students in the Cardiovascular Invasive Technology AS program. Prerequisite: CVT 200 with a grade of C or higher. Co-requisite: CVT 210 and 212.*

**CVT 212 - Invasive Hemodynamic Assessment 3:3:0**  
Encompasses invasive hemodynamic assessment of the cardiovascular patient. This course discusses the various procedures performed in the cardiac catheterization lab and demonstrates normal and abnormal hemodynamic pressures, calculations, and assessment of valve disease. *Enrollment is restricted to students in the Cardiovascular Invasive Technology AS program. Prerequisite: CVT 200 with a grade of C or higher. Co-requisite: CVT 210, 211, and 213.*

**CVT 213 - Invasive Instrumentation Laboratory 2:1:3**  
Enables students to receive hands-on experience with the Mentice Vist Simulator, a mannequin, and other equipment used in the cardiac catheterization laboratory. Students are expected to complete a left and right heart catheterization without assistance and to develop skills with a variety of instruments. A course fee is required. *Enrollment is restricted to students in the Cardiovascular Invasive Technology AS program. Prerequisite: CVT 210 and 211 with a grade of C or higher. Co-requisite: CVT 212.*

**CVT 214 - Interventional Cardiac Practices 4:4:0**  
Discusses and reviews the current trends and research practices in Interventional Cardiology, Electrophysiology, and Peripheral Vascular Procedures. *Enrollment is restricted to students in the Cardiovascular Invasive Technology AS program. Prerequisite: CVT 213 with a C or higher. Co-requisite: CVT 215 and 216.*

**CVT 215 - Invasive Cardiovascular Clinical I 4:0:24**

Introduces students to the Cardiac Catheterization laboratory and the health care environment. This course is the first clinical rotation of the program and requires students to complete a total of 360-hours, or three eight-hour days per week, during a semester at an approved clinical site that is assigned by the director of clinical education. Students are expected to integrate all the information learned in classroom and laboratory experiences, obtained during the previous semester, into clinical practice. This clinical rotation focuses on diagnostic procedures in the cardiac catheterization laboratory. Throughout the clinical rotation, emphasis is placed on developing the student's interpersonal skills with patients and staff. Finally, students are expected to submit daily journals and log all the appropriate clinical data and documentation of procedures is performed. A case presentation is also required. A course fee is required.

*Enrollment is restricted to students in the Invasive Cardiovascular Technology AS program. Prerequisite: CVT 213 with a grade of C or higher. Co-requisite: CVT 214 and CVT 216.*

**CVT 216 - Congenital Heart Disease 1:1:0**

Provides students with an overview of congenital heart disease in both pediatric and adult populations. The course includes a review of embryology, acyanotic and cyanotic defects, and corrective interventional and surgical procedures.

*Enrollment is restricted to students in the Cardiovascular Invasive Technology AS program. Prerequisite: CVT 213 with a C or higher. Co-requisite: CVT 214 and 215.*

**CVT 217 - Invasive Cardiovascular Clinical II 5:0:32**

Continues the skills covered in CVT 215 to ensure that the student has gained a high level of competency with diagnostic procedures. This clinical rotation focuses on gaining hands-on experience and knowledge with interventional procedures. This course is the final clinical rotation of the program and requires students to complete a total of 480 hours, or four eight-hour days per week, during a semester at an approved clinical site that is assigned by the director of clinical education. Students are to submit daily journals and log all the appropriate clinical data and documentation of procedures performed. A course fee is required. *Enrollment is restricted to students in the Invasive Cardiovascular Technology AS program. Prerequisite: CVT 214, 215, and 216 with grades of C or higher.*

**CVT 218 - Cardiovascular Pharmacology 2:2:0**

Provides an overview of pharmacology with specific focus given to the pharmacology used in the cardiac catheterization laboratory. *Prerequisite: BIOL 122 with a grade of C or higher.*

**CVT 219 - Introduction to Ultrasound Imaging Systems 1:0:3**

Introduces the Cardiac Sonography student to a variety of ultrasound imaging systems. This emphasizes image optimization, storage and manipulation of data, programmatic reporting, and proper body mechanics of imaging. The imaging parameters covered include ultrasound principles of frequency, harmonics, dynamic range/compression, frame rate, focal zone, overall gain and time gain compensation (TGC). The importance of storing and manipulating data and programmatic reporting is addressed as students acquire diagnostic cardiac images - stored on the ultrasound system for interpretation. Students then create a programmatic report of each study to demonstrate their interpretative skills of the image findings. The use of proper body mechanics to prevent musculoskeletal strain injury (MSI) is also covered. The student is expected to create quality diagnostic images in accordance with the standards established by the American Society of Echocardiography. A course fee is required.

*Enrollment is restricted to students who are enrolled in the Cardiovascular Sonography AS program. Prerequisite: CVT 101, 102, 103, and 200 with a grade of C or higher. Co-requisite: CVT 220, 222, and 223.*

**CVT 220 - Introduction to Cardiac Sonography 3:2:3**

Provides students with a thorough introduction to cardiac anatomy and function of the adult heart. This course gives the student an overview of echocardiographic scanning equipment including transducers, image display, and storage. Concepts of cardiac ultrasound diagnostic, qualitative, and quantitative techniques including 2D, M-Mode, Color Doppler and Doppler Echocardiography are thoroughly covered. In addition, instrument controls including power, gain, compression, and focal zone are covered, as well as the presentation of normal and abnormal cardiac pathologies. The laboratory component provides an introduction to echocardiography examinations including proper techniques, image acquisition and probe manipulation. Students manipulate equipment controls to optimize image quality and acquire diagnostic images. They also utilize digital technology while performing standard 2D and M-Mode examinations. Students must perform a complete 2D and M-Mode echocardiogram with limited Doppler according to established lab standards. Finally, ethics, professionalism, current job descriptions for the cardiac sonographer, and the code of ethics are presented. A course fee is required.

*Enrollment is restricted to students who are enrolled in the Cardiovascular Sonography AS program. Prerequisite: CVT 101, 102, 103, 200 with a grade of C or better. Co-requisite: CVT 223.*

**CVT 221 - Cardiac Pathophysiology and Echocardiography Concepts I 4:4:0**

Introduces students to the cardiovascular system and provides them with an overview of various cardiac diseases. This course enables students to understand the field of cardiology by covering basic pathophysiologic concepts that include patient signs and symptoms, physical examination results, and related diagnostic tests. In addition, this course presents a correlation between cardiac diseases and other general patient illnesses; diagnostic procedures to assess the status of cardiac disease that focus on signs, symptoms, disease processes; and diagnostic and therapeutic treatment options. Students are prepared to communicate effectively with members of the health care team utilizing appropriate medical terminology and cardiology medical terminology. In addition, students develop the knowledge to evaluate each pathology comprehensively, that is aided by current recommendations regarding appropriate assessment of each pathology in accordance with the standards established by the American Society of Echocardiography (ASE). *Enrollment is restricted to students in the Cardiovascular Sonography AS program. Prerequisite: BIOL 122, CVT 101, 102, & 103 with grades of C or higher. Co-requisite: CVT 222.*

**CVT 222 - Cardiac Sonography Physics and Instrumentation 3:2:3**

Introduces students to the basic principles of Doppler physics including the Doppler Effect, Doppler equations, and related diagnostic tests. This course provides an overview of continuous and pulsed wave Doppler including aliasing, Nyquist limit, velocity calculations, and angle correction techniques. Color flow Doppler and tissue imaging, and Power Doppler concepts are also covered. In addition, Cardiac Hemodynamics is presented including the relationship to cardiac anatomy, physiology, and cardiovascular function parameters, as well as quantitative evaluation methods used to evaluate cardiac pathologies. *Enrollment is restricted to students who are enrolled in the Cardiovascular Sonography AS Program. Prerequisite: MATH 103 with a minimum grade of C, Co-requisite: CVT 220 and 223.*

**CVT 223 - Cardiac Pathophysiology and Echocardiography Concepts II 4:4:0**

Continues the topics covered in CVT 221 as it provides the student with a thorough discussion of cardiac pathophysiologic concepts and cardiac pathologies commonly encountered in the cardiovascular patient. This course emphasizes the student's comprehension of the underlying cardiovascular disease process and then applies that knowledge to the practice of cardiac sonography. The student develops the knowledge to evaluate each pathology comprehensively that is aided by current recommendations

regarding appropriate assessment of each pathology in accordance with the standards established by the American Society of Echocardiography (ASE). *Enrollment is restricted to students in the Cardiovascular Sonography AS program. Prerequisite: CVT 221 with a grade of C or higher. Co-requisite: CVT 219 and 220.*

**CVT 224 - Cardiac Sonography Clinical I 4:0:24**

Introduces students to the cardiac sonography laboratory and the health care environment. This course is the first clinical rotation of the program and requires students to complete a total of 360 hours, or three eight-hour days per week during a semester at an approved clinical site that is assigned by the director of clinical education. Students are expected to perform the following clinical skills: prepare patients for the cardiac ultrasound examination; enter patient data and perform normal and abnormal studies under the direct supervision of the clinical instructor; perform echocardiographic measurements (2D, M-Mode and Doppler), as well as calculate all related hemodynamic data; compose technical impressions on all studies performed utilizing the appropriate programmatic reporting system and software; and independently perform studies with limited supervision, once the clinical instructor and director of clinical education has agreed that the student is competent to handle this level of responsibility. Throughout the clinical rotation, emphasis is placed on developing the student's interpersonal skills with patients and staff. Finally, students are expected to submit daily journals and case study journals that log all the appropriate clinical data and documentation of studies performed. A course fee is required. *Enrollment is restricted to students in the Cardiovascular Sonography AS program. Prerequisite: CVT 219, 220, 222, and 223 with grades of C or higher. Co-requisite: CVT 226.*

**CVT 226 - Cardiac Hemodynamics 1:0:3**

Presents extensive cardiac hemodynamics for all valvular disease states including the relationship to cardiac anatomy, physiology, and cardiovascular function parameters. Quantitative evaluation methods utilized in the adult cardiac sonography laboratory in order to evaluate all cardiac pathologies are first presented and then performed by the student. The laboratory component is designed to teach scanning techniques necessary to quantitate cardiac hemodynamic abnormalities in the clinical setting. Emphasis is placed on master performance of basic and advanced Doppler techniques and valvular pathologies. The student is expected to perform each measurement during weekly laboratory assignments throughout the semester. A course fee is required. *Enrollment is restricted to students in the Cardiovascular Sonography AS program. Prerequisite: CVT 219, 220, and 223 with grades of C or higher. Co-requisite: CVT 224.*

**CVT 228 - Cardiac Sonography Clinical II 5:0:32**

Continues the skills covered in CVT 224 to ensure that the student has gained high level of competency with both normal and abnormal cardiovascular echocardiographic findings. This course is the final clinical rotation of the program and requires students to complete a total of 480 hours, or four eight-hour days, per week during a semester at an approved clinical site that is assigned by the director of clinical education. The student is expected to independently complete normal and abnormal echocardiograms utilizing the technical expertise gained during CVT 224. In addition, the student is expected to perform the following: echocardiographic measurements (2D, M-Mode and Doppler); calculate all related hemodynamic data; and compose technical impressions on all studies performed utilizing programmatic reporting system and software. Finally, the student presents echocardiographic images to the clinical instructor and supervising physician for critique and interpretation. Students are to submit daily journals and case study journals that log all the appropriate clinical data and documentation of studies performed. A course fee is required. *Enrollment is restricted to students in the Cardiovascular Sonography AS program. Prerequisite: CVT 224 and 226 with a grade of C or higher; Co-requisite: CVT 230.*

**CVT 230 - Introduction to Pediatric Echo 2:2:0**

Provides an introduction to the normal anatomy and physiology of the fetal and pediatric heart. This course presents various conditions of the fetal and postnatal heart for which examination and discussion can occur. These conditions are: Cardiac Embryology (including a comparison between fetal and postnatal circulation), Congenital (present at birth) vs. Acquired (developing sometime during childhood), and Obstructive, Acyanotic, and Cyanotic heart defects. In addition, genetic abnormalities associated common cardiac syndromes are also presented. Students view cardiac images of these conditions in order to determine the possible diagnosis of the patient. Participation in laboratory scanning is incorporated into the course to give students the opportunity to learn echocardiographic views included in all pediatric echocardiographic imaging protocols. *Enrollment is restricted to students in the Cardiovascular Sonography AS program. Prerequisite: CVT 224 and 226 with a grade of C or higher. Co-requisite: CVT 228.*

**CVT 231 - Concepts in Adult Congenital Heart Disease 4:4:0**

Provides the student with a thorough discussion of adult congenital heart defects and cardiac pathologies commonly encountered in the cardiovascular patient with known congenital heart disease. The course emphasizes the student's comprehension of adult congenital defects and then allows them to apply their knowledge in evaluating each pathology

comprehensively during an echocardiographic examination. Each examination is reviewed by a cardiologist to ensure that the appropriate assessment of each pathology is in accordance with the standards established by the American Society of Echocardiography (ASE). *Signature of the Cardiovascular Technology Program Director is required. Prerequisite: CVT 228 and 230 with grades of C or higher.*

**CVT 232 - Congenital Heart Disease: Clinical Experience 4:0:24**

Continues the skills covered in CVT 228 to ensure the student has gained a high level of competency with both normal and abnormal cardiovascular echocardiographic findings. This course is an additional clinical rotation of the adult cardiac sonography program, which enables the student to complete 360-hours in an adult congenital or pediatric echocardiographic laboratory. The student is expected to independently complete echocardiograms under the direct supervision of the clinical instructor in patients with congenital heart defects. A course fee is required. *Signature of the Cardiovascular Technology Program Director is required. Prerequisite: CVT 228 and 230 with grades of C or higher. Co-requisite: CVT 231.*

**CVT 233 - Pediatric Hemodynamic Assessment 4:3:1**

Provides the student with an in-depth review of congenital abnormalities encountered in the pediatric patient. The course covers normal and abnormal physiology of the fetal and pediatric heart, cardiac embryology and development, congenital pathologies, and acquired pathologies, as well as cardiac hemodynamics and calculations encountered in the evaluation of pediatric congenital heart defects. A course fee is required. *Signature of the Cardiovascular Technology Program Director is required.*

**CVT 234 - Pediatric Surgical and Specialty Procedures 2:2:0**

Provides an introduction to pediatric surgery, palliative surgical procedures, and corrective surgical procedures commonly encountered in the pediatric patient. The course also covers common specialty procedures performed on the pediatric patient including Pericardiocentesis, cardiac catheterization, device occlusion procedures, transesophageal echocardiography, balloon atrial septostomy, saline contrast, exercise and pharmacologic stress testing, and special considerations for the sedated pediatric patient. *Signature of the Cardiovascular Technology Program Director is required. Co-requisite: CVT 233.*

## **CARPENTRY**

### **CARP 110 - Carpentry Fundamentals 3:2:3**

Introduces students to core skills needed for the carpentry trade including safety, mathematics, and hand and power tools. This hands-on course stresses proficiency with the handling of building materials and tools. A course fee is required.

### **CARP 115 - Woodworking 3:2:3**

Introduces students to specialized machine applications, as well as print reading, field measuring, machine set-up and maintenance, installation, and the selection and application of hardware and adhesives. This course allows students to complete projects in cabinetry and architectural woodwork. A course fee is required. *Prerequisite: CARP 110 with a grade of C or higher.*

### **CARP 130 - Floor, Wall, and Roof Framing 3:2:3**

Covers framing methods for roofs and walls, ceiling and floor systems. This course addresses the placement and installation of windows, doors, and stairs. A course fee is required. *Prerequisite: CARP 110 with a grade of C or higher.*

### **CARP 150 - Interior Finishing I 3:2:3**

Introduces students to interior finishing techniques in a residential or light commercial facility. This course affords students with the opportunity to develop skills in the application of drywall and paneling, interior doors, and interior trim. A course fee is required. *Prerequisite: CARP 110 with a grade of C or higher.*

## **CHEMISTRY**

### **CHEM 100 - Principles of Chemistry 3:3:2**

Is intended for students who desire an introduction to chemistry, or who are required to take a course that updates their knowledge of chemistry. This course stresses the fundamentals of atomic and molecular structure, bonding, solutions, acids and bases, chemical nomenclature, and stoichiometry. A course fee is required. *Prerequisite: MATH 033, 044, & 055 (or MATH 051); ENGL 003, 007, or 057 with grades of C or higher when identified by the College Placement & Testing Program. (SCI/LAB)*

### **CHEM 101 - General Inorganic Chemistry I 4:3:3**

Emphasizes the principles and theories of chemistry. This course addresses atomic theory and structure, bonding, periodicity, oxidation/reduction, stoichiometry, molecular geometry, gas laws, and solutions. The laboratory work reinforces both the theoretical understanding and the quantitative nature of matter. A course fee is required. *Prerequisite: MATH 103 with a grade of C or higher. Along*

*with eligibility for enrollment into ENGL 101 and either completion of CHEM 100 with a grade of C or higher or completion of an academic high school chemistry course, or completion of the Toledo Placement Exam with a score of 26 or higher. (SCI/LAB)*

### **CHEM 102 - General Inorganic Chemistry II and Qualitative Analysis 4:3:3**

A continuation of CHEM 101. Concepts covered include gaseous equilibria, acid-base theories, equilibria in aqueous solutions, complex ion equilibria, solubility product equilibria, electrochemistry, thermodynamics, rates of reaction, and coordination compounds. The laboratory work emphasizes kinetics, equilibria and qualitative analysis. A course fee is required. *Prerequisite: CHEM 101 with a grade of C or higher. (SCI/LAB)*

### **CHEM 113 - Chemistry for the Nonscientist 3:3:1**

Introduces students to basic principles of the molecular world as they seek possible solutions to the societal issues in a macroscopic world. This course focuses on a more conceptual understanding of chemistry rather than upon computational skills. Topics that are included are: chemistry in the home, agricultural chemistry, nuclear chemistry, principles of energy, chemistry and personal health, and the chemistry of the Earth's atmosphere and water. The laboratory work demonstrates chemical principles and applications. This course is for non-science majors and is not intended for students in an Allied Health or science curriculum. A course fee is required. (SCI/LAB)

### **CHEM 203 - Organic Chemistry I 4:3:4**

Introduces the chemistry of carbon-containing compounds. Emphasis is on bonding, structure, stereochemistry, reaction mechanisms, and related thermodynamic considerations. Methods of preparation and purification of compounds, as well as synthesis techniques, are covered. A course fee is required. *Prerequisite: CHEM 102 with a grade with a C or higher. (SCI/LAB)*

### **CHEM 204 - Organic Chemistry II 4:3:4**

Continues the topics covered in CHEM 203. This course discusses the properties and reactions of functional groups spectroscopy, and multistep synthesis are emphasized. Laboratory exercises includes an introduction to the chemical literature, spectroscopy, organic qualitative analysis, and synthesis. A course fee is required. *Prerequisite: CHEM 203 with a grade of C or higher.*

### **CHEM 205 - Survey of Organic Chemistry 4:3:3.5**

Provides a survey of organic chemistry. This course is specifically designed for students that only need one semester of organic chemistry. The topics covered emphasize bonding,

structure, stereochemistry, reaction mechanisms, thermodynamics, reactions of functional groups, spectroscopy, and multistep synthesis. The laboratory portion includes purification of organic compounds, spectroscopy, qualitative analysis, and synthesis. *Prerequisite: CHEM 102 with a grade of C or higher.*

## **CHINESE**

### **CHIN 101 - Elementary Chinese I 4:4:0**

Covers the fundamentals of Chinese grammar including written characters, drill in structure and pronunciation, developing vocabulary, and cultural aspects. Aural-oral and reading skills are also introduced. *Prerequisite: Eligibility for enrollment into ENGL 101. (H&A)*

### **CHIN 102 - Elementary Chinese II 4:4:0**

Continues training in elementary Mandarin Chinese. This course aims to further develop fundamental language skills including speaking, listening, reading, and writing. Extended vocabulary and grammar are introduced and taught in a communicative context. To reinforce learning, students are able to engage in a wide variety of activities such as role-playing, task-centered group work, and timely homework submissions. Various aspects of the Chinese culture and daily life topics are also covered. *Prerequisite: CHIN 101 with a grade of C or higher or equivalent.*

## **CIVIL TECHNOLOGY**

### **CVTE 102 - Introduction to Highway, Drainage and E&S Design 3:2:3.5**

Covers the civil engineering calculations and graphics introduced in CVTE 110 in greater detail. This course emphasizes the need for performing computations and understanding the computed results before drafting occurs. These computations include cross and longitudinal slopes, roadway stations, interior angles of property lines, and quantities according to PennDOT specifications. Developing cross sections, profiles and drainage areas are also included. All assignments originate exclusively from projects within the industry. A course fee is required. *Co-requisite: CVTE 105 and 110.*

### **CVTE 103 - Surveying I 3:1.5:4**

An introduction to land surveying methods and field procedures. The course focuses on the operation and care of surveying instruments, the collection of field data, and the preparation of base plans. Surveying types studied include topographic, construction, boundary surveys, control traverses and benchmark level loops. A course fee is required. *Co-requisite: MATH 161 or higher.*

### **CVTE 105 - Numerical Methods in Civil Engineering 3:2:3.5**

Prepares students to take Civil Technology Degree classes. This course studies numerical and graphical methods with strong emphasis on applications in the following areas: highway design, drainage design, site design, E&S design, surveying I, surveying II, and the capstone project. A course fee is required. *Co-requisite: MATH 161; or permission of the Department Chair.*

### **CVTE 110 - Civil Engineering Graphics 2:1:4**

An integration of hand and computer drafting. Students study the basics of civil engineering drafting on the board, followed by the AutoCAD application. The topics covered include civil engineering scale, basic geometric shapes, measuring angles, definition of slope, introduction of a plan view and cross section. The AutoCAD part of the class focuses on basic commands, scales, line types, colors, layers, dimensioning, placing text, and the file management. A course fee is required.

### **CVTE 111 - Topographic Site Mapping 2:0.5:4.5**

Focuses on drawing topographic site plans; interpreting engineer's site studies and sketch designs; and recognizing general design principles through the use of AutoCAD for residential and commercial land development projects. This course covers drawing details that include parking, roads, contours, drainage, utilities, and cut and fill quantity calculations. Highway occupancy permit plans are also discussed. A course fee is required. *Prerequisite: CVTE 110. Co-requisite: CVTE 102, and 132.*

### **CVTE 112 - Topographic Highway Mapping 2:0.5:4.5**

Covers the use of MicroStation for highway development projects. This course addresses construction of topographic mapping, highway plan, study of site, sketch designs, and design principles. Drawings focus on all aspects of the site plan including contours, drainage, utilities, symbology, plans, profiles, cut and fill quantity calculations, and highway occupancy permit plans. The PennDOT Design Manual is a basic reference. A course fee is required. *Co-requisite: CAD 115 and CVTE 102; or permission of the Department Chair.*

### **CVTE 120 - Codes, Laws, Acts, and Regulations 1:1:0**

An overview of the codes, laws, acts, and regulations used most often in the civil engineering, surveying and environmental fields, and architecture. The course introduces references and resources used in these fields. The course also provides students with the basic terminology, and introduces the administrative part of the permitting process and overview of design requirements.

**CVTE 132 - Civil 3D Computer-Aided-Design 1:0.5:1.5**  
Introduces students to computer-aided design using Civil 3D. This course focuses on the basic usage of the software including opening new drawings, saving, editing, layers, drawing objects, text, dimensioning, and plotting commands. In addition, this course also addresses external references, geographic coordinates, surfaces, sections, and profiles. A course fee is required. *Prerequisites: CAD 130 with a grade of C or higher; or permission of the Department Chair.*

**CVTE 203 - Surveying II 3:1.5:4**  
An introduction to the legal aspects and methods of land surveying. The course focuses on basic procedures for performing boundary-type surveys. From courthouse record research and field data collection to computation and problem solving for deeds, this course explores the fundamentals necessary for any boundary survey project. A course fee is required. *Prerequisite: CVTE 103.*

**CVTE 205 - Highway Design 3:2:3.5**  
Emphasizes highway and roadway planning and design according to the state standards. The course covers principles of highway design which include computing horizontal and vertical alignments. Explanation of basic terms such as tangents, curves and superelevation (S/E) transitions are discussed. Students work with plan views, cross-sections and profiles. Quantity computation and cost estimates, writing specifications, the basics of railroad design and highway rehabilitation projects are also covered. Additional topics include meeting American Association of State, Highway, and Transportation Officers (AASHTO) and PennDOT requirements. A course fee is required. *Prerequisite: CVTE 102 and 105.*

**CVTE 207 - Drainage 3:2:3.5**  
Emphasizes hydraulics and hydrology as applied to storm sewer design. This course covers design storm determination and drainage area delineation, Rational Formula and Manning's Formula, pipe design and pipe alternates, computation of actual depths and velocities in pipes, setting inverts for sewer main line and laterals, inlets, capacities, bypasses, and outfall protection. The student is introduced to the PennDOT Design Manual 2, Chapter 10 Drainage, the Department of Environmental Protection (DEP) Agency Manual, PennDOT Roadway Construction (RC) Standards, and the PennDOT Publication 408 section that relates to roadway/highway drainage design. A course fee is required. *Prerequisite: CVTE 102 and 105.*

**CVTE 208 - Strength of Materials 3:3:0**  
Emphasis on axial stress and strain, shear, riveted and welded connections, torsion, beam stresses and deflections, columns, resilience and toughness of materials, yield, combined stress,

shear and moment diagrams. The computer is used in solving problems. *Prerequisite: GTEC 201 with a grade of C or higher.*

**CVTE 209 - Selected Topics in Site Design 3:2:3.5**  
Emphasizes the basics of site development design using software applications. Students are introduced to municipal zoning ordinances and all other design criteria set by municipalities. In addition, this course also covers Property Line, Right-of-Way and easements, storm and sanitary sewer, culvert and storm water management design, the Storm Water Management (SWM) Act, Highway Occupancy Permit (HOP), and parking lot design. A course fee is required. *Prerequisite: CVTE 102 and 105.*

**CVTE 211 - Erosion and Sedimentation Control & Permits 3:2:3.5**  
Emphasizes the preparation of the erosion and sedimentation (E & S) control plan. Students are taught the definition of basic E & S controls as defined in the Department of Environmental Protection Agency's (DEP) Erosion and Sediment Pollution Control Program Manual. This course covers contours, slopes and level surfaces, grading the site, and sediment cleaning facilities, top-of-cut ditches, toe-of-slope ditches, and roadway swales. Students perform lining design and peak flow computations for temporary and permanent conditions, using the Rational Formula, as well as write construction sequencing staging notes for the project. This course also introduces students to common permits such as the National Pollutant Discharge Elimination System (NPDES), Chapter 105, Joint Permit Application (JPA), and Permit 404. A course fee is required. *Prerequisite: CVTE 102 and 105.*

**CVTE 213 - Capstone Project 3:2:3.5**  
Provides students with the opportunity to work on an assigned civil engineering or environmental project. This project encompasses the preparation of the plan view, profile, typical section, cross slope, longitudinal slopes, details, actual cross section, storm sewer design, grading, and erosion and sediment control design, or any other supporting plan documentation. The complete set of plans must also adhere to the requirements established by the various regulatory agencies and the client. Students are required to prepare a complete package for presentation at the college's annual Student Symposium. This presentation is to include complete documentation of the project development, such as computations, graphs, charts, reference books, and narratives. Students have the freedom to construct a physical model to scale of their projects for public viewing. A course fee is required. *Prerequisite: CVTE 205 and 207. Co-requisite: CVTE 209 and 211.*

## **COMMUNICATIONS**

### **COMM 101 - Effective Speaking 3:3:0**

Introduces the fundamentals of oral communication with emphasis on helping the student increase competence as a communicator in public speaking contexts. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses as required by the College Testing and Placement Program.*

### **COMM 101H - Honors Effective Speaking 3:3:0**

Introduces the fundamentals of oral communication with emphasis on helping the student increase competence as a communicator in public speaking contexts. Using a seminar or discussion-based approach, this course encourages independent, creative and critical inquiry and prepares students for the practical application of information by emphasizing effective research strategies and technologies congruent with the field of study. *Prerequisite: Completion of all developmental reading and writing courses required, as a result of the College Testing and Placement Program.*

### **COMM 110 - Introduction to Communication 3:3:0**

Introduces the fundamental questions, methods, history, and theories that define the communication discipline and professions in public relations, integrated (mass) media, and speech communication. This course addresses human communication related to organizations, public relations, journalism, and the role of the communicator, the audience, the medium, context, and the message. Students are given the opportunity to investigate career opportunities in communications, create an electronic portfolio, and learn to make informed decisions about their career options. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program. (FYS)*

### **COMM 120 - Mass Media and Society 3:3:0**

Studies the structure and functions of the mass media in the United States. This course discusses the organization, role, content, and effects that various mass media outlets - newspapers, magazines, television, radio, books, the Internet, and films - have upon society, people, government, and institutions. It also provides both a historical and present-day overview of the interactions between mass media and society with particular focus on the social influences (e.g., economics, politics, technology, law, and culture) that can shape media messages. Discussions pertaining to the social, cultural and technological forces impacting media today are also conducted. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program. (S&BS)*

### **COMM 171 - Workshop in News Writing & Reporting 1:1:0**

Provides first-hand experience in the demands of a journalism or broadcasting career. Students select a specific area of mass communication - advertising or journalism, including writing for media in print, video, or the Internet - to explore. The workshop experience involves the student's participation as a staff member on the College's student newspaper, web page, or video podcasts for one semester. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.*

### **COMM 172 - Workshop in News Writing and Reporting 1:1:0**

Continues to provide students with first-hand experience in the demands of a journalism or broadcasting career. Students select a specific area of mass communication - advertising or journalism, including writing for media in print, video, or the Internet - to explore. The workshop experience involves the student's participation as a staff member on the College's student newspaper, web page, or video podcasts for one semester. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.*

### **COMM 201 - Communication Theory 3:3:0**

Introduces students to communication as an academic discipline. This course explores how meaning is created and shared in multiple contexts, such as intrapersonal, interpersonal, small group, organizational, public, mass mediated, and intercultural. In addition, students learn and evaluate the fundamental theories that are covered from each context and conduct research in the field. *Prerequisite: ENGL 101 with a grade of C or higher. It is recommended that students complete COMM 110 prior to enrolling into COMM 201.*

### **COMM 202 - Organizational Communication 3:3:0**

Examines the major organizational communication theories and processes that form the study and practice of communication in organizations. This course investigates the basic theories, concepts, and issues that are relevant to the field of organizational communication. Class discussions focus on organizational challenges including the most common organizational variables, such as conflict, power, leadership styles, roles, relationships, organizational change, team building, emotions, and technology. *Prerequisite: ENGL 101 with a grade of C or higher.*

### **COMM 203 - Interpersonal Communication 3:3:0**

Studies formal and informal communication between individuals with emphasis on developing effective

communication skills in interpersonal contexts. *Prerequisite: ENGL 101 with a grade of C or higher.*

*required, as a result of the College Testing and Placement program.*

**COMM 211 - Public Relations 3:3:0**  
Covers the theories and foundations of public relations, as well as its function within organizations and society, and its impact on publics. This course examines the issues, concepts, and responsibilities of public relation practitioners working in various professional settings. *Prerequisite: ENGL 101 with a grade of C or higher. It is recommended that students complete COMM 221 prior to enrolling into COMM 211.*

**COMM 251 - Small Group Communication 3:3:0**  
Provides an overview of the communication process involved in small group interactions. This course investigates the theories of leadership, decision-making, and problem solving. This course allows students to develop competencies for future challenges. *Prerequisite: Eligibility for enrollment into ENGL 101.*

**COMM 221 - Media Writing 3:3:0**  
Explores a variety of mass communication mediums that students may encounter in their professional careers. The course content focuses on the preparation and presentation of various mass communication formats and examines Message Construction, Message Framing, and Message Interpretation by (or from) print and electronic media, public relations, and advertising practitioners. Students are to use grammar, spelling, and Associated Press (AP) News Style in their practice of writing public relations news releases, public information announcements, print, television and radio advertisements, as well as news stories and editorials. *Prerequisite: ENGL 101 with a grade of C or higher.*

**COMM 252 - Business and Professional Communication 3:3:0**  
Focuses on the development of oral skills in the business setting. Students study interpersonal relationships in the workplace, basic leadership and team communication, resume writing, interviewing, oral reporting, and the use of electronic media in professional presentations. Emphasis is placed on the development of communication habits that demonstrate professionalism. Students are able to create presentations and documents to supplement their professional portfolio. *Prerequisite: ENGL 101 and COMM 101 with grades of C or higher.*

**COMM 222 - News Writing and Reporting 3:3:0**  
Focuses on the development of basic writing and editing skills for journalists. This course covers such topics as: developing skills for judging news values, following the Inverted Pyramid Style of writing, and using the Associated Press (AP) News Style and copy-editing techniques. Students use news-gathering tools, such as interviewing and covering traditional sources of news - meetings, speeches, and press conferences - as well as apply journalistic forms and tools specifically for print and electronic media. The course also helps students build grammar skills and develop critical analysis of writing through the editing and the meeting of writing deadlines. Finally, students submit their work for publication in the College's student media outlets. *Prerequisite: ENGL 101 with a grade of C or higher.*

**COMM 253 - Intercultural Communication 3:3:0**  
Explores global communication and culture, as well as examines how culture is reflected through languages, behaviors, rituals, and worldviews. This course investigates communication practices and attitudes that enhance communication between members of different cultures and co-cultures. In addition, students are to examine and describe their own cultural heritage and how they may respectfully interact with individuals of another culture. *Prerequisite: ENGL 101 with a grade of C or higher. (S&BS)*

**COMM 241 - Visual Communication 3:2:3**  
Introduces students to a broad base of visual communication, graphic concepts, and tools used to create specific messages for identified audiences. Students are taught the fundamentals of typography, design, layout, visual imagery, and digital media for communication messages. In addition, students are taught design strategies for creating communication messages for intended audiences by utilizing emerging technology. Finally, students are able to create artifacts for their personal electronic portfolio. A course fee is required. *Prerequisite: Completion of all developmental reading and writing courses*

**COMM 253H - Honors Intercultural Communication 3:3:0**  
Explores global communication and culture, as well as examines how culture is reflected through languages, behaviors, rituals, and worldviews. This course investigates communication practices and attitudes that enhance communication between members of different cultures and co-cultures. In addition, students are to examine and describe their own cultural heritage and how they may respectfully interact with individuals of another culture. Using a seminar of discussion-based approach, this course encourages independent, creative and critical inquiry and prepares students for the practical application of information by emphasizing, effective research strategies and technologies congruent with the field of study. *Prerequisite: ENGL 101 with a grade of C or higher. (S&BS)*

**COMM 261 - Public Relations Writing 3:3:0**

Provides an overview of the skills needed for effective public relations (PR) writing. This course teaches students to write informatively and persuasively for diverse audiences using a variety of PR formats. These PR Formats include press releases, Public Service Announcements (PSA's), interviews, Media Alerts, Fact Sheets, features, public presentations, etc. used for a variety of media outlets such as print, broadcast, and the Internet. *Prerequisite: ENGL 101 with a grade of C or higher. It is recommended that students complete COMM 211 prior to enrolling into COMM 261.*

**COMM 271 - Workshop in News Writing & Reporting 1:1:0**

Continues to provide students with first-hand experience in the demands of a journalism or broadcasting career. Students select a specific area of mass communication - advertising or journalism, including writing for media in print, video, or the Internet - to explore. The workshop experience involves the student's participation as a staff member on the College's student newspaper, web page, or video podcasts for one semester. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.*

**COMM 272 - Workshop in News Writing & Reporting 1:1:0**

Continues to provide students with first-hand experience in the demands of a journalism or broadcasting career. Students select a specific area of mass communication - advertising or journalism, including writing for media in print, video, or the Internet - to explore. The workshop experience involves the student's participation as a staff member on the College's student newspaper, web page, or video podcasts for one semester. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.*

**COMM 290 - Communication Capstone 1:1:0**

Provides students with the opportunity to integrate all the knowledge and skills acquired through their studies as communication majors through the final organization of their personal electronic portfolio for review and submission to either a future employer or to a 4-year transfer institution. *Prerequisite: COMM 101, 110, and 120 with a grade of C or higher. Co-requisite: COMM 201. It is recommended that students complete COMM 201 prior to enrolling into COMM 290. Also, students must complete all required COMM courses, specific to their area of concentration, prior to enrolling into COMM 290.*

**COMPUTER-AIDED-DRAFTING****CAD 115 - MicroStation I 1:0.25:2.25**

Introduces computer-aided drafting techniques using the latest release of MicroStation software. This course focuses on the basic terminology required to operate MicroStation including those associated with opening new drawing, saving, editing, setting dimensions, opening levels, and using text and plotting commands. A course fee is required.

**CAD 125 - MicroStation II 1:0.25:2.25**

Provides students with a practical application of MicroStation for technicians. This course focuses on Coordinate Geometry (COGO), using points, working with plan views, cross sections, typical sections, vertical and horizontal alignments and site plans. Dimensioning, stationing, angular measurements, and northing/easting values are also taught. A course fee is required. *Co-requisite: CAD 115.*

**CAD 130 - Civil Engineering Drawing 1:0.25:2.25**

Advancement of AutoCAD techniques for the civil technology student. The topics include: plan views, cross sections, stream and roadway profiles, application of surveyor units, measuring and computing quantities, and preparing tabulations. Plan presentation and basic civil engineering terminology are studied. A course fee is required. *Co-requisite: CVTE 110.*

**CAD 154 - Computer-Aided Drafting & Design 3:2:3**

Studies basic drafting concepts including orthographic projection, sections, and auxiliary views. Students receive and introduction to selected computer-aided drafting and design programs as they create multi-view working drawings and study solids modeling techniques. A course fee is required.

**CAD 156 - AutoCAD for Architecture 3:1:6.25**

Introduces students to architectural drawing, which includes both orthographic and paraline. Students are taught computer-aided drawing skills utilizing the latest version of AutoCAD software. This course covers drawing, editing, and layering commands, as well as dimensional notation and annotation. Also included is an introduction to Building Information Modeling (BIM) and the latest version of Revit. A course fee is required.

**CAD 158 - BIM Using Revit for Architecture & Construction 3:1:6.25**

Introduces Autodesk's Revit for architecture and construction. Students learn how to create a Building Information Model (BIM) of a structure. Three dimensional renderings and animated walk-throughs, along with the use of natural and artificial lighting within a model, provides a relationship to

other architectural concepts. Other specific skills such as Concept Massing, creating partition types, and database importing/exporting to other software programs are covered. With emphasis on the Building Life Cycle, students are also introduced to the role BIMs can play in both architectural practice and in the overall construction process. A course fee is required.

### **CAD 164 - Advanced Computer-Aided- Drafting & Design 2:1:4**

Covers advanced 3-D topics in SolidWorks including sheet metal, cam, and gear design. Students examine applied problems in finite element analysis using simulation software. Applications in fluid flow simulation, motion simulation and solid animation are also discussed. A course fee is required. *Prerequisite: CAD 154 with a grade of C or higher.*

### **CAD 206 - 3D Modeling with AutoCAD Mechanical Desktop 3:2:3**

Three-dimensional drawing and modeling techniques with AutoCAD Mechanical Desktop in AutoCAD's drawing environment. Students use the software to parametrically construct simple to complex models for graphical representation of detailed designs and layouts. A course fee is required. *Prerequisite: CAD 114 and 134.*

## **COMPUTER INFORMATION SECURITY**

### **CISE 200 - Information Security Fundamentals 3:3:1.5**

Provides a basic understanding of industry standards for securing information. This course discusses legal, ethical, and business requirements, as well as an overview of security tools and practices and secure network architecture. A course fee is required. *Prerequisite: ENGL 101, CNT 120, and CIS 222, 264, or 249 with grades of C or higher; or permission of the Instructor.*

### **CISE 210 - Information Security Administration 4:3:1.5**

Encompasses the practical application of operational, administrative, and basic management aspects of information security. Topics include: installation and administration of security hardware and software, expansion planning, equipment inventories, policy adherence, and documentation procedures. A course fee is required. *Prerequisite: CISE 200, CIS 264, and 222 with a grade of C or higher; or permission of the Instructor.*

## **Computer Information Systems**

### **CIS 100 - Computer Fundamentals 3:3:0**

Covers the fundamentals of computer-system operations designed for the student with little or no prior knowledge of,

or experience with computing. Topics covered include the fundamentals of the following: keyboarding, hardware components, keyboard and mouse operations, file and disk management, printing, PC terminology, operating systems, business applications, the Internet, and responsible computing practices.

### **CIS 105 - Introduction to Software for Business 3:3:0**

Provides a fundamental understanding of computers and familiarizes students with the interaction of computer hardware and software. Emphasis is on the application of computers and hands-on use of software applications, including word processing, spreadsheet, file and database management. *Prerequisite: ENGL 057 or a combination of ENGL 003, or 007 and 051 with grades of C or higher or their equivalents.*

### **CIS 105H - Honors Introduction to Software for Business 3:3:0**

Provides a fundamental understanding of computers and familiarizes students with the interaction of computer hardware and software. Emphasis is on the application of computers and hands-on use of software applications, including word processing, spreadsheet, file, and database management. Using electronic communications and collaborative Web 2.0 tools, this course encourages collaborative, creative and critical inquiry and prepares students for the practical application of technology by emphasizing effective research strategies and technologies congruent with the field of study. *Prerequisite: ENGL 057 or a combination of ENGL 003 or 007, and 051 with grades of C or higher.*

### **CIS 108 - Introduction to PowerPoint 1:1:0**

A hands-on, project-oriented course designed to teach the student to produce professional looking presentation materials in the form of overhead transparencies, electronic presentations using a projection device attached to a computer. *Prerequisite: Working knowledge of computer operations.*

### **CIS 109 - Integrating Technology into the K-12 Classroom 3:3:0**

Introduces current or future teachers, administrators, and counselors to the strategies, pedagogies, and tools for integrating technology into the educational environment. The course covers basic computer use, accessing information, using Web 2.0 tools on the World Wide Web, and integrating a current productivity software suite into the education curricula to satisfy National and State Technology Standards. *Prerequisite: Eligibility for enrollment into ENGL 101 or Guest Student.*

**CIS 110 - Introduction to Computer Systems 3:3:0**

Provides a hands-on understanding of the underlying concepts, terminology, and operations of hardware components and software associated with computer information systems in industry and for personal use. The Internet and its component parts are covered through in-class activities and extended class assignments. The course serves as a foundation for further study through topics including systems design, data input/output processing, hardware basics, software integration, and associated technologies. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of all developmental reading and writing courses with a grade of C or higher required as a result of the College Testing and Placement program. Pre or Co-requisite: CIS 105 with a grade of C or higher.*

**CIS 127 - Microsoft Windows Operating Systems 3:3:1.5**

Builds on the fundamentals of Windows (window management, design, and Desktop organization) to introduce students to the underlying features and capabilities of the operating system. This course covers planning and installing Windows; the Registry; managing users and systems resources; monitoring, optimizing, and troubleshooting Windows as well as introductory networking aspects. A course fee is required. *Prerequisite: CIS 105 with a grade of C or higher; or permission of the Instructor.*

**CIS 135 - Intermediate Spreadsheet Applications 3:3:0**

Builds upon the spreadsheet application, concepts, and skills developed in CIS 105. Using a hands-on approach with a widely used industry/business computer spreadsheet, application package, this course focuses on introducing students to the Worksheet, Charts, Functions, Formulas, Tools, and Macro features. *Prerequisite: CIS 105 with a grade of C or higher; or permission of the Instructor.*

**CIS 140 - Intermediate Database Management 3:3:0**

Provides an in-depth study of database management. The course builds on the concepts and skills introduced in CIS 105 that focus on database management development. *Prerequisite: CIS 105 or WEB 143 with a grade of C or higher; or permission of the Instructor.*

**CIS 145 - Using Mobile Technologies 3:3:0**

Examines the emergence of such mobile technologies as Web 2.0, 3.0, and beyond. The mobility and evolving nature of these technologies, as well as their popularity and usefulness, are discussed. Students learn by engaging in hands-on exploration of the devices and mobile applications for integrating these emerging technologies into their everyday life. *Prerequisite: Eligibility for enrollment into COMM 101 and completion of all developmental reading and writing*

*courses required, as a result of the College Testing and Placement program.*

**CIS 207 - Desktop Publishing 3:3:0**

A hands-on introduction to desktop publishing fundamentals. Students produce publication-ready documents combining text, graphics, illustrations, and photographs. In preparing the documents, the student learns to apply design templates, graphic manipulation tools, and advanced layout and printing tools to the task at hand. *Prerequisite: CIS 105 with a grade of C or higher.*

**CIS 222 - Introduction to Windows Servers 3:3:1.5**

Introduces students to local area client/server networking using the current generation of Microsoft Windows Servers. While providing students with the knowledge and skills necessary to install and configure the current Microsoft Windows operating system on stand-alone and client computers that are part of a workgroup or domain, this course also emphasizes the skills and knowledge necessary to install, configure, and administer Active directory. A course fee is required. *Prerequisite: CNT 120 with a grade of C or higher.*

**CIS 223 - Intermediate Windows Servers 3:3:1.5**

Local area client/server networking using the current generation of Microsoft Windows Servers. Provides students with the knowledge and skills necessary to configure and maintain advanced components of the Microsoft Windows 2000 operating system as a domain controller. This course emphasizes the skills and knowledge necessary to administer a domain using Network Services, Active Directory, and Security Services. A course fee is required. *Prerequisite: CIS 222 with a grade of C or higher; higher; or permission of the Instructor.*

**CIS 224 - Introduction to Systems Analysis & Design 4:4:0**

Introduces Systems Analysis and Design, using the Systems Development Life Cycle (SDLC) as an organizing tool, to take the student from Planning and Selection through Implementation and Operation. This course presents current practices, as well as accepted concepts and principles of system development, with an understanding of the processes, techniques, and end products. In addition, this course provides extensive coverage of oral and written communication skills including documentation, project management, and team management. *Prerequisite: CNT 120 with a grade of C or higher; and one of the following with a grade of C or higher: CIS 238, 245; CPS 115, 121, 135, 230; WEB 140, 143, 144, 220, 240, 242, 244, 246.*

**CIS 226 - Novell NetWare Administration 3:3:1.5**  
An introduction to Local Area Network and Wide Area Network administration using Novell NetWare. The course includes network design; features, functions and components of Novell's eDirectory system; installation and file system and the management of users, groups, and login security and trustee assignments. Web Services, Groupwise and OneNet utilities are also covered. A course fee is required.  
*Prerequisite: CIS 115 or CTEC 102 or CNT 120 with a grade of C or higher.*

**CIS 227 - Technical Support 3:3:0**  
Provides skills needed to operate and manage in a technical support environment. The course covers technical support, troubleshooting, escalation channels, communication skills, and developing professional interaction with end users. Also included is an in-depth study of help desk software with an emphasis on call and asset management. *Prerequisite: CNT 120, and CIS 222 or 249 or 264 or 265 with grades of C or higher.*

**CIS 232 - Introduction to COBOL Programming 3:3:0**  
Fundamentals of the COBOL programming language and its applications, including maintenance and interaction with legacy COBOL systems. Course covers Job Control Language (JCL), Customer Information Control System (CICS), DB2, and TSO/ISPF. Students write and maintain programs written in the COBOL language. *Prerequisite: CIS 105 with a grade of C or higher; or permission of the Instructor.*

**CIS 238 - Visual Basic Programming for Business Applications 3:3:0**  
Provides a hands-on approach to the fundamentals of creating Visual Basic programs for supporting business operations. This course is designed to teach the student how to apply programming logic and Visual Basic tools to common business practices, such as data capture and data analysis, using file management techniques and basic data structures including arrays. *Prerequisite: CIS 135, and Web 125 or 143 with grades of C or higher; or permission of the Instructor.*

**CIS 240 - Advanced Database Management 3:3:0**  
Builds on the database management applications, concepts, and skills developed in CIS 140. The course provides an opportunity to develop a database application for business using the programming language provided with the database. In addition, full documentation is developed by the student. *Prerequisite: CIS 140 with a grade of C or higher; or permission of the Instructor.*

**CIS 241 - Database Administration I 3:3:0**  
Introduces students to the core concepts of databases. This course covers choosing database architecture; hands-on exercises installing the database; creating objects such as tables and indices; applying normalization concepts and performing various backup/recovery scenarios; and writing SQL (Structured Query Language) coding for web, mobile, and application development. *Prerequisite: CIS 140 or WEB 143 with a grade of C or higher; or permission of the Instructor.*

**CIS 243 - Database Administration II 3:3:0**  
Builds upon the database administration concepts developed in CIS 241. This course covers Relational Database Management System (RDBMS) features for Oracle. Data manipulation and data conversion, using built-in database functions and advanced query techniques, are reviewed. Security, Storage Management, Back-Up and Recovery, and Recovery Manager (RMAN) are also introduced. Accessing data in a heterogeneous environment, managing database objects using the data dictionary, and evaluating performance are all reviewed. *Prerequisite: CIS 241 with a grade of C or higher; or permission of the Instructor.*

**CIS 245 - Database Programming 3:3:0**  
Covers Structured Query Language (SQL) commands to manage a database. This course allows students to create, store, retrieve, and maintain database objects using Data Definition Language (DDL) and Data Manipulation Language (DML) and establish access and security to database objects using Data Control Language (DCL). In addition, students learn to retrieve data using Joins, Sub-queries, Scalar and Vector statements, and write SQL code to manage distributed data and transactions. *Prerequisite: CIS 140 or WEB 143 with a grade of C or higher; or permission of the Instructor.*

**CIS 247 - Database Backup and Recovery 3:3:0**  
Introduces the critical task of planning and implementing database backup and recovery strategies. This course addresses backup and recovery techniques and examines various backup, failure, restore, and recovery scenarios. Backup methodologies, based on business requirements in a mission critical enterprise, are also addressed. *Prerequisite: CIS 243 with a grade of C or higher; or permission of the Instructor.*

**CIS 249 - Fundamentals of the UNIX Operating System 3:3:0**  
Covers the UNIX operating system and environment as well as similarities with LINUX. Topics include logging onto UNIX, the UNIX file system, basic operating system commands, processing and system resources, login profiles,

and beginning shell scripting. Hands-on experience with the vi editor, the UNIX help system, and other UNIX tools and utilities is also covered. *Prerequisite: CIS 105 with a grade of C or higher; or permission of the Instructor.*

**CIS 253 - Linux Development 3:3:0**

Explores the various development environments, tools, and best practices available with the Linux and Micro-Controller operating system. This course focuses on contemporary languages in the latest distributions available for this operating system. System installation and Object-Oriented Programming, with the latest languages such as CPP, Qt, Python and JAVA Development, may also be covered. *Prerequisite: CIS 249 with a grade of C or higher.*

**CIS 257 - Data Warehousing 3:3:0**

Introduces the fundamental theory of data warehouse development and application. This course addresses development requirements, data warehouse architecture, dimensional model design, and physical database design. Skills to manipulate the data in the warehouse for updating, maintenance, and data extraction are also covered. This course presents applications of business intelligence techniques within the data warehousing framework. *Prerequisite: CIS 140 or 241 with a grade of C or higher; or permission of the Instructor.*

**CIS 258 - Data Mining 3:3:0**

Introduces the concepts and application of data mining to discover useful and "interesting" patterns from large data sets. This course specifically covers computational algorithms to develop patterns and forecasts from databases, data selection, cleaning, coding, statistical and machine learning techniques, and visualization of generated structures. The course uses data mining software and examples to illustrate the process. *Prerequisite: CIS 110 or WEB 143, and CIS 135 with grades of C or higher. Or, permission of the Instructor.*

**CIS 264 - Fundamentals of LINUX Administration 3:3:1.5**

Provides students with the practical skills necessary to use and administer the Linux operating system in the command line (CLI) environment. This course covers the following basic system usage topics: Secure Shell (SSH), basic (CLI) navigation commands, directory and file structures and permissions, the vi editor, file processing, processes, and shell scripting. System Administration topics include Linux installation, filesystems, installing and configuring software, managing services, creating and administering user accounts, system backup and recovery, scheduling tasks, Linux security and networking, and the implementation of common applications such as web servers, Domain Name System (DNS) servers, email servers, and databases. A course fee is

required. *Prerequisite: CNT 120 with a grade of C or higher; or permission of the Instructor.*

**CIS 265 - Fundamentals of UNIX Administration 3:3:0**

Covers the basics of the UNIX/LINUX operating system with an emphasis on system administration and security. Topics include: the installing and configuration of UNIX, logging into UNIX, basic commands, the vi editor, creating and administering user accounts, system backup and recovery, software installation and package management, the graphical user interface, and basic UNIX administration. Other UNIX tools and utilities are also covered. *Prerequisite: CIS 115 or CTEC 102 or CNT 120 with a grade of C or higher.*

**CIS 266 - Support Specialist Capstone 3:3:0**

Prepares students for careers in the computer technology with an emphasis on troubleshooting strategies, industry standards and documentation, ethical decision making, professional development, and portfolio management. Students are required to create a professional development plan (PDP) and complete a capstone project in addition to formalizing a professional portfolio highlighting work completed throughout the Computer Information Systems AAS program. *Prerequisite: CIS 227, ELEC 126, and WEB 102 with grades of C or higher. Co-requisite: CIS 227; or permission of the Instructor.*

**CIS 270 - Computer Practicum 4:1:15**

A minimum of 225-hours of work experience, over at least a 15-week period, in an approved internship applying the knowledge and skills acquired in the Computer Information Systems curriculum. Written documentation of internship activities and other performance-evaluation measurements will be used to determine the grade. The course must be scheduled for the last semester so that the student derives the most benefit from the experience. *(This course is intended for those who are not currently employed in a position requiring extensive use of computers. It is an alternative to CIS 275; credit will not be given for both courses.) Prerequisite: CIS 135, 140, 210, and 222 with grades of C or higher; or permission of the Instructor. Co-requisite: ELEC 126.*

**CIS 275 - Computer Information Systems Practicum 3:1:12**

A minimum of 180 hours of work experience, over at least a 15-week period, in an approved internship applying the knowledge and skills acquired in the Computer Information Systems curriculum. Written documentation of internship activities and other performance-evaluation measurements are used to determine the grade. The course must be scheduled for the last semester so that the student derives the most benefit from the experience. *(The course is intended for those who are currently employed in a position requiring extensive*

use of computers. It is an alternative to CIS 270; credit will not be given for both courses.) Prerequisite: CIS 135, 140, 210, and 222 with grades of C or higher. Co-requisite: ELEC 126.

### **CIS 278 - Business Intelligence and Database Analyst Capstone 3:3:0**

Provides students with a Capstone experience for the CIS Business Intelligence (BI) and Database Analyst (DA) options. This course is designed to allow students to use the skills taught in the BI and DA program concentrations to develop an application and database system (project) through all phases of the life cycle. Students are able to work in small groups using technology-enabled communication software. A professional portfolio that highlights the work completed throughout the program is also created. Prerequisite: CIS 243 or WEB 240 and CIS 245 or WEB 245 with grades of C or higher. Co-requisite: CIS 224, 257, and 247 or 258; or permission of Instructor.

## **COMPUTER NETWORKING TECHNOLOGY**

### **CNT 120 - Network Communications Technology I 3:3:0**

Introduces students to the fundamental building blocks that form a modern network system, such as protocols, standards, addressing, media, topologies, and hardware. Other topics addressed are: basic terminology associated with networks, uses of networks, network architectures, TCP/IP Protocols, tools for troubleshooting TCP/IP networks, structured cabling, networking media, signaling methods, transmission flaws, wireless local area networks (WLANs), and virtualization. Additional focus is placed on the objectives on the Network+ exam to help students prepare for the Network+ certification exam. However, this course is not sponsored, nor endorsed, nor affiliated with CompTIA, Inc. Prerequisite: Eligibility for enrollment into ENGL 101 and MATH 055 (or MATH 051) or MATH 045; or permission of the Instructor.

### **CNT 125 - Network Communications Technology II 4:3:3**

Continues the competencies covered in CNT 120. This course teaches students the following concepts through lecture and hands-on laboratory exercises: virtualization, cloud computing, remote access, encryption, network risk management, firewalls, unified communications, network management, network monitoring, subnetting, supernetting, Virtual Local Area Networks (VLANs), WAN technologies, Wireless Local Area Network (WLANs), Industrial networks, troubleshooting, and Network Design. Students regularly use multiple operating systems, virtual machines and network hardware to complete hands-on laboratory exercises. Additional focus is placed upon reviewing the objectives on the Network+ exam to help students prepare for the

Network+ certification exam. However, this course is not sponsored, nor endorsed, nor affiliated with CompTIA, Inc. A course fee is required. Prerequisite: CNT 120 with a grade of C or higher.

### **CNT 140 - The Physical Network 3:3:1.5**

Provides the student with practical skills necessary to design, install, test, and certify communications wiring systems. This course covers communications cabling choices that are currently available, the standards for their use, tools and equipment utilized, installation methods, testing, certification, and troubleshooting installed cable system failures. Students are taught the rules and standards that govern the design of cabling systems. The laboratory exercises require students to install, test, certify and troubleshoot a copper cable system and fiber-optic termination according to a standards-based installation. Students also prepare a bid specification for a cable system installation. A course fee is required. Prerequisite: CNT 120 with a grade of C or higher.

### **CNT 220 - Internetworking 5:4:3**

Provides students with a more detailed understanding of internetworking and internetworking devices. This course presents more in-depth details of the TCP/IP Protocol suite including the underlying applications, components and protocols, identifying TCP/IP layers, and components and functions. The devices discussed and utilized in this course include hubs, switches, routers, and servers. Topics include L2 addressing, Virtual Local Area Network (LANs) and VLAN Trunking, L3 addressing, routing techniques, routing protocols, Network Address Translation (NAT), security, remote access, troubleshooting, and traffic capture and analysis. In addition, this course presents the following protocols: Ethernet, Address Resolution Protocol (ARP), IPv4, IPv6, Internet Control Message Protocol (ICMP), Routing Information Protocol (RIP), Open Shortest Path First (OSPF), Enhanced Interior Gateway Routing Protocol (EIGRP), Transmission Control Protocol (TCP), User Datagram Protocol (UDP), Domain Name System (DNS), Dynamic Host Configuration Protocol (DHCP), and various application layer protocols such as HyperText Transfer Protocol (HTTP) and Simple Mail Transfer Protocol (SMTP). A course fee is required. Prerequisite: CNT 125 with a grade of C or higher.

### **CNT 230 - Telecommunications and IP Telephony 3:2:3**

Covers telecommunications and IP Telephony. This course discusses unified communications, Public Switched Telephone Network (PSTN) components and connections, Voice over Internet Protocol (VoIP) network components, gateways, voice ports, analog ports, digital ports, dial peers, IP-PBX, and network configuration to support VoIP communications and voicemail. The focus of the course is on

basic IP Telephony installation, configuration, and maintenance of small- to medium-sized IP Telephony solutions. Students are able to perform these skills using Cisco Unified Communications Manager Express (CME), and Cisco Unity Express (CUE). Students also becomes familiar with IP-PBX (Asterisk) and the environment in which it operates - both in terms of operating system and telephony connections (traditional and IP) and with the installation, configuration, and basic operation. This course can be used to help students prepare for the Cisco Certified Network Associate (CCNA) Voice certification exam, as well as the Digium Certified Asterisk Administrator (dCAA) certification exam. A course fee is required. *Prerequisite: CNT 125 with a grade of C or higher.*

### **CNT 240 - Cisco Routing & Switching 3:2:3**

Prepares students for Cisco Certified Network Associate Routing and Switching certification by covering CCNA Routing and Switching exam objectives. This course is not sponsored, endorsed, or affiliated with Cisco Systems, Inc. Cisco and CCNA are registered trademarks of Cisco Systems, Inc. in the United States and certain other countries. A course fee is required. *Prerequisite: CNT 220 with a grade of C or higher; or permission of the Instructor.*

### **CNT 250 - Virtualization and Cloud Computing 3:2:3**

Provides students with an in-depth understanding of virtualization and cloud computing concepts through lecture and hands-on lab exercises. This course covers topics that include benefits of virtualization, virtualization terminology, hardware requirements, hardware selection and compatibility, configuration and administration of desktop virtualization, server virtualization, cloud computing, and virtual networking. The course also explores the "As a Service" (aaS) concept such as Infrastructure As A Service (IaaS), Platform As A Service (PaaS) and Software As A Service (SaaS) and the offerings available on common cloud providers. Cloud management and devops techniques are covered as well. Laboratory exercises allow students to use common commercial and freely available virtualization software and common cloud computing providers. A course fee is required. *Prerequisite: CNT 120 with a grade of C or higher. Co-requisite: CIS 249 or 264; or permission of the Instructor.*

### **CNT 260 - Wireless Network Administration 3:3:1.5**

Provides the networking professional a complete foundation of knowledge for entering into or advancing in the wireless networking industry. From basic RF theory to link budget math, including topics from troubleshooting to performing a site survey, this course delivers hands on training that benefits the novice as well as the experienced network professional. This course targets both novice and experienced networking professionals who wish to gain a solid understanding of

wireless networking to complement their knowledge of traditional wired networking. This course can be used to help students prepare for the CWNA (Certified Wireless Network Administrator) exam. A course fee is required. *Prerequisite: CNT 120 or CTEC 101 and CNT 125 or CTEC 102 with a grade of C or higher.*

### **CNT 291 - Cooperative Work Experience 3:0:15**

Faculty-monitored employment in an approved internship with a local employer, maintaining an active network environment for a minimum of 15 hours per week. The intern works on a day-to-day basis with a network administrator, specialist, or technician. As a job "shadow," the intern has responsibilities that may include basic network configuration, documentation, support, and troubleshooting tasks. The qualified candidate applies the knowledge and skills acquired as a Computer Networking Technology major. This course is scheduled for the last semester and is intended for those not employed in a computer-related position. *Restricted, see Program Coordinator.*

## **COMPUTER SCIENCE**

### **CPS 113 - BASIC Programming Using Microcomputers 3:3:0**

Covers the fundamentals of programming. This course introduces a beginner-level programming language to the new programmer, who defines and writes simple programs. Throughout the course, program design techniques are developed to enable the student to write more complex programs in an efficient manner. These programs incorporate numeric and string processing, file access, peripheral device control, subprograms, single dimension array processing, and basic object oriented programming. *Prerequisite: MATH 033 & 044 (or MATH 051) or MATH 045 with grades of C or higher; Placement through the College Testing and Placement Program.*

### **CPS 115 - Visual Basic Programming I 3:3:0**

Covers the concepts and techniques of programming in a Windows environment. This course contains project assignments that require students to demonstrate an understanding of BASIC programming structures and incorporate event-driven interfaces, decision-making structures, and arrays. An introduction to more advanced Visual Basic topics is also included. No prior programming experience is necessary for enrollment into the course. *Prerequisite: Placement through the College Testing and Placement Program or completion of MATH 033, 044, & 055 (or MATH 051) or MATH 045 with grades of C or higher.*

**CPS 121 - Computer Science I – Introduction to Computer Programming JAVA 3:3:0**

Covers the defining and writing of simple programs that emphasize object-oriented programming (OO). This course explores programming concepts such as algorithms, data types, classes, methods, looping, decision-making, arrays, and files. JAVA Applications are developed using an appropriate development environment, as well as program design techniques to enable students to write more complex programs from a variety of fields in an efficient manner. This course is geared towards the computer science major but would also benefit the general college student. *Prerequisite: MATH 103 with a grade of C or higher.*

**CPS 135 - C Programming 3:3:0**

An introduction to structured programming using the C language. C is a powerful language, rich in data types; its flexibility allows a wide range of applications that normally would be written in Assembly language through self-documenting high-level languages. An integral part of the course is exploration of the type of programming that is encouraged by C's flexibility. *Prerequisite: CPS 113 or 115 or 121 with a grade of C or higher; or permission of the Instructor.*

**CPS 161 - Computer Science II – Algorithmic Design JAVA and C++ 3:3:0**

Studies the techniques of algorithm development and programming style. This course employs two high-level languages for algorithm testing and allows students the opportunity to work on a number of projects (e.g. character manipulation, polynomial operations, file processing) to design, code, and document. *Prerequisite: CPS 121 with a grade of C or higher.*

**CPS 162 - Computer Science III – Data Structures C++ 3:3:0**

Continues the topics covered in CPS 161 with a focus on logical data structures and various physical implementations of the structures. Students are required to design and code several programs in such topics as stacks, queues, linked lists, recursion, string processing, hashing, trees, and graphs. *Prerequisite: CPS 161 with a grade of C or higher.*

**CPS 230 - Object Oriented Programming JAVA 3:3:0**

Presents Object-oriented or OO programming. This course introduces students to the concept of classes and how abstraction, encapsulation, and inheritance fit into the object paradigm. Students are taught OO analysis and design. Syntax and its idioms are covered with particular emphasis on programming using OO. *Prerequisite: CPS 121 with a grade of C or higher.*

**CRIMINAL JUSTICE**

**CJ 101 - Introduction to Criminal Justice 3:3:0**

Orientation to criminal justice, its philosophic basis and historical development; agencies and processes; technical and legal problems; the role of the criminal justice system in American society. *Prerequisite: Completion of all developmental reading and writing courses required, as a result of the College Testing and Placement program.*

**CJ 104 - Police Operations 3:3:0**

Introduction to the responsibilities of police and police agencies at the local, state and federal levels. Police operations are examined relative to effectiveness in crime control, delivery of services, and maintenance of order with particular emphasis on patrol operations and techniques. *Prerequisite: Completion of all developmental reading and writing courses required, as a result of the College Testing and Placement program.*

**CJ 106 - Introduction to Corrections 3:3:0**

An overview of correctional processes and procedures; including various types of programs and systems at the local, state, and federal levels. Victim and offender rights are also discussed. *Prerequisite: Completion of all developmental reading and writing courses required as a result of the College Testing and Placement program.*

**CJ 108 - Criminology 3:3:0**

Development and causes of criminal and delinquent behavior; an overview of criminological theories; social norms and criminal law; patterns of crime, delinquency, and deviant behavior. *Prerequisite: Completion of all developmental reading and writing courses required as a result of the College Testing and Placement program.*

**CJ 109 - Instrumentation and Technologies 3:3:0**

An introduction to the technologies presently utilized by criminal justice agencies. Current technological hardware and software available to agencies are discussed with a cost/benefit approach. Including, but not limited to, topics such as speed detection devices, computerization, and communications. *Prerequisite: Completion of all developmental reading and writing courses required as a result of the College Testing and Placement program.*

**CJ 201 - Criminal Investigation 3:3:0**

Techniques, principles, problems, and theories of criminal investigation. Emphasis is also placed on the questioning of witnesses and suspects; collection and preservation of evidence; preparation of cases. *Prerequisite: Completion of all reading and writing courses required, as a result of the College Testing and Placement program.*

**CJ 203 - Criminal Evidence 3:3:0**  
Evaluation of evidence and proof with regard to kind, degree, admissibility, competence and weight; studies based on court decisions as they relate to force, search and seizure, other legal aspects of evidence. *Prerequisite: Completion of all developmental reading and writing courses required, as a result of the College Testing and Placement program.*

**CJ 206 - Criminalistics 4:3:3**  
Scientific aspects of criminal investigation at the crime scene and in the criminalistics laboratory. Includes preserving and processing fingerprints; tool impressions; analysis of hair, fibers, blood and narcotics; casts and molds; polygraph examination; and voiceprint identification. A course fee is required. *Prerequisite: CJ 201 with a grade of C or higher and completion of all developmental reading and writing courses required as a result of the College Testing and Placement program; or permission of the Instructor.*

**CJ 208 - Intermediate Criminalistics 4:2:4**  
A continuation of CJ 206. Forensic examination, identification and analysis of physical evidence in the criminalistics laboratory, including examination of hairs and fibers, documents, pathology, voice identification, and paint via modern methods and equipment. A course fee is required. *Prerequisite: CJ 206 with a C or higher grade and completion of all developmental reading and writing courses required as a result of the College Testing and Placement program.*

**CJ 210 - Probation and Parole 3:3:0**  
Examines the roles of both the public and private agencies that handle the treatment of offenders within the community. This course also covers the overall objective of probation, parole, and other community programs, half-way houses, work-release programs, and prevention programs. *Prerequisite: Completion of all developmental reading and writing courses required, as a result of the College Testing and Placement program.*

**CJ 211 - Juvenile Justice 3:3:0**  
Introduces students to the juvenile justice system of the United States - its components and functions. This course addresses court processes, legal cases, and legislative initiatives. In addition to examining the evolution of the juvenile justice system and the transformation of the juvenile court within the United States, students gain an understanding of the current issues in the adjudication and treatment of juveniles. Differences between the United States system and that of other countries is also examined. *Prerequisite: Completion of all developmental reading and writing courses required as a result of the College Testing and Placement program.*

**CJ 212 - Criminal Law and Procedure 3:3:0**  
History, theory, and principles of criminal law with particular emphasis on the duties and responsibilities of officers enforcing various criminal laws. *Prerequisite: Completion of all developmental reading and writing courses required, as a result of the College Testing and Placement program.*

**CJ 215 - Criminal Justice Organization & Administration 3:3:0**  
Principles of management as they relate to organizational structures and activities of public and private police and corrections agencies. The development of policy, personnel administration, inspection procedures, performance evaluations, and planning and research are discussed. *Prerequisite: Completion of all developmental reading and writing courses required, as a result of the College Testing and Placement program.*

**CJ 240 - Ethics and Diverse Cultures 3:3:0**  
Contemporary issues in the criminal justice field, including an analysis of diversity factors and of common life problems of persons employed in the criminal justice field. *Prerequisite: Completion of all developmental reading and writing courses required, as a result of the College Testing and Placement program.*

**CJ 243 - International & Domestic Terrorism 3:3:0**  
Studies the phenomena of international and domestic terrorism from the historical and criminal justice perspectives. The course provides historical and political viewpoints and an examination of the changing trends in security and justice. *Prerequisite: Completion of all developmental reading and writing courses required as a result of the College Testing and Placement Program.*

**CJ 245 - Criminal Justice Study Abroad in London 4:4:0**  
Encompasses a comprehensive two-week study of the British criminal justice system - its historical development, operational procedures and policies, and its significance to the American criminal justice system. Students visit the City of London Police, Hendon Police College, the Old Bailey Central Criminal Court, Bow Street Magistrates Court, the Inns of Court, the Supreme Court of the United Kingdom (UK) and a number of other Criminal Justice-related institutions. Lectures are provided at the facilities by faculty and experienced criminal justice practitioners. Additionally, students are able to observe court sessions and English constables on patrol, as well as experience an evening tour of the crime scenes left by the most famous serial killer in history - Jack the Ripper. Visits to the Tower of London, Imperial War Museum, Stonehenge, Westminster Abbey, Warwick Castle, and Canterbury afford students with the opportunity to better comprehend and appreciate English

culture and its history as it relates to the criminal justice process. A course fee is required. *Enrollment is restricted to students in the Criminal Justice AA, the Criminal Justice (PASSHE) AA, and the Police Science AAS programs; or permission of the Instructor. Prerequisite: Completion of all developmental reading and writing courses required, as a result of the College Testing and Placement program.*

**CJ 251 - Criminal Justice Internship 3:3:0**

A minimum of 200 hours of work experience in an approved public safety agency, commonly defined as police, courts, corrections, or fire service, or in a commercial/industrial security agency. The agency or industry selected must be approved by the Division administrator and be specifically related to the curriculum of the student. Requires a comprehensive final report and daily diary. Limited to highly qualified students. *Prerequisite: CJ 101 and two other Criminal Justice courses with a C or higher grade and completion of all developmental reading and writing courses required as a result of the College Testing and Placement program; Program Coordinator's recommendation or permission of the Instructor.*

**CULINARY ARTS**

**CULI 100 - The World of Wine 1:0.67:1**

Acquaints the student with the fundamentals of wine. This lecture/laboratory course focuses on basic terminology, service standards, wine and champagne service, types of wine, and the major wine producing countries and regions around the world. A course fee is required. The Pennsylvania Liquor Control Board allows persons 18 years of age and older to serve wines and spirits. Since some activities involve wine sampling, including in-class activities and winery tours, students must provide the same documentation of age as would be required by a public establishment to be served alcoholic beverages.

**CULI 102 - Culinary Math 2:2:0**

Utilizes basic math principles as related to industry specific calculations, operating ratios and formulas used by hospitality professionals. This course specifically addresses decimals; percentages; weight, volume, and metric measurements; edible and as purchased yields; food and beverage cost percentages; and recipe conversions, costing, and menu pricing. A course fee is required. *Prerequisite: Placement through the College Testing and Placement Program or completion of MATH 008 or 010 with a grade of C or higher.*

**CULI 106 - Professional Bartending 1:0.67:1**

Covers the fundamentals of bartending. The course focuses on basic terminology, service standards, product knowledge, beverage preparation, and the legal aspects of serving alcohol.

The Pennsylvania Liquor Control Board allows persons 18 years of age and older to serve wines and spirits. Since some course activities involve wine tasting and a brewery tour, students must provide the same documentation of age to be served alcoholic beverages as would be required by a public establishment. A course fee is required.

**CULI 113 - Sanitation and Safety 2:2:0**

Covers the principles of safe food-handling in the commercial foodservice environment. This course addresses the different types of microorganisms and toxins that may cause foodborne illnesses; the role that time and temperature controls play in the flow of food throughout the operation; the importance of proper food-handling and adhering to food safety systems and procedures; and the various food allergens affecting people today. This course also covers sanitary facilities and pest management, as well as the importance of employee training. Current issues in food sanitation, along with the local, state, and federal regulations that apply, are also discussed. This course meets the Pennsylvania Department of Agriculture requirement for certified food handlers. The SERVSAFE examination of the National Restaurant Association is administered.

**CULI 123 - Catering: Principles, Garnishing, & Hors D'oeuvre 3:1:4**

Introduces students to the logistics of catering, including legal regulations, menu selection, client relations, and costing. The course also serves as an introduction to the use of edible garnishes to enhance food presentations and to the selection, preparation, serving, and storage of hors d'oeuvres as used in food service operations. The course is conducted through demonstration, visuals, and hands-on experience. Participation in a catering event may be required. *Students must purchase an approved uniform.* A course fee is required.

**CULI 133 - Culinary Arts I 5:3:5**

Introduces the students to culinary theories and techniques through lecture and demonstration. This course focuses on the preparation of basic recipes, as well as techniques used in a professional kitchen, by covering such topics as professionalism, sanitation and safety, knife skills, mise en place, plate presentation, principles of cooking, vegetables, potatoes, grains and pastas, dairy and cheeses, stocks and sauces, soups, and meats including beef, veal, lamb, pork, and poultry. Students are responsible for purchasing an appropriate uniform and a designated knife kit. A course fee is required. *Enrollment is restricted to students in the Culinary Arts AAS and Certificate programs. Co-requisite: CULI 113.*

**CULI 143 - Culinary Arts II****5:3:5**

Focuses on the preparation and presentation of recipes as well as the techniques used in a professional kitchen. This is a lecture/laboratory and demonstration course that covers game meats, fish and shellfish, egg cookery, principles of the bakeshop, quick breads, yeast breads, pies, pastries, cookies, cakes and frostings, custards, creams, frozen desserts, and dessert sauces. There is also an introduction to the garde manger kitchen including salads, dressings, fruits, sandwiches, and hors d'oeuvres. Students must have an approved uniform and a designated knife kit. A course fee is required. *Enrollment is restricted to students in the Culinary Arts AA, Certificate, and Diploma programs. Majors must maintain their enrollment in CULI 143 and CULI 205 throughout the duration of the semester. Prerequisite: CULI 133 and CULI 113 with grades of C or higher. Co-requisite: CULI 205; Must have the National Restaurant Association Educational Foundation's SERVSAFE Certification.*

**CULI 153 - Culinary Arts III****5:3:5**

Introduces students to a variety of regional and world foods. This lecture and laboratory course examines local cooking methods, culinary specialties, and indigenous ingredients and products. Students develop weekly presentations identifying cultural, topographical, and social circumstances that have created diverse regional cuisines. This course also outlines advanced charcuterie and garde manger techniques. A class project that involves conceptualizing, preparing and executing an eight-course served dinner is included. Students must have an approved uniform and designated knife kit. A course fee is required. *Enrollment is restricted to students in the Culinary Arts AAS and Certificate programs. Majors must maintain their enrollment in CULI 153 and CULI 206 throughout the duration of the semester. Prerequisite: CULI 143 and CULI 205 with grades of C or higher. Co-requisite: CULI 206.*

**CULI 205 - Restaurant Operations I****2:0:12**

Introduces students to the culinary industry by working in a commercial operation. This laboratory course allows students to participate in a "hands - on" learning experience as they are introduced to various dining room and kitchen rotations. Areas include: serving assistant, food runner, host, dish room, basic production, pizza station, banquet operations, and bakeshop. Classes are scheduled in day and evening blocks. Students are to select one day and one evening shift. The course is offered at HACC's culinary teaching facility. Students must pass a five panel instant drug test prior to the start date of class. *Students must have an approved uniform and designated knife kit. Enrollment is restricted to students in the Culinary Arts AAS and Certificate programs. Majors must maintain their enrollment in CULI 143 and 205 throughout the entire semester. Prerequisite: CULI 133 with a grade of C or higher and CULI 113. Co-requisite: CULI*

*143; Must have the National Restaurant Association Educational Foundation's SERVSAFE Certification.*

**CULI 206 - Restaurant Operations II****2:0:12**

Introduces students to the culinary industry by working in a commercial operation. This laboratory course allows students to participate in a "hands - on" learning experience as they are introduced to various dining room and kitchen rotations. Areas include: food production, garde manger, hot line stations, and bartending. Classes are scheduled in day and evening blocks. Students are to select one day and one evening shift. The course is offered at HACC's culinary teaching facility. Students must pass a five panel instant drug test prior to the start date of class. *Students must have an approved uniform and designated knife kit. Enrollment is restricted to students in the Culinary Arts AAS and Certificate programs. Prerequisite: CULI 143 and 205 with grades of C or higher.*

**CULI 207 - Restaurant Operations III: Culinary****2:0:12**

Introduces students to the culinary industry by working in a commercial operation. This laboratory course allows students to participate in a "hands - on" learning experience as they are introduced to various dining room and kitchen rotations. Areas include: bakeshop, coffee bar, cashier and financial management, purchasing and receiving, pantry, hot line, and the action station. Classes are scheduled in day blocks. Students are to select two shifts. The course is offered at HACC's culinary teaching facility. *Students must have an approved uniform and designated knife kit. Enrollment is restricted to students in the Culinary Arts AAS and Certificate programs. Prerequisite: CULI 153 and 206 with grades of C or higher.*

**CULI 209 - International Culinary Tour: Italy****3:3:0**

Guides students on a culinary tour of Italy. This course focuses on the social and cultural culinary dimensions and regional development of food and wine. Tours of local producers, markets, and historical sites are included as well as hands-on culinary classes. Local chef instructors lecture and demonstrate local and regional specialties and students have an opportunity to assist in food production as well as sample many traditional local foods. Introductory lectures are scheduled several weeks prior to the trip. A course fee is required.

**CULI 210 - International Culinary Tour: Spain****3:3:0**

Guides students on a culinary tour of Spain. This course focuses on the social and cultural dimensions and regional development of food and wine. Tours of local producers, markets, and historical sites are included as well as hands-on culinary classes. Local chef instructors lecture and demonstrate local and regional specialties and students have

an opportunity to assist in food production as well as sample many traditional local foods. Introductory lectures are scheduled several weeks prior to the trip. A course fee is required.

**CULI 211 - International Culinary Tour: France 3:3:0**  
Guides students on a tour of France. This course focuses on the social and cultural culinary dimensions and regional development of food and wine. Tours of local producers, markets, and historical sites are included as well as hands-on culinary classes. Local chef instructors lecture and demonstrate local and regional specialties and students have the opportunity to assist in food production as well as sample many traditional local foods. Introductory lectures are scheduled several weeks prior to the trip.

**CULI 221 - Basic Foods: Preparation and Production 4:3:2.5**  
Covers the basic fundamental principles of food preparation. This lecture/laboratory course discusses all the major food areas including sauces, soups, vegetables, starches, proteins, salads, eggs, fruits, hors d'oeuvre, baking, and pastry prepared in a commercial kitchen. Students must purchase an approved uniform. A course fee is required.

**CULI 291 - Culinary Arts Internship 3:0:20**  
Provides students with the opportunity to gain hands-on experience working in the food service industry for a total of 280-hours at an approved site. This course is designed to help students refine the skills developed throughout the Culinary Arts programs and prepare them for full-time employment. The student compiles a portfolio of the internship experience for a grade. *Enrollment is restricted to students in the Culinary Arts AAS program. Prerequisite: CULI 207 with a grade of C or higher.*

## **DENTAL ASSISTING**

**DA 170 - Dental Assisting Pre-clinic 4:3:4**  
Introduces the duties of a chairside assistant through lecture and pre-clinical instruction. The pre-clinical component introduces students to basic dental assisting responsibilities, such as seating the patient; performing vital signs; reviewing medical history; applying principles and performing oral evacuation; and properly using and caring for equipment and instruments. Emphasis is placed on proper infection control practices throughout all duties and functions. Students complete rotations in the Dental Hygiene Clinic to assist the Dental Hygiene students with dental and periodontal charting, fluoride application, and oral evacuation procedures. A course fee is required. *Enrollment is restricted to students in the Dental Assisting Certificate. Prerequisite: BIOL 111 or 121*

*with a grade of C or higher. Non-majors need permission of the Program Director.*

**DA 171 - Dental Assisting I 4:3:2**  
Orients students to the role of the dental assistant as an integral member of the dental health team. This course is designed to introduce the student to basic dental assisting responsibilities such as proper infection control practices and the manipulation of various dental materials. This course also covers professional ethics, Pennsylvania dental law, and the members of the dental health team. Students develop clinical skills through the laboratory component. A course fee is required. *Enrollment is restricted to students in the Dental Assisting Certificate program. Non-majors need permission of the program director. Prerequisite: BIOL 111 or 121 with a grade of C or higher.*

**DA 172 - Dental Materials 4:3:2**  
Familiarizes the Dental Assisting certificate student to the materials used in dental practice. This course emphasizes infection control and safety precautions, physical and biological properties, and the manipulation and clinical application of these materials. Students are able to develop and demonstrate proficient clinical skills while manipulating dental materials relevant to theory and practice during the laboratory component. A course fee is required. *Enrollment is restricted to students in the Dental Assisting Certificate. Non-majors need permission of the Program Director. Prerequisite: DA 170, 171, 173, and 175 with grades of C or higher.*

**DA 173 - Dental Radiology I 4:3:3**  
Introduces students to the concepts of ionizing radiation and the production, properties, dosages, hazards, and protective devices related to the dental x-ray. The primary focus of the course includes theory for exposing, processing, mounting, and interpreting dental radiographs as well as quality assurance in the practice setting and alternate imaging modalities. The laboratory portion of the course focuses on the application of dental radiology theory in a clinical setting. Emphasis is placed on the practice of exposing, processing, and mounting intra-oral radiographs with appropriate radiation hygiene and infection control protocol. A course fee is required. *Enrollment is restricted to students in the Dental Assisting Certificate program. Non-majors need permission of the Program Director. Prerequisite: BIOL 111 or 121 with a grade of C or higher.*

**DA 175 - Oral Anatomy 3:3:0**  
Introduces the student to the hard and soft tissues of the oral cavity and of the head and neck. This course provides the necessary background to recognize normal structures and also includes basic dental histology and embryology, dental

morphology, the blood and nerve supply of the head and neck regions, and the bone and muscular structures. *Enrollment is restricted to students in the Dental Assisting Certificate program. Prerequisite: BIOL 111 or 121 with a grade of C or higher. Non-majors need permission of the Program Director.*

**DA 177 - Dental Science 1:1:0**  
Introduces the student to medical sciences as they relate to dentistry. This course specifically addresses the basic principles of oral pathology and pharmacology. *Enrollment is restricted to students in the Dental Assisting Certificate. Non-majors need permission of the Program Director. Prerequisite: DA 170, 171, 173, and 175 with grades of C or higher.*

**DA 178 - Dental Clinical Experience 6:0:24**  
Focuses on clinical practice. This clinical experience provides students an opportunity to apply the knowledge and skills acquired in the classroom and in laboratory sessions in a dental office environment. Students are assigned to work in area dental offices three days per week for a total of 360 hours in a 15-week semester. Students are able to gain additional experience in chairside techniques, dental material manipulation, and patient management at both general and specialty practices. In addition, periodic seminars are provided on campus for students to share experience and to discuss situations and/or problems encountered in the dental office setting. A course fee is required. *Enrollment is restricted to students in the Dental Assisting Certificate program. Non-majors need permission of the Program Director. Prerequisite: DA 170, 171, 173, and 175 with grades of C or higher.*

**DA 179 - Clinical Dental Assisting 2:1:32**  
Provides students with an intersession clinical experience that allows them to spend a total of 96-hours working in an approved dental office environment in order to gain exposure to all aspects of its operation. This clinical experience is supplemented through in-class lectures that review and discuss student progress at clinical sites. Observation and evaluation reports generated by clinical staff and instructors are periodically reviewed with the student. A course fee is required. *Enrollment is restricted to students in the Dental Assisting Certificate. Prerequisite: DA 170, 171, 173, and 175 with grades of C or higher. Non-majors need permission of the Program Director.*

**DA 180 - Dental Office Practice 3:3:0**  
Prepares the student for the various business-office aspects of dental practice. This course covers patient psychology, communication skills such as telephone technique and correspondence, maintenance of patient records, appointment control, recall systems, bookkeeping, filing, preparation of

insurance forms, and maintaining supply inventories. *Enrollment is restricted to students in the Dental Assisting Certificate program. Non-majors need permission of the Program Director. Prerequisite: DA 170, 171, 173, and 175 with grades of C or higher.*

**DA 181 - Preventive Dentistry 2:2:0**  
Provides an in-depth knowledge of the concepts and methods used in the practice of preventive dentistry. This course emphasizes the necessity for the dental assistant to both recognize certain oral hygiene needs of each patient and communicate those needs to the patient. In addition, this course covers current techniques used in caries prevention, such as coronal polishing, oral hygiene instruction, nutritional counseling; and the application of sealants. This course also includes a community service project. *Enrollment is restricted to students in the Dental Assisting Certificate. Non-majors need permission of the Program Director. Prerequisite: DA 170, 171, 173, and 175 with grades of C or higher.*

**DA 252 - Expanded Functions I 4:3:3**  
The first of a two-part, post-graduate, course sequence for certified dental assistants and licensed hygienists. This course is designed to expand their skills in the area of restorative dentistry. These skills include: the placement of temporary and permanent restorations using a variety of dental materials; finishing techniques; the construction of bleaching and fluoride trays; and Mouthguards. Students also prepare for the expanded function dental assistants' state certification examination. A course fee is required. Graduation from the Dental Assisting Program with a 3.0 and faculty recommendation, Certification as a Dental Assistant, or Licensure as a Dental Hygienist.

**DA 253 - Expanded Functions II 1:0:12**  
The second of a two-part, post-graduate, course sequence where the techniques and procedures covered in the first sequence are applied in the clinical setting. One portion of the clinical hours are spent in an on-site clinic providing services while another portion is spent in assigned clinical rotation under the direct supervision of a dentist. A course fee is required. *Prerequisite: DA 252 with a grade of C or higher; Certification as a Dental Assistant or Licensure as a Dental Hygienist.*

## **DENTAL HYGIENE**

**DH 100 - Introduction to Dentistry 1:1:0**  
Basic information about the practice of dentistry and dental hygiene for students with no prior experience in a dental office. Basic terminology, procedures and principles related to dental practice are presented for students who are

interested in pursuing a career in dental hygiene. This introductory course provides a foundation for future courses within the dental hygiene curriculum.

**DH 101 - Dental Hygiene Theory and Clinical Experience I 6:3:9**

Introduces disease and preventive oral health services. This course studies the intraoral structures to provide students with a basis for understanding abnormal and disease states. Emphasis is placed on assessment techniques, instrumentation skills, ergonomic considerations to prevent occupational injury, infection control procedures that protect both the client and the hygienist, and basic home care instructions for the client. A course fee is required. *Enrollment is restricted to students in the Dental Hygiene AS program. Prerequisite: BIOL 221 with a grade of C or higher. Co-requisite: DH 110 and 120. (FYS)*

**DH 110 - Dental Radiology I 3:2:3**

Covers the physics of radiation, the principles of proper exposure techniques, and the processing of radiographs including infection control and radiation safety. A course fee is required. *Enrollment is restricted to students in the Dental Hygiene AS program. Prerequisite: BIOL 121 with a grade of C or higher. Co-requisite: DH 120 and DH 180.*

**DH 111 - Dental Radiology II 1:1:0**

Interpretation of intraoral radiographs and introduction to extraoral radiography. Emphasis on accurate exposure as well as the dental hygienist's role in supervising maintenance of equipment, collaborating in exposure policies, and keeping records. *Prerequisite: DH 110 with a grade of C or higher.*

**DH 113 - Clinical Experience II 2:0:16**

Provides basic information on preventive oral care service for clients of all ages. This course focuses on the development of clinical skills and the application of the dental hygiene process of care. A course fee is required. *Prerequisite: DH 101, 110, and 120 with a grade of C or higher. Co-requisite: DH 112.*

**DH 116 - Medical/Dental Emergencies and Intermediate Dental Hygiene Theory 3:2:3**

Provides basic information on preventive oral-care services and medical history conditions for clients of all ages. Students are introduced to dental hygiene treatment planning, client motivation, learning styles, and medical/ dental emergencies. *Enrollment is restricted to students in the Dental Hygiene AS program. Prerequisite: DH 101, 110, and 120 with grades of C or higher. Co-requisite: DH 113.*

**DH 120 - Dental Anatomy 2:2:0**

Covers the form, function, occlusion, and eruption of primary and permanent teeth. This course studies endodontic and coronal morphological considerations and periodontal health. *Enrollment is restricted to students in the Dental Hygiene AS program. Prerequisite: BIOL 121 with a grade of C or higher. Co-requisite: DH 110 and 180.*

**DH 150 - Dental Materials 3:2:3**

Studies the characteristics and use of dental materials. The course is designed to familiarize the dental hygiene student with materials utilized by the dental profession. Presented as an overview of materials, this course emphasizes the following areas: esthetic maintenance of restorations, sealants, margination, construction of sportsguards/fluoride trays/bleaching trays, alginate impressions and the construction of study models from those impressions, periodontal dressings, use of the pulp vitality tester, and the placement/removal of rubber dam and temporary restorations. Opportunities are provided for students to manipulate common restorative materials. A course fee is required. *Enrollment is restricted to students in the Dental Hygiene AS program. Prerequisite: CHEM 100 or high school equivalent with a grade of C or higher. Co-requisite: DH 113*

**DH 160 - Extended Clinical Techniques and Remediation 2:0:16**

Provides additional instruction to students needing further training in the clinical skills area. Infection control practices and instrumentation, assessment, treatment planning, and evaluation of treatment are reinforced. A course fee is required. *Enrollment is restricted to students in the Dental Hygiene AS program. Prerequisite: BIOL 121, 245, and DH 101 with grades of C or higher.*

**DH 161 - Clinical Techniques and Remediation 1:0:8**

Provides additional instruction to students needing further training in the clinical skills area. Infection control practices and instrumentation, assessment, treatment planning, and evaluation of treatment are reinforced. A course fee is required. *Enrollment is restricted to students in the Dental Hygiene AS program. Prerequisite: BIOL 121, 245, and DH 101 with grades of C or higher.*

**DH 170 - Techniques in Pain Control 2:1:3**

Covers the theory and clinical knowledge for safe and effective administration of various anesthetic agents utilized in dentistry for pain control. This course emphasizes injectable local anesthetics. A course fee is required. *Enrollment is restricted to students in the Dental Hygiene AS program. Prerequisite: DH 180, 113, and 116 with grades of C or higher. Co-requisite: DH 240.*

**DH 180 - Head and Neck Anatomy and Histology 3:3:0**  
Encompasses a detailed study of gross anatomical structures and relationships of the head and neck. This course includes histological and physiological fundamentals of odontology with a detailed look at integumentary, skeletal and muscular systems. *Prerequisite: BIOL 121 with a grade of C or higher.*

**DH 190 - Periodontics 3:0:3**  
Studies the clinical presentation of periodontal structures including the histology and immunology in health and disease, disease etiology, epidemiology, and diagnosis. This course also discusses evaluation, treatment planning, and therapeutic treatment modalities for clients with periodontal disease. *Enrollment is restricted to students in the Dental Hygiene AS program. Prerequisite: DH 101, 120, and 180 with grades of C or higher.*

**DH 211 - Dental Hygiene Theory III 3:3:0**  
Discusses dental specialties, as well as treatment of clients with specific conditions and special needs. *Enrollment is restricted to students in the Dental Hygiene AS program. Prerequisite: DH 113, 150, and 190 with grades of C or higher. Co-requisite: DH 212.*

**DH 212 - Clinical Experience III 2:0:16**  
Continues the refinement of clinical techniques including the use of advanced instrumentation techniques and diagnostic and preventive aids such as study models, pit and fissure sealants, and nutritional counseling. A course fee is required. *Enrollment is restricted to students in the Dental Hygiene AS program. Prerequisite: DH 101, 113, 150 and 180 with grades of C or higher. Co-requisite: DH 211.*

**DH 221 - Periodontics II 2:2:0**  
Discusses evaluation, treatment planning, and therapeutic treatment modalities for clients with periodontal disease. *Enrollment is restricted to students in the Dental Hygiene AA program. Prerequisite: DH 121 with a grade of C or higher.*

**DH 223 - Dental Hygiene Theory IV 2:2:0**  
Emphasizes the dental hygienist as a professional member of a dental team. This course discusses professional ethics, office practices, resume writing, and conduct during an employment interview. *Enrollment is restricted to students in the Dental Hygiene AS program. Prerequisite: DH 211 with a grade of C or higher. Co-requisite: DH 224.*

**DH 224 - Clinical Experience IV 2:0:16**  
Continues the refinement of clinical techniques. A course fee is required. *Enrollment is restricted to students in the Dental Hygiene AS program. Prerequisite: DH 190, 211, and 212 with grades of C or higher. Co-requisite: DH 223.*

**DH 230 - Oral Pathology 2:2:0**  
Covers the characteristics of the head and neck region so that students recognize the difference between normal and abnormal conditions. *Enrollment is restricted to students in the Dental Hygiene AS program. Prerequisite: DH 111 and 116 with grades of C or higher.*

**DH 235 - Community Dental Health Education 2:2:0**  
Studies the role that the dental hygienist plays as an educator, planner, and evaluator for community dental health programs. This course explores global perspectives in oral health needs, demand and utilization, cultural competence, biostatistics, oral epidemiology, and the evaluation of evidence-based research in dentistry. *Enrollment is restricted to students in the Dental Hygiene AS program. Prerequisite: DH 112 with a grade of C or higher. Co-requisite: DH 224.*

**DH 240 - Pharmacology 2:2:0**  
Provides the dental hygiene student with an overview of the primary categories of medications prescribed by health care practitioners. This course emphasizes those medications that have dental implications, as well as those used to control pain. *Enrollment is restricted to students in the Dental Hygiene AS program. Prerequisite: DH 116, 180, and NUTR 104 with grades of C or higher. Co-requisite: DH 170.*

**DH 251 - DH Expanded Functions I 3:2:3**  
Encompasses one of a two-part course series designed for dental hygiene students to expand their skills in the area of restorative dentistry. This course specifically addresses placement of restorations using a variety of dental materials, finishing techniques, and placement of temporary restorations. In addition, this course prepares students for the Expanded Function Dental Auxiliary (EFDA) state certification examination. A course fee is required. *Enrollment is restricted to students in the Dental Hygiene AS program. Prerequisite: DH 120 and 150 with grades of C or higher.*

**DH 252 - DH Expanded Functions II 1:0:6**  
Encompasses the second of a two-part course series where the restorative skills learned are applied in the clinical setting. A course fee is required. *Enrollment is restricted to students in the Dental Hygiene AS program. Prerequisite: DH 251 with a grade of C or higher.*

## **DIAGNOSTIC MEDICAL SONOGRAPHY**

**DMS 105 - Introduction to Health Care 4:3:3**  
Provides students with an introduction to the fundamental skills common to healthcare professions. This course presents concepts that include: patient care, medical ethics and law, medical terminology, maintaining clinical records, trends in

healthcare, and professionalism. In addition, related skills are practiced in the lab. A course fee is required. *Enrollment is restricted to students in the Diagnostic Medical Sonography AAS program. Prerequisite: BIOL 111, ENGL 101, and MATH 103 with grades of C or higher. Co-requisite: DMS 110.*

**DMS 110 - Introduction to Diagnostic Medical Sonography 4:2:8**

Presents basic ultrasound principles, instrumentation, Doppler, sonographic terminology and details of the clinical process related to the ultrasound department of an imaging facility. This course also describes anatomic relationships in correlation with basic scanning techniques and protocols. Students engage in an observational clinical rotation. A course fee is required. *Enrollment is restricted to students in the Diagnostic Medical Sonography AAS program. Prerequisite: BIOL 111, ENGL 101, and MATH 103 with grades of C or higher. Co-requisite: DMS 105.*

**DMS 115 - Clinical Experience I 2:0:16**

Allows students to gain skills at an approved clinical site. This course is the first clinical component of the diagnostic medical sonography program and consists of two, eight hour day per week. A course fee is required. *Enrollment is restricted to students in the Diagnostic Medical Sonography AAS program. Prerequisite: DMS 105 and DMS 110 with grades of C or higher.*

**DMS 120 - Diagnostic Medical Sonography Lab I 1:0:3**

Covers ultrasound-scanning techniques that utilizes ultrasound equipment in a laboratory setting. This course addresses imaging techniques related to the abdominal and pelvic organs. A course fee is required. *Enrollment is restricted to students in the Diagnostic Medical Sonography AAS program. Prerequisite: DMS 105 and 110 with grades of C or higher.*

**DMS 125 - Clinical Experience II 3:0:19**

Continues the clinical skills taught in DMS 115. This is the second clinical component of the diagnostic medical sonography program that consists of three, eight-hour days per week at clinical sites. A course fee is required. *Enrollment is restricted to students in the Diagnostic Medical Sonography AAS program. Prerequisite: DMS 115, 120, 130, 150, and 170 with grades of C or higher.*

**DMS 130 - Abdominal Sonography 4:4:0**

Details the normal anatomy and physiology of the abdomen, male pelvis, and non-cardiac chest. This course explains clinical and sonographic findings related to the pathology of the abdomen, male pelvis, and non-cardiac chest, as well as describes Doppler principles and uses. *Enrollment is*

*restricted to students in the Diagnostic Medical Sonography AAS program. Prerequisite: DMS 105 and 110 with grades of C or higher.*

**DMS 140 - Diagnostic Medical Sonography Lab II 1:0:3**

Covers ultrasound-scanning techniques that utilizes ultrasound equipment in a laboratory setting. This course focuses on imaging techniques related to the abdomen, superficial structures, non-cardiac chest, gravid and nongravid pelvis, and vascular structures including Doppler. A course fee is required. *Enrollment is restricted to students in the Diagnostic Medical Sonography AAS program. Prerequisite: DMS 115, 120, 130, 150, and 170 with grades of C or higher.*

**DMS 150 - OB/GYN Sonography I 3:3:0**

Details the normal anatomy, physiology, and the pathology of the pelvic organs. The course details the anatomy and physiology of pregnancy to include the development of the normal and abnormal embryo through the first twelve weeks. In addition, normal fetal development through term is covered, as well as the description of sonographic findings Doppler principles and uses in the clinical setting are presented. *Enrollment is restricted to students in the Diagnostic Medical Sonography AAS program. Prerequisite: DMS 105 and 110 with grades of C or higher.*

**DMS 170 - Acoustical Principles I 4:4:0**

Studies acoustical physical principles, Doppler ultrasound principles, and sonographic instrumentation. This course also covers application and uses in the field of diagnostic medical sonography. *Enrollment is restricted to students in the Diagnostic Medical Sonography AAS program. Prerequisite: DMS 105 and 110 with grades of C or higher.*

**DMS 180 - High Resolution Sonography I 1:1:0**

Details the normal anatomy and physiology of the neck, breast, scrotum, musculoskeletal, and superficial structures. This course explains clinical and sonographic findings related to the pathology of the aforementioned areas. In addition, Doppler principles and uses are described. *Enrollment is restricted to students in the Diagnostic Medical Sonography AAS program. Prerequisite: DMS 115, 120, 130, 150, and 170 with grades of C or higher.*

**DMS 182 - High Resolution Sonography II 1:1:0**

Details the normal anatomy and physiology of the anterior abdominal wall, extremities, neonatal head, hips, spine and superficial structures. This course explains clinical sonographic findings related to the pathology of the aforementioned areas. In addition, Doppler principles and uses are described. *Enrollment is restricted to students in the*

*Diagnostic Medical Sonography AAS program. Prerequisite: DMS 215, 220, 250, and 270 with grades of C or higher.*

**DMS 210 - Vascular Sonography I 1:1:0**  
Introduces the fundamentals of vascular sonography. This course discusses the signs and symptoms of vascular disease. In addition, sonographic application is described and Doppler principles, related to peripheral veins and extra cranial cerebrovascular imaging, are covered. *Enrollment is restricted to students in the Diagnostic Medical Sonography AAS program. Prerequisite: DMS 115, 120, 130, 150, and 170 with grades of C or higher.*

**DMS 212 - Vascular Sonography II 2:2:0**  
Continues the topics covered in DMS 210. This course further discusses the signs and symptoms of vascular disease. In addition, sonographic application is described and Doppler principles, related to peripheral arteries and intra-cranial arteries imaging are covered. *Enrollment is restricted to students in the Diagnostic Medical Sonography AAS program. Prerequisite: DMS 215, 220, 250, and 270 with grades of C or higher.*

**DMS 215 - Clinical Experience III 4:0:32**  
Continues the clinical skills taught in DMS 125. This is the third clinical component of the diagnostic medical sonography program that consists of four, eight-hour days per week at clinical sites. A course fee is required. *Enrollment is restricted to students in the Diagnostic Medical Sonography AAS program. Prerequisite: DMS 125, 140, 180, and 210 with grades of C or higher.*

**DMS 220 - Diagnostic Medical Sonography Lab III 1:0:3**  
Covers ultrasound-scanning techniques that utilize ultrasound equipment in a laboratory setting. This course focuses on the imaging techniques related to the abdomen, superficial structures, non-cardiac chest, gravid and nongravid, pelvis, and vascular structures including Doppler. A course fee is required. *Enrollment is restricted to students in the Diagnostic Medical Sonography AAS program. Prerequisite: DMS 125, 140, 180, and 210 with grades of C or higher.*

**DMS 225 - Clinical Experience IV 4:0:32**  
Continues the clinical skills taught in DMS 215. This is the fourth clinical component of the diagnostic medical sonography program that consists of four, eight-hour days per week at clinical sites. A course fee is required. *Enrollment is restricted to students in the Diagnostic Medical Sonography AAS program. Prerequisite: DMS 215, 220, 250, and 270 with grades of C or higher.*

**DMS 250 - OB/GYN Sonography II 3:3:0**  
Introduces students to sonography of the second and third trimesters of pregnancy. This course addresses maternal diseases and complications; fetal structural abnormalities including an assessment of fetal well-being; Doppler principles as they relate to obstetrics; and an overview of fetal cardiac anatomy and pathology. *Enrollment is restricted to students in the Diagnostic Medical Sonography AAS program. Prerequisite: DMS 125, 140, 180, and 210 with grades of C or higher.*

**DMS 270 - Acoustical Principles II 2:2:0**  
Continues the topics covered in DMS 170. This course addresses advanced principles in medical ultrasound imaging, instrumentation, hemodynamics, and Doppler. Students are required to attempt the American Registry for Diagnostic Medical Sonography (ARDMS) Sonographic Principles and Instrumentation (SPI) national credentialing exam, as scheduled by the program director, to complete this course. *Enrollment is restricted to students in the Diagnostic Medical Sonography AAS program. Prerequisite: DMS 125, 140, 180, and 210 with grades of C or higher.*

**DMS 274 - Diagnostic Medical Sonography Topics 1:0:4**  
Covers the sonographic review of anatomy, pathology, imaging techniques and integration of data. Students are required to attempt the American Registry for Diagnostic Medical Sonography (ARDMS) ABD and OB/GYN national credentialing exams, as scheduled by the program director, to complete this course. A course fee is required. *Enrollment is restricted to students in the Diagnostic Medical Sonography AAS program. Prerequisite: DMS 215, 220, 250, and 270 with grades of C or higher.*

## **ECONOMICS**

**ECON 201 - Principles of Economics I: Macro 3:3:0**  
Structure, operation, and performance of the American economy. The course includes the market system, national income, employment, inflation, economic growth, business cycles, fiscal policy, money, monetary policy, and international economics. (S&BS)

**ECON 202 - Principles of Economics II: Micro 3:3:0**  
Analysis of demand, supply, production costs, market structures, and resource allocation. Current economic policies and problems and other special topics such as government regulation, income distribution, and labor economics. *Prerequisite: ECON 201 or permission of the Instructor.* (S&BS)

## **EDUCATION**

### **EDUC 101 - Foundations of Education 3:3:0**

Examines the historical, philosophical, and sociological foundations of American education. This course addresses purposes, structure, and the impact of schools, as well as teaching methodology, curriculum, and the teaching profession, in relation to students, families and society. Students observe and reflect upon professional dispositions and behaviors in diverse settings during 10-hours of field experience. *Prerequisite: Eligibility of ENGL 101. Students must complete all clearances (State Police, Child Abuse, FBI Fingerprint [ACT 34 & 141], and TB Test) and have this documentation on file with the Academic Division office before permission is granted to enroll in this course. Students must also complete all developmental reading and writing courses required as a result of the College Testing and Placement Program.*

### **EDUC 110 - Foundations of PK-4 Education 4:4:0**

Introduces students to the professional knowledge, skills, and dispositions required and defined by the National Association for the Education of Young Children (NAEYC) and the PA Department of Education Pre-K to 4th grade guidelines for teachers serving children ages three through nine years. This course covers the purposes, structure, impact of schools, teaching methodology, curriculum, and the teaching profession as they relate to students, families, and society. Students observe and reflect upon professional dispositions and behaviors in diverse settings during ten hours of field experience. *Prerequisite: Completion of all developmental reading and writing courses required, as a result of the College Testing and Placement Program. Enrollment is restricted to students in the Early Childhood- Elementary Education AA and Early Childhood Care and Education Certificate. Students must complete all clearances (State Police, Child Abuse, FBI Fingerprint (ACT 34 & 141) and TB Test) and have documentation on file with the Academic Division Office before permission is granted to enroll in this course. (FYS)*

### **EDUC 111 - Fundamentals of Early Care 4:4:0**

Introduces students to the professional knowledge, skills and dispositions, required and defined by the National Association for the Education of Young Children (NAEYC), for teachers serving children ages 0 - 8 years. Students reflect upon both the teaching applications and the learning theories implemented in diverse early care and educational settings. Examinations of current transition practices into public schools is also covered. *Ten (10) hours of observation is required. Prerequisite: Eligibility for enrollment into ENGL 101. (FYS)*

### **EDUC 113 - Infant and Toddler Development & Behavior 3:3:0**

Presents the theories, principles, processes, milestones, and exceptions related to infant/toddler development and learning. This course emphasizes the interaction between children's development and their early environment, particularly the critical role of warm, responsive, nurturing relationships in healthy development. Students examine factors that influence the trajectory of children's development, particularly those that pose a risk to long-term well-being and those that serve a protective role for children at risk. Students explore legal and ethical responsibilities of early childhood professionals in response to children with special needs and children experiencing maltreatment. The appropriate uses of observation and assessment in infant/toddler settings are also discussed. *Enrollment is restricted to students in the Early Care and Education AAS and Certificate programs.*

### **EDUC 117 - Building Family and Community Partnerships to Support Infants and Toddlers 3:3:0**

Emphasizes the importance and benefits of positive, collaborative, and supportive relationships with families as an essential responsibility of the infant/toddler educator. This course examines effective strategies for building those relationships. Students explore the many ways in which they and the families they serve can differ as a reflection of personal/family experience, cultural influences. Connections to community resources that benefit children and families are also explored. Advocacy for coordinated and responsive services are presented. *Enrollment is restricted to students in the Early Care and Education AAS and Certificate programs.*

### **EDUC 119 - Infant and Toddler Practicum 4:3:2**

Allows students to apply and practice knowledge and skills, acquired in previous coursework/training, in working with infants, toddlers, and their families during 90-hours of field experience. This course permits students with many opportunities to reflect and receive feedback on their role as an early childhood professional and their proficiency in the competencies needed to support infants and toddlers. Emphasis is placed on effective application of recommended practices, as identified in state and national professional criteria, in authentic early childhood program settings. *Enrollment is restricted to students in the Early Care and Education AAS and Certificate programs. Prerequisite: EDUC 113, 117, and 145 with grades of C or higher.*

### **EDUC 120 - Observation and Assessment of the Young Child 3:3:0**

Highlights the purposes, benefits, and techniques of systematic observation and assessment of children from birth - 9 years. Various observation and assessment methods are evaluated, compared, and contrasted. Course discussions

cover how various types of formal and informal observations and assessments guide the development of the child's instructional and behavioral plan and help maintain accountability in the classroom and in schools. *Ten (10) hours of classroom observation are required. Prerequisite: EDUC 110 or 111, and PSYC 212 with a grade of C or higher.*

**EDUC 130 - Introduction to the Child Development Associate 1:1:0**

Introduces students to the Child Development Associate (CDA) credential program and prepares students to document their competence working with young children. Examines the thirteen CDA functional areas and guides students in preparing for formal CDA assessment. *Prerequisite: Student must be working in a center-based or home-based Early Childhood setting.*

**EDUC 131 - Child Development Associate Assessment and Portfolio Preparation 3:3:0**

Prepares the student for assessment by the Council for Professional Development, leading to credentialing as a Child Development Associate. The student develops a competency portfolio according to standards of the Council and is observed and assessed functioning in one of these settings: infant and toddler, preschool, family child care, or home visitor. Students who intend to apply for CDA assessment at the conclusion of this course must meet the current training and experience requirements of the Council for Professional Recognition. *Prerequisite: EDUC 130 with a grade of C or higher, or permission of Faculty in Early Childhood Education discipline, and are currently working in an early childhood classroom where the student can be observed.*

**EDUC 135 - Health, Safety and Nutrition in Early Childhood Care and Education 3:3:0**

Analysis of the health, safety, and nutritional needs of children ages birth - 9 years. Topics include children with special needs; the examination of PA state early childhood education programs and standards; the strategies for teaching health, safety and nutrition to young children; and the current issues affecting the overall health and physical wellness of young children. *Prerequisite: EDUC 111 with a grade of C or higher.*

**EDUC 140 - Integrating the Arts and Play as Educative Process 3:3:0**

Introduces the development and expression of creativity - within the early childhood classroom - through the integration of visual art, music, movement, drama, and play. Students plan, implement and assess creative activities through the process of investigation, exploration and participation. A course fee is required. *Prerequisite: EDUC 110 or 111 with a grade of C or higher.*

**EDUC 145 - Infant and Toddler Care & Education 3:3:0**

Explores the critical role that the adult-child relationship plays in supporting children's optimal development and learning in three key areas: (1) social-emotional, (2) cognitive, and (3) language and literacy. Students are taught specific skills to capitalize on teacher-child interactions by turning them into valuable learning opportunities for children. Students also gain knowledge and skills to enable them to recognize and adjust their teaching practices for the unique characteristics and needs of children from dual-/multi-lingual families and vulnerable populations. *Ten hours of observation is required in both infant and toddler group settings. Enrollment is restricted to students in the Early Care and Education AAS and Certificate programs. Prerequisite: EDUC 185 or 113 with a grade of C or higher.*

**EDUC 155 - Fundamentals of Family Child Care 3:3:0**

Introduces the essentials for operating a family childcare home-based business to potential and existing childcare providers. Emphasis is on the home-based environment, scheduling and programming, financial considerations, state regulations, family partnerships, and current issues. *Prerequisite: EDUC 111 with a grade of C or higher.*

**EDUC 165 - Fundamentals of School Age Care 3:3:0**

Covers the developmental theory of school-age children and how it applies to program planning, design, and implementation. Topics also include age appropriate guidance strategies, the role and purpose of school-age care, activity planning, licensing, and national standards. *Prerequisite: EDUC 111 with a grade of C or higher.*

**EDUC 175 - Program Administration in Early Childhood Care and Education 3:3:0**

Examines the administrative role of the Child Care Director. Topics include regulatory considerations, staffing, administrative responsibilities, financial management, facility development, client relations, marketing, and employee supervision. *Prerequisite: EDUC 185 or PSYC 212 and EDUC 111 with a grade of C or higher; completion of nine credits in the Early Childhood Care and Education Certificate, or permission of the Instructor or Program Coordinator.*

**EDUC 180 - Diversity and Partnerships in Family, Schools and Community 3:3:0**

Examines the importance of building respectful and reciprocal relationships among families, schools, and communities. Topics include global education systems, historic and modern family configurations, and the effects a child's home culture has on learning aptitudes and educational expectations. The impact of special needs on families and family-partnerships is also covered. *Prerequisite: EDUC 110*

or 111 with a grade of C or higher and eligibility for enrollment into ENGL 101.

**EDUC 185 - Development and Behavior in Children 3:3:0**

Examines theories of child development. This course emphasizes how the biological, environmental, and cultural influences affect the typical and atypical growth/development of children, from birth to 12 years, covering all developmental domains. *Prerequisite: EDUC 111 with a grade of C or higher or concurrently enrolled in EDUC 111, and eligibility for enrollment into ENGL 101.*

**EDUC 190 - Growth and Wellness in Childhood 3:3:0**

Designed to help caregivers, teachers, parents, and students become partners in assisting children achieve educational success. Course covers the stages of development as they relate to health, safety and injury prevention, and physical activity. Students learn how movement, games, and healthful living contribute to the growth and development of children in both care and education environments. *Prerequisite EDUC 110 or 111 with a grade of C or higher.*

**EDUC 210 - Exceptional Learners 3:3:0**

Covers the origins, status, and trends of Early Intervention and school age Special Education. Students are introduced to the characteristics of exceptional children from birth to school age. Primary focus is on preparing prospective teachers and early childhood students to work with the individual differences of children within an inclusive educational and/or child care setting. Child giftedness is also covered. Approximately 6-hours of field visits/ observations at programs/schools, serving exceptional children, are required. *Prerequisite: EDUC 110 and PSYC 212 and ENGL 101 with a grade of C or higher.*

**EDUC 211 - Early Childhood Inclusion 3:3:0**

Introduces the principles and rationales for partnerships in the provision of early intervention services for young children with disabilities. The course focuses on legislation, service-delivery models, curriculum planning, classroom strategies, and the role teachers and families play in supporting children with Individual Family Service Plans (FSP)/Individual Education Plans (IEP). *Six hours of field visits and observations are required. Prerequisite: EDUC 110 or 111 and PSYC 212 with a grade of C or higher. EDUC 185 may be substituted in place of PSYC 212 by permission of Instructor.*

**EDUC 220 - Mathematics for the Young Learner 3:3:0**

Covers a variety of developmental theories that foster mathematical thinking in young children. Students gain knowledge in teaching mathematics using appropriate methods, strategies, and materials for children ages birth-9

years. The course also includes content, strategies, resources, and technology information. *Prerequisite: EDUC 110 or 111 with a grade of C or higher.*

**EDUC 235 - STEM for the Young Learner 3:3:0**

Introduces students to the current issues and trends in the teaching and learning of Science, Technology, Engineering, and Mathematics (STEM) concepts for the young learner. This course focuses on STEM education and its application with children using developmentally appropriate practices and technology. *Enrollment is restricted to students in the Early Care and Education AAS and certificate, as well as the Early Childhood - Elementary Education AA program. Prerequisite: EDUC 110 or EDUC 111 with a grade of C or higher.*

**EDUC 260 - Social Studies for the Young Learner 3:3:0**

Prepares students to apply the standards and thematic strand of social studies as defined by the National Council for the Social Studies. Emphasis is on creating effective citizens using developmentally appropriate practices, as outlined by the Pennsylvania Learning Standards, which include the four disciplines (civics and government, economics, geography, and history), used to define social studies in Pennsylvania. *Prerequisite: EDUC 110 or 111 with a grade of C or higher.*

**EDUC 261 - Integrating Curriculum in Early Childhood Classrooms 3:3:0**

Studies how children acquire and process information using Brain-based learning research. Students apply the knowledge of Developmentally Appropriate Practice, the PA Early Learning Standards, the PDE Standard Aligned System, and the National Association for the Education of Young Children (NAEYC) guidelines to develop strategies that engage children in the learning process. Students plan a classroom environment that supports development and learning for children Pre K - grade 4 and use an integrated approach to lesson planning by incorporating learning experiences from all content areas throughout the curriculum. Creating lesson plans that contain developmentally appropriate learning opportunities and support and conform to model SAS planning (including big ideas, essential questions, and developing learning outcomes that support standards, etc.) is an integral part of the course. *Ten (10) hours of observation are required. Prerequisite: ENGL 101; EDUC 110 or 111; PSYC 212; EDUC 140, 220, 260, and 270 with grades of C or higher. For students in the Certificate program only: EDUC 185 may be substituted in place of PSYC 212 by permission of Instructor.*

**EDUC 270 - Foundations of Early Literacy 3:3:0**

Introduces topics in the field of literacy. Focus is on research-based practices in emergent literacy, language development,

comprehensive literacy instruction, assessment techniques and literacy strategies for the multi-cultural, English Language Learner, and exceptional child. *Prerequisite: EDUC 110 or 111 with a grade of C or higher.*

**EDUC 290 - Principles of Classroom Instruction 3:3:0**

Introduces students to the teaching process. This course presents instructional strategies; the development of learning objectives; the application of various taxonomies; and the differentiation of instruction. Classroom management and assessment techniques, that foster student learning, are also discussed. *Twenty hours of classroom field experience is required. Enrollment is restricted to students in the Early Childhood - Elementary Education AA program. Prerequisite: EDUC 110 or 111, and PSYC 212 with grades of C or higher.*

**EDUC 291 - Early Care and Education Practicum 5:3:2**

Requires students to complete 90-hours of active participation, under the supervision of a PA state certified teacher, in a diverse birth through PreK child-care setting, PK Counts, or Head Start center. This capstone course allows students to develop and assess lessons based upon the outcomes of National Association for the Education of Young Children (NAEYC) and the PA Early Learning Standards. Students also meet weekly throughout the class to reflect upon/discuss the implementation and integration of coursework as applied to children's learning and care. *Enrollment is restricted to students in the Early Care and Education AAS and certificate, as well as the Early Childhood - Elementary Education AA program. Prerequisite: EDUC 110 or 111, EDUC 210 or 211, EDUC 185, EDUC 261, EDUC 270, and ENGL 101 with grades of C or higher.*

**EDUC 295 - Program Development & Supervision for Directors in Childcare 3:3:0**

Covers the study skills and techniques needed to develop curriculum and a program operational-system within the philosophy of the childcare center. Theories underlying curriculum development and implementation are stressed as materials and equipment are analyzed within the environmental framework. Curriculum supervision and delegation are part of the learning experience. *Prerequisite: EDUC 175 and ENGL 101 with a grade of C or higher.*

**EDUC 296 - Leadership and Professionalism for Childcare Directors 3:3:0**

Provides an in-depth study of the leadership skills and techniques needed to manage childcare center staff. Supporting and educating the staff in legal and ethical issues is also included. Students learn skills in and philosophies of leadership styles, conflict management, team building, stress

management, and leading advocacy efforts for children and families. *Prerequisite: EDUC 175 and ENGL 101 with a grade of C or higher.*

**ELECTRICAL TECHNOLOGY**

**ELOC 153 - Fundamentals of Electricity 4:2:4**

Presents basic electrical terms, units and Ohm's Law, analysis of series, parallel and series/parallel circuits, and the operation and use of batteries. The use of capacitance in DC currents and the operation of magnetic circuits are also covered. In addition, the course introduces alternating current waveforms, average and effective values, and capacitors and inductors in AC circuits. Reactance and impedance are defined. The operation of series and parallel AC circuits, resonance circuits (series and parallel), and polyphase systems are covered. A course fee is required.

**ELOC 157 - Electrical Wiring I 4:2:4**

Provides an introduction to residential wiring practices, including safety procedures and to basic tools. This course specifically addresses cutting, stripping, and splicing Romex wire installation of duplex and basic receptacles, lighting circuits, single pole, 3-way and 4-way switches. Students wire combination lighting/receptacle circuits, baseboard heaters, dryers, range circuits and other circuits according to the National Electrical Code (NEC). In addition, installing fused and fuseless panels is also covered. A course fee is required. *Co-requisite: ELOC 153; or, permission of the Instructor or Discipline Lead.*

**ELOC 163 - Electrical Wiring II 4:2:4**

Introduces commercial wiring safety requirements, basic tools and related equipment. Installation of branch circuits, feeders, switches, receptacles and appliances are covered. In addition, students learn lighting terminology, fixture locations, installation, overcurrent protection, and emergency systems operations. A course fee is required. *Co-requisite: ELOC 157; or, permission of the Instructor or Discipline Lead.*

**ELOC 167 - Photovoltaic Energy and Systems 3:2:3**

Instructs students to survey, design, and install photovoltaic solar and battery backup systems for residential and commercial use. Buildings, including their layout designs, are analyzed for proper application of solar and battery technologies. This course also covers solar radiation, installation planning, system configurations, DC and AC circuit integration, battery principles, charge controllers, inverters, power conditioners, sizing calculations and methodologies, mounting considerations, overcurrent protection, grounding and bonding, permitting, inspection, utility interconnection policies, maintenance and troubleshooting, incentives, and cost analysis. A course fee is

required. *Prerequisite: ELOC 153 with a grade of C or higher.*

**ELOC 169 - Low Voltage Cabling 3:2:1**

Encompasses the installation, troubleshooting, and repair of single and multi-line systems for telephones, fax machines, alarms, and fiber-optic cabling. Students are introduced to fiber optics as a modern communications system. Laboratory activities include fusion-splicing of these multi-line systems, as well as fiber-optic terminations and connections. A course fee is required. *Prerequisite: ELOC 153 with a grade of C or higher.*

**ELOC 170 - Distributed Generation & Storage II 3:2:4**

Emphasizes the design, calculation, construction use, and the storage of energy. The course presents the increased utilization of monitoring equipment for software analysis of power efficiencies and environmental impact studies. *Prerequisite: ELOC 163 with a grade of C or higher.*

**ELOC 171 - Electrical Service 2:1:2**

Covers the procedures for the safe installation of commercial and residential services. A course fee is required. *Prerequisite: ELOC 163 with a grade of C or higher.*

**ELOC 172 - National Electric Code 2:2:0**

Emphasizes the requirements of the National Electrical Code for service, feeder, and branch circuits, conductor sizing, and grounding. An analysis of appropriate wiring methods for residential and commercial buildings is also provided.

**ELOC 175 - Electrical System Troubleshooting 3:2:2**

Skills and procedures for troubleshooting electrical circuits. Students are taught to systematically identify problems, isolate probable causes, repair malfunctions, and establish preventative maintenance systems. Laboratory work involves addressing issues and programs found in typical industrial settings. A course fee is required. *Prerequisite: ELOC 153 with a grade of C or higher.*

**ELOC 177 - NFPA 70E - Standard for Electrical Safety in the Workplace 1:1:0**

Addresses electrical safety requirements for employee workplaces. This course provides necessary guidelines and strategies for avoiding or reducing the occurrence of injuries within the workplace. This course specifically addresses activities involving interaction with electrical systems from electrocution and arc blasts to electrical explosions and should be garnered as essential training for practical safeguarding of employees.

**ELECTRONICS**

**ELEC 100 - Fundamentals of Electricity & Electronics 1:0:3**

Introduces students to the fundamentals of electricity and electronics. The course covers the basics of direct and alternating current circuits using components such as batteries, fuses, switches, resistors, capacitors, inductors, diodes, and transistors. Additional topics include safety, energy generation, green energy, magnetics, motors, transformers, power supplies, and digital electronics. Lectures and demonstrations relate course content with products found in the home, automobile and business. A course fee is required. *Prerequisite: MATH 033 (or MATH 051) with a grade of C or higher. Co-requisite: MATH 044 and 055 (or MATH 051).*

**ELEC 101 - Equipment Utilization 1:0:3**

Introduces students to basic electronic devices and special technical skills, which include the use of voltmeters, ammeters, ohmmeters, oscilloscopes, and basic hand tools. This course allows students to identify electronic components, applications, and practice testing those components. Students are also able to interpret electrical schematic diagrams and develop skills in basic soldering techniques. In addition, laboratory exercises include instruction on safety practices. Previous electronic experience is not required for this course. A course fee is required. *Co-requisite: ELEC 100 and ENGR 102.*

**ELEC 106 - Fundamentals of Electronics 4:3:3**

Introduction to electronic devices and circuits including semiconductor diodes, rectifiers, special purpose diodes, bipolar transistors, JFETs and MOSFETs. Analysis of biasing circuits and small signal amplifiers such as common emitter, common collector, common base, common source, common drain, and common gate. A course fee is required. *Prerequisite: ELEC 111.*

**ELEC 108 - Applied Digital Electronics 3:2:3**

Studies digital logic circuit fundamentals. This course covers numbering systems, logic gates, Boolean algebra simplification, and combinational logic circuits. A course fee is required. *Prerequisite: ELEC 100 with a grade of C or higher.*

**ELEC 111 - AC/DC Circuits I 4:3:3**

Basic study of AC/DC circuits and magnetism. Topics include Ohm's and Kirchoff's Laws applied to AC/DC circuits; effect of resistance, inductance, and capacitance in AC/DC circuits; and solutions of circuits using Thevenin's Theorem and Norton's Theorem. A course fee is required. *Prerequisite: ELEC 101; Co-requisite: MATH 103.*

**ELEC 125 - Introduction to PC Technology 3:2:3**  
Provides students with operational skills for Windows-based Operating Systems. This course covers the basics of Personal Computer (PC) hardware functions as students learn terminology and how to properly install hardware components used in a desktop PC or computer. Other basic computer operational skills are covered, such as, Basic Input/Output System (BIOS) configurations, internal/external wiring connections, and other major components of the Windows architecture. A course fee is required. *Prerequisite: Familiarity with word processing and MS Windows Operating Systems.*

**ELEC 126 - Installing and Troubleshooting PCs 4:3:3**  
Provides students with a thorough understanding of Personal Computer (PC) hardware, electronics, and software, through a lab-oriented approach. This course allows students to develop analytical skills in problem solving and troubleshooting common computer failures. Students have the opportunity to gain hands-on experience in upgrading and troubleshooting computer systems, laptops, netbooks, and hand-held devices via lab simulations designed to reflect real-world scenarios. In addition, students are introduced to the basic concepts of networking. A course fee is required. *Prerequisite: ELEC 125; or CIS 127 and 210 with grades of C or higher.*

**ELEC 144 - Semiconductor Principles and Applications 3:2:3**  
Provides fundamental knowledge of common industrial electronic components to students pursuing credits in the Mechatronics and/or other technology programs. Students are taught lifelong skills in diagnosing, testing and repairing industrial applications of diodes, transistors, thyristors, rectifiers, voltage regulation, and amplifiers. Classroom theory is supported by hands-on experience. A course fee is required. *Prerequisite: MATH 161 and ELOC 153 or ELEC 100 with a grade of C or higher.*

**ELEC 203 - Electronic Circuit Design 4:3:3**  
Analysis of Class A, B, and C power amplifiers; frequency effects of small signal amplifiers; operational amplifiers; negative feedback; oscillators, timers. The computer is used as a problem-solving tool. A course fee is required. *Prerequisite: ELEC 106 and 211.*

**ELEC 211 - AC/DC Circuits II 4:3:3**  
Continuation of ELEC 111. Network analysis using vectors and complex notation; solutions of AC/DC networks using mesh and nodal analysis; solutions of AC/DC circuits using Thevenin, Norton, and superposition theorems; energy, power, and resonance in AC/DC circuits; and an introduction to single and polyphase transformer theory and PSPICE software as a circuit-analysis simulator are all included. A

course fee is required. *Prerequisite: ELEC 111. Co-requisite: MATH 104.*

**ELEC 213 - Digital Electronics 4:3:3**  
Basic computer functions. An introduction to number systems, such as binary, octal, and hexadecimal. A study of pulse generating and logic circuits. An introduction to Boolean Algebra, Karnaugh maps, and the basic logic networks, such as OR, AND, and NOT. An in-depth look at flip-flops and their applications in counters, registers, adders, converters, etc. A brief survey of computers, microcomputers and D-to-A, and A-to-D converters. The computer is used as a problem solving tool. A course fee is required. *Prerequisite: ELEC 108; Co-requisite: MATH 103.*

**ELEC 291 - Cooperative Work Experience 3:0:15**  
Part-time work experience with an approved electronic employer. Under the supervision of a faculty member, the student performs duties and tasks consistent with topics studied in program courses. *Open only to students who have earned 24 or more credits in the Electronic Engineering Technology AS program and who are enrolled in either the AS or Certificate programs; or permission of the Instructor. Prerequisite: ELEC 100, 101, 108 and 111.*

## **EMERGENCY MEDICAL SERVICES**

**EMS 131 - EMT - Basic 3:2:1**  
Emphasis on patient assessment, initial treatment, and field communications. Topics discussed include basic anatomy and physiology, airway management and cardiopulmonary resuscitation, oxygen therapy, bandaging and splinting, and lifting and moving. A course fee is required. *Co-requisite: EMS 132.*

**EMS 132 - EMT - Basic Field Experience 3:2:1**  
Supervised basic life support experience on emergency vehicles and in hospital emergency departments. *Co-requisite: EMS 131.*

**EMS 133 - EMT - Instructor 1:1:0**  
Theory and techniques of teaching in order to prepare for state EMT Instructor certification. State requirements and guidelines for maintaining certification are discussed. (Enrollment priority is based on local needs.) *Prerequisite: EMS 131 and 132.*

**EMS 200 - Introduction to Advanced Life Support 5:5:0**  
Emphasis is on human-based anatomy and physiology, human illness and disease and an introduction to drug dosage calculations. *Prerequisite: EMS 131 or Pennsylvania EMT State Certification.*

**EMS 231 - Advanced Life Support I 4:3:4**  
Emphasizes patient assessment, shock and fluid therapy, pharmacology, and field communications. *Enrollment is restricted to students in the Paramedic-EMT Certificate. A course fee is required. Prerequisite: Pennsylvania EMT Certification. (FYS)*

**EMS 232 - ALS Hospital Experience I 1:0:3**  
Clinical experience in area hospital emergency departments. A course fee is required. *Prerequisite: EMS 231 with a grade of C or higher or State Certification.*

**EMS 233 - Advanced Life Support II 4:3:3**  
Emphasizes diseases and the treatment of respiratory, cardiovascular, and neurological system emergencies, hematology, and blood disorders. A course fee is required. *Enrollment is restricted to students in the Paramedic-EMT certificate. Prerequisite: EMS 231 and 232.*

**EMS 234 - ALS Hospital Experience II 1:0:3**  
Clinical experience in area hospital emergency departments and anesthesia. A course fee is required. *Prerequisite: EMS 233 with a grade of C or higher or State Certification.*

**EMS 235 - Advanced Life Support III 4:3:1**  
Emphasizes medical emergencies, trauma, obstetrical/gynecological emergencies, pediatric/neonatal emergencies, and psychiatric problems. A course fee is required. *Enrollment is restricted to students in the Paramedic-EMT certificate. Prerequisite: EMS 233 and 234.*

**EMS 236 - ALS Hospital Experience III 1:0:3**  
Clinical experience in hospital departments, emphasizing further work in labor and delivery, pediatrics, and psychiatrics. A course fee is required. *Pre or Co-requisite: EMS 235.*

**EMS 237 - ALS Field Experience 3:0:12**  
Supervised internship on advanced life support vehicles. (Offered by arrangement.) *Pre or Co-requisite: EMS 233 and 234.*

**EMS 238 - Introduction to Rescue 3:2:3**  
Rescue of patients trapped in vehicles and structures with emphasis on safety. A course fee is required. *Prerequisite: EMS 131 and 132.*

**EMS 240 - Introduction to Emergency Medical Services 3:3:0**  
History and development of Emergency Medical Services, including current legislation and system models. Topics include delivery of services and levels of care. *Prerequisite: Permission of the Instructor.*

**EMS 241 - Emergency Medical Services: Externship 3:3:0**  
Supervised administrative experience in local EMS agencies. (Offered by arrangement.) *Prerequisite: EMS 240.*

**EMS 243 - Advanced Life Support Special Topics 2:1:1**  
Discusses medical emergencies, patients with special challenges, medical technology in the home, acute interventions for the chronic patient, assessment-based management, advanced physical assessment and clinical decision-making, and rescue practices. A course fee is required. *Enrollment is restricted to those students in the Paramedic-EMT Certificate program. Co-requisite: EMS 235 and 236 with a grade of C or higher.*

**EMS 244 - Advanced Life Support Special Topics Hospital Experience 1:0:3**  
Covers clinical experience in hospital departments including the emergency department, critical care units, and simulated rescue evolutions. A course fee is required. *Enrollment is restricted to students in the Paramedic-EMT Certificate program. Co-requisite: EMS 236 and 243.*

**EMS 245 - ALS Field Summative Evaluation 1:0:3**  
Summative evaluation of supervised internship on advanced life support vehicles. This course is offered by arrangement with the Paramedic Program Director. *Prerequisite: EMS 237 with a grade of C or permission of the Paramedic Program Director.*

**EMS 250 - Prehospital RN 7:3:12**  
Provides knowledge and skills required to prepare the entry level student desiring to become a prehospital registered nurse (PHRN). The emphasis is on the role of the PHRN, the recognition, assessment, and management of medical and traumatic emergencies. The PHRN is qualified by successful completion of a competency based educational program of clinical, didactic, and practical instruction in advanced emergency care practices. A course fee is required. *Special admissions process: RN licensure, transcript required and permission of the Paramedic Program Director.*

## **ENERGY**

**ENGY 111 - Introduction to Energy Alternatives 3:3:1**  
Patterns of energy use, principles of energy conversion for traditional and non-traditional sources, and conservation techniques. Environmental, social, political, and economic implications are discussed in the context of resource availability and distribution. The laboratory develops facility in the measurement of energy and energy flow. Field trips may be required. A course fee is required. *Pre or Co-requisite: MATH 103.*

**ENGY 215 - Energy Evaluation and Planning 3:2:3**  
Energy usage and environmental effects in business, industry, and residences. Topics include energy auditing and efficiency planning. Laboratory exercises feature site visits, energy assessments, and recommendations. A course fee is required.  
*Prerequisite: Permission of the Instructor.*

## **ENGINEERING**

**ENGR 102 - Engineering & Engineering – Technology Orientation 2:2:0**  
Presents both engineering technology and engineering careers to students for discussion, as well as introduces them to computer software engineering applications. This course covers engineering problem solving, ethics, career suitability, and issues that can occur when transferring to a four-year institution. This course emphasizes the hands-on use of engineering software applications including word processing, spreadsheets, HACC's online tools, and internet research. Guest speakers and off-campus events also augment the topics covered in this course. *Prerequisite: Eligibility for enrollment into ENGL 101. (FYS)*

**ENGR 203 - Engineering Geoscience 4:3:3**  
Applications of geology to engineering and technology. Provides a foundation in geology so engineers and geospatial technologists can interact with professional geologists and understand geologic reports pertinent to engineering projects. Major topics include fundamentals of earth materials and processes, identification of rocks and minerals, engineering problems involving geologic media and processes, soil classification and testing, engineering geology investigations, and geoscience application of remote sensing. Laboratory emphasizes practical engineering problems requiring use of geology. A course fee is required. *Prerequisite: MATH 103 and 104 with a grade of C or higher.*

**ENGR 213 - Statics 3:4:0**  
Covers the characteristics of a force; equilibrium of coplanar force systems; non-coplanar force systems; couples; analysis of structures; friction; centroids; and moments of inertia. Calculus oriented. *Prerequisite: MATH 121 with a grade of C or higher.*

**ENGR 214 - Dynamics 3:4:0**  
Covers rectilinear and curvilinear translation, rotation and plan motion; work and energy; impulse and momentum; and mechanical vibrations. Calculus oriented. *Prerequisite: ENGR 213 with a grade of C or higher.*

**ENGR 271 - Design for the Environment 3:3:0**  
Examines the effects of progress and advances in technology on the global environment. Product design and manufacturing

processes are studied for their effects on the environment.

**ENGR 291 - Engineering Cooperative Experience 3:0:15**  
Allows students to work in an engineering firm. Under the supervision of the faculty, students work on site at an engineering facility with a licensed professional engineer, or an equivalent Engineer, for a minimum of 15-hours per week. The duties may vary with each place of employment, but are to be directly related to the work done by engineering professionals. *Enrollment is only open to students who have earned more than 24-credits in the Engineering or Mechanical Engineering Technology AS programs.*  
*Prerequisite: Restricted, see the Discipline Lead.*

## **ENGLISH**

**ENGL 001 - Strategy-Based Reading I 3:3:0**  
Emphasizes beginner-level reading comprehension strategies and is also designed to help students improve upon their vocabulary and reading fluency. Courses in reading and comprehension improvement are open to all students. Students who are required to take reading courses are identified through the College Testing and Placement Program and may need to work through more than one semester. *Prerequisite: ENGL 001 entry-level performance in the College Testing and Placement Program.*

**ENGL 002 - Strategy-Based Reading II 3:3:0**  
Emphasizes intermediate-level reading comprehension strategies and is also designed to help students improve upon their vocabulary and reading fluency. Courses in reading and comprehension improvement are open to all students. Students who are required to take reading courses are identified through the College Testing and Placement Program and may need to work through more than one semester. *Prerequisite: ENGL 002 entry-level performance in the College Testing and Placement Program, or ENGL 001 with a grade of C or higher. Students who are eligible to enroll into ENGL 029 may take ENGL 029 and ENGL 002 concurrently.*

**ENGL 003 - Strategy-Based Reading III 3:3:0**  
Emphasizes advanced reading comprehension strategies and is also designed to help students improve upon their vocabulary and reading fluency. Courses in reading and comprehension improvement are open to all students. Students who are required to take reading courses are identified through the College Testing and Placement Program and may need to work through more than one semester. *Prerequisite: ENGL 003 entry-level performance in the College Testing and Placement Program, or ENGL 002 with a grade of C or higher, or completion of ENGL 002 exit*

criteria while a student in ENGL 001. Students required to enroll in ENGL 003 and who choose to enroll in ENGL 101 in the same semester must maintain their enrollment in ENGL 003 or they will be dropped from ENGL 101.

**ENGL 007 - Intermediate Strategy-based Reading 6:6:0**

Encompasses intensive reading. This course is designed to help students improve their vocabulary, reading fluency, and higher-level comprehension skills. *Prerequisite: Students must score between 55-61 entry-level performance in the College Testing and Placement Program. Or, completion of ENGL 001 with a recommendation from the Instructor. Students taking this course are NOT eligible to enroll in ENGL 101. Students received a D or an F grade in this course must either retake the course, or take both ENGL 002 and ENGL 003.*

**ENGL 026 - English as a Second Language: 6:5:2.25  
High Beginner Level**

Encompasses a high-beginner level skills-building sequence that teaches grammatical structure, vocabulary, and the sound system of American English for non-native English speaking individuals. This course integrates the development of listening, speaking, reading, and writing skills with a focus on both fluency and accuracy. Students who must enroll in ESL courses are identified through the ESL portion of the College Testing and Placement Program. *Prerequisite: ENGL 026 performance in the ESL portion of the College Testing and Placement Program at the ENGL 026 entrance level.*

**ENGL 027 - English as a Second Language: 6:5:2.25  
Low Intermediate Level**

Encompasses a low-intermediate level skills-building sequence that teaches grammatical structure, vocabulary, and the sound system of American English for non-native English speaking individuals. This course integrates the development of listening, speaking, reading, and writing skills with a focus on both fluency and accuracy. Students who must enroll in ESL courses are identified through the ESL portion of the College Testing and Placement Program. A course fee is required. *Prerequisite: Placement into ENGL 027 through the ESL portion of the College Testing and Placement Program.*

**ENGL 028 - English as a Second Language: 6:5:2.25  
High Intermediate Level**

Encompasses a high-intermediate level skills-building sequence that teaches grammatical structure, vocabulary, and the sound system of American English for non-native English speaking individuals. This course integrates the development of listening, speaking, reading, and writing skills with a focus on both fluency and accuracy. Students who must enroll in ESL courses are identified through the ESL portion of the College Testing and Placement Program. A course fee is

required. *Prerequisite: ENGL 027 with a grade of C or higher. Or, meeting the ENGL 027 exit criteria through the ESL portion of the College Testing and Placement Program.*

**ENGL 029 - English as a Second Language: 6:5:2.25  
Advanced Level**

Encompasses an advanced-level skills-building sequence that teaches grammatical structure, vocabulary, and the sound system of American English for non-native English speaking individuals. This course integrates the development of listening, speaking, reading, and writing skills with a focus on both fluency and accuracy. Students who must enroll in ESL courses are identified through the ESL portion of the College Testing and Placement Program. A course fee is required. *Prerequisite: ENGL 028 with a grade of C or higher. Or, meeting the ENGL 028 exit criteria through the ESL portion of the College Testing and Placement Program.*

**ENGL 050 - Fundamentals of College Writing I 3:3:0**

Provides students with the skills necessary to develop clear sentences, paragraphs, and short essays with an emphasis on basic grammar and usage skills. A grade of C or higher in this course, which includes satisfactory completion of a final writing project, qualifies the student for ENGL 051. *Prerequisite: Placement through the College Testing and Placement Program.*

**ENGL 051 - Fundamentals of College Writing II 3:3:0**

Provides students with the skills necessary to develop clear, coherent paragraphs and longer essays with an emphasis on basic grammar and syntax. Attention is given to the formulation of thesis statements and the development of ideas. A grade of C or higher in this course, which includes satisfactory completion of a final writing project, qualifies the student for ENGL 101. *Prerequisite: Placement through the College Testing and Placement Program or completion of ENGL 050 or 029 with a grade of C or higher.*

**ENGL 057 - Critical Connections in Reading 3:3:0  
& Writing**

Focuses on the two areas of reading and writing. This course is designed to help the student develop and use the strategies and skills needed to negotiate and understand readings, and to compose text. A grade of C or higher in this course completes the developmental sequences in both reading (ENGL 003) and writing (ENGL 051) required for enrollment into any other courses that require English 003 and/or English 051 as prerequisites. *Prerequisite: ENGL 003 entry-level performance in the College Testing and Placement Program, or ENGL 002 with a grade of C or higher, and ENGL 051 placement, or completion of ENGL 050 with a grade of C or higher.*

**ENGL 101 - English Composition I 3:3:0**  
Emphasizes the composition of organized, clear, coherent, and well-supported essays, which features standard English conventions, effective style, and the appropriate use of research strategies and sources. Students develop the critical reading and thinking skills necessary to produce effective college-level writing that communicates to a particular audience, fulfills a specified purpose, and conforms to a given genre. *Prerequisite: Placement through the College Testing and Placement Program or completion of ENGL 007, 051 or 057 with a grade of C or higher; ENGL 003 is a Pre or Co-requisite.*

**ENGL 101H - Honors English Composition I 3:3:0**  
Emphasizes the composition of organized, clear, coherent, and well-supported essays featuring standard English conventions, effective style, and appropriate use of research strategies and sources. Students develop the critical reading and thinking skills necessary to produce effective college-level writing that communicates to a particular audience, fulfills a specified purpose, and conforms to a given genre. Using a seminar or discussion-based approach, this course encourages independent, creative and critical inquiry and prepares students for the practical application of information by emphasizing effective research strategies and technologies congruent with the field of study. *Prerequisite: Placement through the College Testing and Placement Program or completion of ENGL 007, 051, or 057 with a grade of C or higher; ENGL 003 is a pre or co-requisite.*

**ENGL 102 - English Composition II 3:3:0**  
Focuses on expository and argument writing. Students develop advanced reading, critical thinking, and writing skills as they analyze and build arguments in various forms, using research as the basis for developing their own arguments. *Prerequisite: ENGL 101 with a grade of C or higher and completion of ENGL 003, 007, or 057 with a grade of C or higher, or its equivalent.*

**ENGL 102H - Honors English Composition II 3:3:0**  
Focuses on expository and argument writing. Students develop advanced reading, critical thinking, and writing skills as they analyze and build arguments in various forms, using research as the basis for developing their own arguments. Using a seminar or discussion-based approach, this course encourages independent, creative and critical inquiry and prepares students for the practical application of information by emphasizing effective research strategies and technologies congruent with the field of study. *Prerequisite: ENGL 101 with a grade of C or higher; Completion of ENGL 003, 007, or 057 with a grade of C or higher, or its equivalent.*

**ENGL 104 - Technical Writing 3:3:0**  
Applies technical communication principles in the writing of effective reports and technical papers, such as definitions, descriptions, instructions, proposals, and research reports. This course is primarily for technical students. *Prerequisite: Completion of ENGL 101, and 003, 007, or 057 (when required by the College Placement Test) with a grade of C or higher.*

**ENGL 106 - Business-Writing 3:3:0**  
Applies business communication principles in the writing of effective business documents, such as memos, letters, resumes, brochures, and short reports. This course is primarily for business students. *Prerequisite: Completion of ENGL 101 and 003, 007, or 057 (when required by the College Placement Test) with a grade of C or higher.*

**ENGL 107 - Creative Writing I 3:3:0**  
Emphasizes the techniques and terminology of creative writing; experimentation and innovation in the writing process through workshops; finding solutions to writing problems, as well as developing individual voice and submitting work for publication. This course is intended for students interested in writing fiction, nonfiction, and poetry. *Prerequisite: ENGL 101 or permission of the Instructor.*

**ENGL 108 - Creative Writing II 3:3:0**  
Further develops the skills taught in ENGL 107 with a focus on workshops in fiction and poetry. This course includes the study of more advanced craft and terminology, the professional writers whose aims complement students' own objectives or priorities, cross-cultural influences on the writing scene, and publishing work at the professional level. *Prerequisite: ENGL 107 or permission of the Instructor.*

**ENGL 110 - Foundations in Professional Writing 3:3:0**  
Applies the foundations of technical and business communication in developing clear, concise, and effective documents. This course allows students to prepare resumes and documents commonly found within most business establishments and is designed specifically for AAS degree programs and may not be transferable. *Prerequisite: Eligibility for enrollment into ENGL 101. Co-requisite: ENGL 003.*

**ENGL 201 - British Literature I 3:3:0**  
Traces the origin and development of English Literature from the Anglo-Saxons to the dawn of Romanticism. The literature studied in this course includes works from the Old English period, the Middle Ages, the Renaissance, the Early Modern period, and the Restoration and 18th Century. In addition, this course emphasizes an understanding of the interplay of character, style, structure, tone, and theme, as well as a sense

of the relevant history, culture, and social issues that influenced the works studied. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.* (H&A)

**ENGL 202 - British Literature II 3:3:0**

Surveys British writers from 1780 through the current period. The literature studied in this course includes works from the Romantic, Victorian, early 20th century, and contemporary periods. The course emphasizes an understanding of the interplay of character, style, structure, tone, and theme, as well as a sense of the relevant history, culture, and social issues that influenced the works studied. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.* (H&A)

**ENGL 203 - American Literature I 3:3:0**

Traces the emergence of a distinctly American identity seen through its literature produced from early 1600's to 1865. Through the study of representative works from male and female writers reflecting differing social, religious, racial, and ethnic backgrounds and views, this course examines the resulting history of conflicts and strains in political and philosophical views that both unify and divide our country. Students have the opportunity to read fiction and nonfiction in genres including captivity narratives, public journals, private diaries and letters, autobiographies, essays, plays, poetry, and novels. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.* (H&A)

**ENGL 204 - American Literature II 3:3:0**

Examines a multifaceted representation of writers from 1865 to the present. Emphasizes the ways in which American writers have incorporated literary forms and stylistic development into their works to reflect the influences of class, gender, history, politics, race, and religion on American literature. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.* (H&A)

**ENGL 205 - World Literature I 3:3:0**

Explores the development of global literature from 1900 BCE to the 1600's CE, including Mesopotamia, Egypt, Persia, India, China, Japan, and Western Europe (Greece, Rome, Britain, Italy, Spain, and the Americas). The importance of history and diverse culture on the development of language is explored along with the interplay of characters, style, structure, tone, and theme. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading*

*courses required by the College Testing and Placement Program.* (H&A)

**ENGL 206 - World Literature II 3:3:0**

Covers the development of global literature from the 1700 to the present, including works from Europe, the Middle East, Asia, Africa, and the Americas. The importance of history, society, culture, religion, class, and gender is explored along with the interplay of characters, style, structure, tone, and theme. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.* (H&A)

**ENGL 207 - Introduction to Literature 3:3:0**

Explores literature in a variety of genres such as short fiction, poetry, and drama. The focus of this course is on the elements of the literature studied, including character, style, structure, form, tone, and theme. The historical and cultural context of the works studied, including history, geography, culture, race, gender, class, ethnicity, and religion are also considered. Literature studied in this course is drawn from various literary periods as well as from a range of writers, including American, British, western European, and world literary figures. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.* (H&A)

**ENGL 207H - Honors Introduction to Literature 3:3:0**

Explores literature in a variety of genres such as short fiction, poetry, and drama. The focus of this course is on the elements of the literature studied, including character, style, structure, form, tone, and theme. The historical and cultural context of the works studied, including history, geography, culture, race, gender, class, ethnicity, and religion are also considered. Literature studied in this course is drawn from various literary periods as well as from a range of writers, including American, British, western European, and world literary figures. Using a seminar or discussion-based approach, this course encourages independent, creative and critical inquiry and prepares students for the practical application of information by emphasizing effective research strategies and technologies congruent with the field of study. *Prerequisite: Completion of all developmental reading and writing courses required, as a result of the College Testing and Placement Program.* (H&A)

**ENGL 217 - African-American Literature 3:3:0**

Examines race, class, gender, and politics as they are portrayed in African-American literature from colonial times to the present. This course emphasizes the ways in which African-American writers have created and integrated literary traditions and construction into their works to depict the perils and the promise of reconstruction, the migration to urban life,

and the struggle for social justice. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement program.* (H&A)

**ENGL 246 - Shakespeare 3:3:0**  
Introduces one of the key literary and cultural figures of Western history: William Shakespeare. Students study at least six Shakespeare plays from across the four major genres (Tragedy, Comedy, History, and Romance), as well as his fascinating Sonnets sequence. Using a variety of critical approaches to these texts, including Shakespeare in film and/or theater performances, students are able to place the works in their historical and contemporary contexts. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.*

**ENGL 247 - English Arthurian Literature 3:3:0**  
A survey of the literary tradition of Arthurian romance in Western thought, beginning with medieval writings on courtly love as seen through legends of King Arthur, and tracing that tradition through European literature to the present. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.*

**ENGL 265 - Women Writers 3:3:0**  
Analyzes representative works by women writers from the 12th Century to the present. This explores many genres including fiction, non-fiction, drama, and poetry utilizing a common understanding of literary elements. Readings include works by women that reflect their own diverse cultures, experiences, perspectives, and worldviews. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.*

**ENGL 267 - Banned Books 3:3:0**  
The study of representative works of poetry and prose banned in the U.S. and around the world by courts, schools, churches, and governments. Topics include the legal and ethical issues of banning and the politics of censorship. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.*

**ENGL 269 - Native American Literature 3:3:0**  
Surveys the diverse body of Native American literature from oral traditions to contemporary forms in fiction, non-fiction, poetry, and drama. Readings explore themes such identity, cultural experience, and sovereignty in the indigenous Native American experience. *Prerequisite: Eligibility for enrollment*

*into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.*

**ENGL 275 - Science Fiction 3:3:0**  
Covers short stories, novels, films, and critical essays from the science fiction genre. This course allows students the opportunity to explore this genre and, within a cultural context, examine the characteristics of each of the selected works in order to gain an appreciation for the elements that made the narratives revolutionary. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.*

**ENGL 278 - American Short Story 3:3:0**  
Study of works of representative writers with emphasis on the development of an appreciative response to the American short story as a distinctive art form. Typical writers studied are Crane, James, Hemingway, Wright, Faulkner, and O'Connor. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.*

**ENGL 279 - The Modern Novella 3:3:0**  
Studies the works of representative writers from several cultures with an emphasis on developing an appreciative response to the novella as a distinctive art form. Typical writers to be studied are Tolstoy, Conrad, Kafka, McCullers, and Bellow. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.*

**ENGL 901 - Basic Communications Skills 1:1:0**  
Oral and written communications skills for diploma students. Emphasis on interview techniques, principles of interaction with co-workers, writing resumes and business correspondence; basic grammar and usage. *This course may not be transferred to a certificate or degree program.*

## **ENOLOGY & VITICULTURE**

**ENVI 100 - General Viticulture 3:3:0**  
An introduction to the grapevine, grape production, and the world of viticulture. Students learn the taxonomy, anatomy, physiology, and propagation of the grapevine. Grape uses and products are discussed with an emphasis on commercial wine production. Course also explains the climate-soil-grapevine relationship and how it has shaped the history and creation of wine regions.

**ENVI 130 - Spring Vineyard Operations 3:3:1**  
Explores the principles and practices of pruning and training grapevines, cold hardiness, winter injury and frost protection.

Early season vineyard floor management, canopy management and pest identification and scouting are also examined. Students engage in two camps at a commercial vineyard where they practice winter injury assessment, pruning and training, canopy and crop management and pest management skills. *Prerequisite: ENVI 100 with a grade of C or higher.*

**ENVI 140 - Summer Vineyard Operations 3:2:2**

Focuses on summer vineyard management tasks and issues including training young vines, canopy and fruit management practices, nutrient testing and management, pest monitoring and management, and summer weather damage mitigation. Emphasis is placed on establishing and maintaining vine and crop balance. Crop estimating, grower-winemaker relations and grape contracts is also covered. *Prerequisite: ENVI 130 with a grade of C or higher.*

**ENVI 161 - Fundamentals of Enology 3:3:0**

Provides an overview of commercial wine production. Students learn the distinction between white, rosé and red wines as well as sparkling, fortified and dessert wines. Basic wine chemistry and microbiology, production operations, and common terminology are covered. Winery sanitation theory and methods are introduced.

**ENVI 164 - Wine Chemistry & Microbiology 4:3:3**

Course covers the basic concepts, principles and practices of the chemistry and microbiology involved in wine production. Students learn chemical composition of grapes, must and wine, and the changes that occur during the production of aged wine. Wine quality measurements are introduced and appropriate correctives are outlined according to industry standards. Common microbial organisms, yeasts and bacteria and their effects on wine quality are introduced and discussed. Students learn laboratory methods to determine basic chemical composition of must and wine and complete assays that evaluate product stability and procedures for identifying microbial populations. A course fee is required. *Prerequisite: CHEM 100 with a grade of C or higher or its equivalent. Co-requisite: ENVI 161.*

**ENVI 167 - Advanced Winemaking 3:3:0**

Continuation of ENVI 161; provides advanced topics in production of basic wine styles. Focus is on aging and fermentation techniques, as well as maximizing wine quality from cool-climate grapes. Crush pad operations, red, white, and rosé wine fermentation, and aging regimes that include barrel, oak alternative, the Solera and sure lies techniques, are also covered. *Prerequisite: ENVI 161 with a grade of C or higher.*

**ENVI 173 - Winery Sanitation 1:1:0**

Covers the principles of sanitation as they apply to winemaking and winery facilities. Specific emphasis is placed on current methods and agents used in maintaining proper sanitation, with discussions on the effects improper, or insufficient, sanitation practices have on wine quality and worker health. Other topics include processing equipment, storage vessels, floors and drains, interior and exterior premises and sampling equipment, as well as proper storage of materials. *Prerequisite: ENVI 161 with a grade of C or higher.*

**ENVI 183 - Sensory Evaluation I 3:3:0**

Introduces wine sensory evaluation including statistical analysis of trials, the study of wine styles, sensory testing techniques, identification of traits in representative wines, and hedonistic wine descriptors. Students are required to attend a weekend on-campus seminar and purchase wines for evaluation prior to the meeting. A course fee is required. *Student must be at least 21 years of age to participate in wine evaluation.*

**ENVI 191 - Winery Internship 3:0:15**

Students obtain on-the-job work experience working a total of 225 hours in daily operations at an approved winery. Students submit required weekly progress reports and participate in an online discussion board. *Students must be at least 21 years of age in order to participate in wine evaluation. Prerequisite: ENVI 161, 164, 173, and 183 with grades of C or higher.*

**ENVI 215 - Harvest Wine Field Experience 1:0:5**

Provides students with onsite field experience at a winery during harvest. Students actively participate and gain field experience in harvest procedures. Students experience fruit receiving protocol, crush pad machinery operations, must and juice handling, and fermentation processes as they occur in "harvest." Participation requires travel within the region potentially long work-days in order to successfully complete 75 hours of experience. *Students must be a least 21 years of age to participate in wine evaluation. Prerequisite: ENVI 167 with a grade of C or higher.*

**ENVI 250 - Vineyard and Winery Capstone 1:1:0**

Students apply the skills and knowledge acquired in previous viticulture and enology courses to complete a business and marketing plan for a proposed or existing commercial vineyard and/or winery operation and present to a panel of professionals. *Prerequisite: ENVI 200 and MGMT 121 or ENVI 275 and 277 with grades of C or higher.*

**ENVI 253 - Sensory Evaluation II 3:3:0**

Students strengthen skills for identifying wine faults through further development of sensory evaluation skills introduced in

ENVI 183. By using wines originating from the Eastern US and cool-climates regions, students develop a knowledge base of sensory characteristics, through evaluating specific grape varieties and comparing archetypal wines. Course requires students to evaluate wines on their own time and participate in an on-campus weekend evaluation seminar. A course fee is required. *Students must be at least 21 years of age to participate in wine evaluation. Prerequisite: ENVI 183 and CULI 100 with a grade of C or higher.*

**ENVI 261 - Sensory Clarification and Packaging 3:3:0**

Covers the processes involved in preparation of wine for packaging, as well as packaging options. Topics include techniques for measuring chemical and biological stability of wine after the aging process; filtration theory and appropriate use of various filtration systems; options for packaging unfiltered wine and packaging technology that includes bottle and closure selection, storage and use of corks, and alternatives to corks and bottles. Application of the Hazard Analysis and Critical Control Point (HACCP) Plan and proper sanitation procedures is discussed. *Prerequisite: ENVI 167 with a grade of C or higher.*

**ENVI 275 - Winery Regulations and Compliance 3:3:0**

Provides an overview of the various regulatory agencies and the regulations that govern wine industry operations. These agencies include the US Department of Treasury, Alcohol and Tobacco Tax and Trade Bureau (TTB), the Food and Drug Administration (FDA), the Pennsylvania Liquor Control Board (PLCB) and OSHA, as well as local County and Municipal Offices. Students learn specific regulations governing wineries and retail outlets, including recordkeeping, periodic reporting of operations, excise tax records, and labeling laws.

**ENVI 277 - Winery Design and Startup 3:3:0**

Provides a basic overview of all aspects involved in establishing a winery. Basic marketing strategies are discussed to aid students in formulation of a business plan. Students design a comprehensive winery plan to encompass building layout, production projections, warehouse and retail space, utility specifications, and wastewater handling. Emphasis is on sustainability practices.

## **ENTREPRENEURSHIP**

**ENTR 101 - Introduction to Entrepreneurship 3:3:0**

Explores the facets for starting a business. Topics include evaluating entrepreneurial capabilities; recognizing opportunities and generating ideas; conducting risk assessments; analyzing feasibility; creating a business plan; financing; addressing intellectual property issues; evaluating business models; analyzing the industry and competitors;

franchising; planning for growth; and applying the historical lessons of entrepreneurship to enterprise.

## **ENVIRONMENTAL SCIENCE**

**ENVS 201 - Introduction to Environmental Science 4:3:3**

Covers the basic scientific principles employed in assessing and promoting environmental sustainability. The ecological effects of human population growth, energy production, food demands and production, water demands and pollution, waste management, air quality, habitat alteration, and land use are studied in relation to socio-economic issues and cultures in the United States and globally. Laboratories emphasize ecological and carbon footprints, habitat assessment, water resources, waste management, and energy resources. A course fee is required. *Prerequisite: High school academic chemistry, biology, or equivalent. (SCI/LAB)*

**ENVS 220 - Environmental Laws, Regulations and Compliance 3:3:0**

Covers the major laws, regulations, administrative directives, and aspects of compliance and enforcement pertaining to environmental protection, air, energy resources, carbon emissions, alternative fuel sources, workplace safety, pollution, waste management, and management of natural resources. This course emphasizes the responsibilities of Due Diligence, record keeping, reporting, and legal testimony. *Co-requisite: ENVS 201.*

## **ENVIRONMENTAL SPECIALIST**

**ENSP 100A - Environmental Seminar 1:1:0**

Topical sessions on multidisciplinary environmental issues, research, assessment approaches, and implementation procedures. Activities involve participation by students, faculty, and environmental professionals. Seminar may be taken more than once. A course fee is required. *Prerequisite: Permission of Instructor.*

**ENSP 100B - Environmental Seminar 1:1:0**

Topical sessions on multidisciplinary environmental issues, research, assessment approaches, and implementation procedures. Activities involve participation by students, faculty, and environmental professionals. Seminar may be taken more than once. A course fee is required. *Prerequisite: Permission of Instructor.*

**ENSP 100C - Environmental Seminar 1:1:0**

Topical sessions on multidisciplinary environmental issues, research, assessment approaches, and implementation procedures. Activities involve participation by students, faculty, and environmental professionals. Seminar may be

taken more than once. A course fee is required. *Prerequisite: Permission of Instructor.*

**ENSP 100D - Environmental Seminar 1:1:0**

Topical sessions on multidisciplinary environmental issues, research, assessment approaches, and implementation procedures. Activities involve participation by students, faculty, and environmental professionals. Seminar may be taken more than once. A course fee is required. *Prerequisite: Permission of Instructor.*

**ENSP 160 - Professional Issues 1:1:0**

Covers the history, scope and trends of the environmental movement, diversity of environmental career options, professional expectations and ethical issues, team dynamics, public communications, and environmental information sources. Students investigate various environmental services provided by companies located within the local area and conduct detailed research in the career area of their choice.

**ENSP 200 - Quantitative Field Methods 4:3:3**

Sampling and analysis of air, soil, water, and other resources in natural and built environments. Students develop skills in the use of sampling devices, operation of field instruments, reporting, and the integration of field procedures with laboratory requirements. A course fee is required. *Prerequisite: GEOL 201, CHEM 100 or 101, and MATH 103 with grades of C or higher.*

**ENSP 205 - Environmental Lab Methods 4:3:3**

Provides basic knowledge of environmental laboratory analysis requirements and application methods. This course covers equipment calibration, sample preparation and analysis, quality control, quality assurance, and legal requirements with an emphasis on chromatographs, spectrophotometers, and detection-measurement meters. Application methods include sample analysis of air, soil, groundwater, surface water, and waste streams from industry and facilities. Data processing and laboratory report preparation are also emphasized. A course fee is required. *Prerequisite: CHEM 101 or 100, and MATH 103 with grades of C or higher.*

**ENSP 210 - Site Assessment and Planning 3:2:3**

Covers the principles and procedures of site evaluations and planning. This course addresses aspects of environmental assessment, evaluative techniques, and data resources used for site assessment. Students conduct a site assessment following the National Environmental Policy Act (NEPA) methodology in relation to a planned site development. A course fee is required. *Prerequisite: GEOL 201 with a grade of C or higher. Pre or Co-requisite: GIS 141 with a grade of C or higher.*

**ENSP 215 - Hazardous Substances and Safety 3:2:3**

Complies with the OSHA/EPA site safety training requirements for workers employed at job sites containing hazardous materials. This course covers the fundamentals of hazardous materials including the characteristics of chemicals, identifying workplace hazards and selecting personal protective equipment and respiratory protection for various exposure conditions. Focus is on environmental contamination and clean up, hazard communication, and safety regulations and procedures. Laboratory sessions include hands-on exercises and demonstrations in the management of hazardous waste spills. A course fee is required. *Prerequisite: Physician's permission to participate in hands-on laboratory exercises with a respirator and permission of Instructor. Pre or Co-requisite: CHEM 100 or 101 with a grade of a C or higher.*

**ENSP 225 - Aquatic Resource Management 3:2:3**

Aquatic resource topics such as watershed management, storm water management, erosion control, wetland protection, and wetland delineation. Laboratory activities include the application of techniques for site evaluation and management. A course fee is required. *Prerequisite: BIOL 101 or 130 and MATH 178 or 202 with grades of C or higher. Pre or Co-requisite: GEOL 201, ENSP 180, or ENVS 201 with grades of C or higher; or permission of the Program Coordinator.*

**ENSP 230 - Pollution Prevention and Waste Management 3:2:3**

Techniques for preventing pollution, minimizing waste, and increasing energy efficiency. Emphasis is on conducting site evaluations, waste audits, and program monitoring. Laboratory exercises cover assessment and management strategies for a facility. A course fee is required. *Prerequisite: CHEM 100 or 101, and MATH 178 or 202 with grades of C or higher; or permission of the Program Coordinator.*

**ENSP 235 - Environmental Systems and Sustainability 3:3:0**

Strategies for comprehensive management of environmental systems with the goal of sustainability. Approaches studied include environmental accounts, total quality environmental management, and ISO 14001 management systems. *Prerequisite: Permission of the Program Coordinator.*

**ENSP 260A - Environmental Internship 3:0:20**

A minimum of 300 hours of work experience, over at least 15 weeks, in an approved internship applying the knowledge and skills acquired in the Environmental Specialist program. Written documentation of internship activities and other performance-evaluation measurements are used to determine the final course grade. A student may take the course more than once. Enrollment is limited to students in the

Environmental Specialist program. *Prerequisite: Permission of the Program Coordinator.*

**ENSP 260B - Environmental Internship 3:0:20**

A minimum of 300 hours of work experience, over at least 15 weeks, in an approved internship applying the knowledge and skills acquired in the Environmental Specialist program. Written documentation of internship activities and other performance-evaluation measurements are used to determine the final course grade. A student may take the course more than once. Enrollment is limited to students in the Environmental Specialist program. *Prerequisite: Permission of the Program Coordinator.*

**EXERCISE SCIENCE**

**EXSC 102 - Introduction to the Exercise Sciences 3:3:0**

Introduces students to the academic study of the exercise sciences. The course emphasizes exploring the specific theories, skills, and abilities required of practicing professionals in the fields of physical education, exercise science, sports medicine, and other related fields. *Prerequisite: Eligibility for enrollment into ENGL 003 as a result of the College Placement and Testing Program.*

**EXSC 202 - Functional Anatomy and Exercise Physiology 3:3:0**

Introduces the fundamentals of biomechanics and exercise physiology. The course emphasizes the anatomical and mechanical fundamentals of human movement and the physiological concepts related to acute and chronic exercise adaptations. *Prerequisite: EXSC 102, BIOL 121, and PE 201 with a grade C or higher, or Co-requisite PE 201; or the approval of the Exercise Science Program Coordinator.*

**EXSC 203 - Exercise Testing and Measurement 3:3:0**

Teaches the student how to conduct and interpret exercise testing protocols. The course emphasizes how to evaluate the health related components of physical fitness: cardiorespiratory endurance, muscular strength, muscular endurance, flexibility, and body composition. In addition, liability and safety issues are also covered. *Prerequisite: EXSC 102 and 202 with a grade of C or higher; Eligibility for enrollment into MATH 103 and ENGL 101; or, approval from the Exercise Program Coordinator.*

**EXSC 204 - Exercise Physiology 4:3:2**

A comprehensive study of the extent and nature of body variations as a result of physical exertion. The student receives laboratory experience dealing with the oxidation processes of the body in terms of the utilization of proteins, carbohydrates, and fats. The course includes an in-depth survey of neuromuscular, metabolic cardiorespiratory, and

hormonal responses to acute exercise as well as the physiological adaptations to chronic exercise. Topics include thermoregulation, ergogenic aids, body composition, sport training, growth and development, and aging. A course fee is required. *Enrollment is restricted to students in the Exercise Science AS program. Prerequisite: EXSC 202 with a grade of C or higher.*

**EXSC 206 - Exercise Prescription 3:3:0**

Teaches students how to prescribe exercise for improving and maintaining the components of health related fitness: cardiorespiratory endurance, muscular strength, muscular endurance, flexibility, and body composition. The course focuses on working with both healthy individuals and those having metabolic, circulatory, respiratory, orthopedic, and other special considerations. Liability and safety issues are also addressed. *Prerequisite: EXSC 203 with a grade of C or higher; or approval from the Exercise Science Program Coordinator.*

**EXSC 208 - Methods of Instruction and Personal Training 3:3:0**

Introduces methods of group exercise instruction and the science/art of personal fitness training. The course presents research-based information on a variety of group exercise modalities, as well as effective methods and strategies for an individualized personal training program. Special emphasis is on the planning of group exercise classes and on providing students with opportunities to teach and/or lead group exercise classes. In addition, all facets of personal exercise training are examined, specifically, individualized program design and instruction. *Prerequisite: PE 201; EXSC 102, 202, 203, and 206 with grades of C or higher; Co-requisite: EXSC 206; or approval from the Exercise Science Program Coordinator.*

**FINANCE**

**FIN 201 - Principles of Finance 3:3:0**

Covers accounting and economic topics and how they apply to decisions made by financial professionals in contemporary businesses. This course discusses how managing short and long-term assets, selecting financing options and determining the cost of capital influences these decisions. The tools used to make these decisions teach students how to minimize costs and efficiently allocate resources in their role as a financial manager. In addition, the role of financial intermediaries and financial markets are examined as they relate to important financial decisions. *Prerequisite: ACCT 101 with a grade of C or higher.*

## **FIRE SCIENCE TECHNOLOGY**

### **FIRE 101 - Principles of Emergency Services 3:3:0**

Provides an overview to fire protection and emergency services. This course covers the culture and history of emergency service; the organization and function of public and private fire protection services; fire departments as part of local government; laws and regulations affecting fire service; fire service nomenclature; specific fire protection functions; introduction to fire protection systems, strategies, and tactics; fire loss analysis; basic fire chemistry and physics; and life safety initiatives. Students are also introduced to career opportunities in fire protection and related fields.

*Prerequisite: Eligibility for enrollment into ENGL 051.*

### **FIRE 102 - Fire Prevention 3:3:0**

Provides fundamental knowledge relating to the field of fire prevention. This course covers the history and philosophy of fire prevention, the organization and operation of a fire prevention bureau, and the use and application of codes and standards. Plan reviews, fire inspections, fire and life safety education, and fire investigation are also discussed.

*Prerequisite: Eligibility for enrollment into ENGL 051.*

### **FIRE 103 - Principles of Fire and Emergency Services Safety and Survival 3:3:0**

Introduces the basic principles related to the national firefighter life safety initiatives. This course covers the history and culture of fire service with specific focus on the need for cultural and behavior change throughout the emergency services. *Enrollment is restricted to students in the Fire Science Technology AAS. Prerequisite: FIRE 101 with a grade of C or higher; Eligibility for enrollment into ENGL 051; Recommended: GP 202.*

### **FIRE 105 - Building Construction for Fire Protection 3:3:0**

Covers the components of building construction related to firefighter and life safety. This course specifically addresses the elements of construction and design as key factors involved in building inspections, preplanning of fire operations, and in successful operations during emergencies. *Prerequisite: ENGL 051 or 057 or higher.*

### **FIRE 106 - Fire Behavior and Combustion 3:3:0**

Explores the theories and fundamentals encompassing the nature of fire - how and why they start, spread, and controlled. *Prerequisite: ENGL 051 or 057 with a grade of C or higher.*

### **FIRE 201 - Fire Protection Hydraulics and Water Supply 3:3:0**

Provides a basic foundation for the use of water in fire protection situations. Students are able to apply theoretical knowledge of hydraulic principles to analyze and to solve water supply problems. *Enrollment is restricted to students in the Fire Science Technology AAS. Prerequisite: MATH 033, 044, & 055 (or MATH 051) and FIRE 101 with grades of C or higher; or, permission of the Instructor.*

### **FIRE 202 - Hazardous Materials Chemistry 3:3:0**

Covers basic chemistry fundamentals relating to categories of hazardous materials such as recognition, identification, reactivity, and health hazards encountered by emergency services personnel. *Prerequisite: ENGL 051 or 057 or higher.*

### **FIRE 203 - Fire Protection Systems 3:3:0**

Provides an overview of the design and operational features of fire alarm systems, water-based suppression systems, special hazard fire suppression systems, water supply for fire protection, and portable fire extinguishers. *Prerequisite: ENGL 051 or 057 or higher.*

### **FIRE 204 - Fire Investigation I 3:3:0**

Provides the student with the fundamentals and technical knowledge needed for conducting proper fire scene investigations. This course specifically addresses "origin" and "cause" recognition, preserving evidence, documentation, scene security, determining the motives of the fire setter, and the types of fire causes. *Enrollment is restricted to students in the Fire Science Technology AAS. Prerequisite: FIRE 101; ENGL 101, and 102 or 104 with grades of C or higher. Co-requisite: ENGL 102 or 104.*

### **FIRE 207 - Educational Methodology 3:3:0**

Methods of teaching adults in fire service. Included are knowledge through identification of the five senses, principles of learning, lesson plans, and the components of an instructional objective. Application of skills is demonstrated through teaching with the use of lesson plans. Feedback from peers, instructors, and supervisory fire personnel is included to stimulate continually improved teaching without direct supervision. *Prerequisite: ENGL 101, 102, or 104; COMM 101 is recommended.*

### **FIRE 209 - Fire and Emergency Services Administration 3:3:0**

Introduces students to the organization and management of a fire and emergency services department and its relationship to government agencies. The course emphasizes fire and emergency service, ethics, and leadership from the perspective of the company officer.

**FIRE 210 - Strategy and Tactics 3:3:0**  
Covers the principles of fire ground control through utilization of personnel, equipment, and extinguishing agents related to various emergency scenarios. Focus is on ground communication, pre-fire planning, and the roles and responsibilities and resource allocation in Incident Command Systems/National Incident Management Systems (ICS/NIMS). *Enrollment is restricted to students in the Fire Science Technology AAS.*

## **FOUNDATIONAL STUDIES**

**FS 100 - College Success 3:3:0**  
Aids students in a successful transition to college-level courses. This first year experience course is designed to help students with goal-setting, time management, accessing college resources, strengthening their study skills, and information literacy. Additional "tools for success" are also integrated into this course. A course fee is required. (FYS)

**FS 101 - Career Development and Decision Making 3:3:0**  
Explores the process of career and decision-making. This course covers career planning, World-of-Work exploration, self-awareness, occupational research, and goal setting. This is personalized, interaction-based course that utilizes short lectures, group exercises, personal assessments, audio-visual aids, and field interviews to accomplish the objectives. A course fee is required. *Prerequisite: Eligibility for enrollment into ENGL 002 or higher and ENGL 051 or higher, as a result of the College Testing and Placement Program.* (FYS)

**FS 102 - Introduction to the College Experience 1:1:0**  
Provides an introduction to college learning and experiences. Students learn about academic strategies, educational technology, life planning, self-management, and college policies and procedures. Students who are required to take, or have completed, FS 100 may not enroll in this course. (FYS)

**FS 103 - College Success for Online Students 3:3:0**  
Aids students in a successful transition to college-level coursework and the online environment. This first year experience course is designed to help students with goal-setting, time management, accessing college resources, strengthening study skills, and information literacy. Additional "tools for success" are also integrated into the course. *Prerequisite: Reading placement higher than ENGL 003 (no developmental reading is required based upon the placement scores through the College Testing and Placement Program) and placement into ENGL 051, or higher.* (FYS)

**FS 106 - Online Success 1:1:0**  
Introduces students to the online learning environment. This course helps them learn to adapt previously established study

skills for the online environment. In addition, students develop new skills needed specifically for online course work. This course also covers technology use and online course-management tools designed to help students communicate, conduct research, work collaboratively together, and submit assignments. *Prerequisite: Eligibility for enrollment into ENGL 002 or higher, as a result of the College Testing and Placement Program. Or, permission of the Instructor.*

**FS 107 - Developing Confidence and Skills in Math 3:3:0**  
Cultivates essential skills for success in mathematics. This course covers such critical skills as note taking, decision making, and anxiety reduction. Each student is able to work in an individualized, computer-driven, instructor-guided program in developmental mathematics. A course fee is required.

**FS 130 - Promoting Academic Success 1:1:0**  
Assists students with disabilities in the transition to college. Students become aware of disability laws and the types of technology available to assist them. In addition, students become more knowledgeable of HACC's various campus locations and, specifically, the programs, policies, and services. Skills designed to help students succeed and cope with college are also introduced.

## **FRENCH**

**FRCH 101 - Elementary French I 4:4:0**  
Covers the fundamentals of French grammar. This course addresses drill-in structure, pronunciation and the development of vocabulary. Aural-oral and reading skills are also introduced. *Prerequisite: Eligibility for enrollment into ENGL 101.* (H&A)

**FRCH 102 - Elementary French II 4:4:0**  
Continues FRCH 101 competencies in grammar, pronunciation, and vocabulary. Aural-oral and reading skills are reinforced in the classroom. *Prerequisite: FRCH 101 with a grade of C or higher or placement into the course by examination.* (H&A)

**FRCH 201 - Intermediate French I 4:4:0**  
Reviews the fundamentals of French grammar. This course focuses on practice in conversation and composition. Students engage in the extensive reading and analysis of those works acknowledged to be of both cultural and literary merit. *Prerequisite: FRCH 102 or equivalent with a grade of C or higher.* (H&A)

**FRCH 202 - Intermediate French II 4:4:0**  
Continues FRCH 201 competencies with further practice in oral and written skills and the continued reading and analysis of those works acknowledged to be of both literary and cultural merit. *Prerequisite: FRCH 201 or equivalent with a grade of C or higher.* (H&A)

### **GENERAL TECHNOLOGY**

**GTEC 101 - Safety: OSHA-30 & NFPA-70E 3:3.5:0**  
Provides essential knowledge of industry standard safety practices for industrial environments. This course covers electrical and workplace safety standards as set forth by the National Fire Prevention Association (NFPA) and the Occupational Safety and Health Administration (OSHA). Students earn an OSHA-30 General Industry Card through successful completion of this course.

**GTEC 104 - Engineering Materials and Processes 3:2:3**  
Addresses the mechanical properties of materials used in manufacturing. This course explores the basic principles of materials selection, manufacturing processes, and the relationship of materials in manufacturing methods. Material properties are examined in laboratory sessions with destructive and nondestructive tests. A course fee is required. *Prerequisite: MATH 033, 044, & 055 (or MATH 051) with grades of C or higher.*

**GTEC 105 - Customer Service 1:1:0**  
The skills required to communicate effectively and efficiently with customers and the overall importance of good customer service to the company. Sound customer service decisions, accuracy in documentation and reporting, and the importance of personal and workplace appearances are also covered.

**GTEC 106 - Introduction to Manufacturing 3:2:3**  
Modern manufacturing principles and processes. This survey course includes business planning, forecasting, master scheduling, master resource planning, and just in time manufacturing. Students become familiar with local manufacturing companies. The course is divided into three parts. Part I includes classroom discussion and exercises on the evolution of manufacturing industry and manufacturing economics. Part II consists of laboratory activities and observations at participating manufacturing companies. Part III is follow up classroom discussion and exercises focusing on critical workplace skills (attendance, punctuality, communication, teamwork, resume writing, and interview skills). A course fee is required.

**GTEC 110 - Construction Print Reading 3:3:0**  
Introduces construction print reading fundamentals. The course focuses on reading basic construction drawings and

specifications and recognizing and interpreting architectural, mechanical, and electrical symbols commonly found in both residential and commercial applications.

**GTEC 201 - Statics 3:4:0**  
Addresses force systems on rigid bodies and their response to the applied forces. This course analyzes the equilibrium of planar and non-planar force systems, centroids, and moments of inertia. Algebra and trigonometry are used to solve applied examples. *Prerequisite: MATH 103 and 104 with grades of C or higher.*

**GTEC 202 - Statistical Quality Control 3:3:0**  
Analyzes manufacturing effectiveness through the application of fundamental statistical concepts to production processes. Control charting, including mean (X) and range (R) charts, are studied and applied as a technique to improve productivity through the analysis of process variability. *Prerequisite: MATH 033, 044, & 055 (or MATH 051) with grades of C or higher.*

**GTEC 208 - Strength of Materials Lab 1:0.25:2.2**  
Laboratory exercises to support theory of CVTE 208. Labs include measurement of mechanical properties of materials, and structural testing. A course fee is required. *Prerequisite: GTEC 201 with a grade of C or higher.*

### **GEOGRAPHIC INFORMATION SYSTEMS**

**GIS 141 - Introduction to Geospatial Technology 3:2:3**  
Introduces students to the fundamentals of Geospatial Technology including concepts and use of Geographic Information Systems (GIS), a brief overview to the use of Global Positioning Systems (GNSS/GPS), cartography and visualization, remote sensing, and spatial analysis through use of professional grade GIS software exercises. Students are taught how geospatial technology is used in business, industry and government. A course fee is required. (S&BS)

**GIS 141H - Honors Introduction to Geospatial Technology 3:2:3**  
Introduces students to the fundamentals of Geospatial Technology including concepts and use of Geographic Information Systems (GIS), a brief overview to the use of Global Positioning Systems (GNSS/GPS), cartography and visualization, remote sensing, and spatial analysis through use of professional grade GIS software exercises. Students are taught how geospatial technology is used in business, industry and government. Using a seminar or discussion-based approach, this course encourages independent, creative and critical inquiry and prepares students for the practical application of information by emphasizing effective research strategies and technologies congruent with the field of study.

A course fee is required. *Prerequisite: Completion of all developmental reading and writing courses required as a result of the College Testing and Placement Program.* (S&BS)

**GIS 165 - Geospatial Programming 3:2:3**  
Provides students with theory and hands-on experience in customizing geographic information system (GIS) software applications by way of modified service interface elements. This course discusses theory and implementation of the various scripting languages in use within the industry. Students are able to apply the theory to solve geospatial problems and streamline GIS workflows through the creation and modification of scripts. A course fee is required. *Prerequisite: GIS 141 with a grade of C or higher.*

**GIS 201 - Professional Issues 1:1:0**  
Covers the professional practice of geospatial technology. Topics include history, scope, and trends in geospatial technology, professional ethics and expectations, career options, team participation, and professional communications. (FYS)

**GIS 204 - Cartographic Design 3:2:3**  
Applies the fundamental concepts of cartographic design. This course allows students to utilize design principles to create and edit effective visual representations of data (e.g. maps, graphs and diagrams) in different formats (e.g. hardcopy, digital, web). Specific topics include the ethical and appropriate application of map scale, map projections, generalization, and symbolization. A course fee is required. *Prerequisite: GIS 141 with a grade of C or higher or permission of the Instructor.*

**GIS 205 - Data Acquisition and Remote Sensing 4:3:3**  
Presents remote sensing techniques to the study of the Earth's landscape. This course discusses the physical principles on which remote sensing is based, as well as its history and future trends, sensors and their characteristics, image data sources and image classification, and interpretation and analysis techniques. Students are able to perform remote sensing workflows, such as change detection and image processing. A course fee is required. *Prerequisite: GIS 141 with a grade of C or higher or permission of the Instructor.*

**GIS 275 - Advanced Geographic Information Systems 4:3:3**  
Builds on the concepts and problem-solving skills taught in prior geographic information system (GIS) courses and aids students in the interpretation and analysis of spatial data to determine solutions for a variety of geospatial sectors. The lectures and laboratory exercises cover advanced technical issues in GIS including complex data issues, databases, spatial modeling and analysis, elevation and terrain modeling,

geographic analysis, and GIS management. *Prerequisite: GIS 141, 204 and 205 with a grade of C or higher or permission of the Instructor.*

**GIS 291 - Internship in Geospatial Technology 3:0:15**  
Provides students with the opportunity to gain work experience through working a minimum of 225-hours in a supervised setting. In this environment, students are exposed to the same procedural, professional, and ethical issues faced by geospatial technicians on the job. Each internship experience is tailored to the student's major and/or interests and is overseen by either the faculty or internship supervisor. Students are required to present a summary of their experiences. *Enrollment is restricted to students in the Geospatial Technology AS program. Prerequisite: GIS 141 with a grade of C or higher.*

## **GEOGRAPHY**

**GEOG 101 - Physical Geography 3:3:0**  
Elements of the physical environment - climate, vegetation, soil, and landforms - with particular emphasis on conservation of resources and the nature and distribution of geographical regions.

**GEOG 201 - World Geography 3:3:0**  
Introduction to the world's cultural regions (Europe, Asia, Middle East, Africa, Latin America), their interactions and interdependence (migrations, conflict, commerce), and the relationship between their respective human aspects (settlements, culture, economics, political systems), and natural aspects (climate, soils, vegetation, landforms, resources). (S&BS)

**GEOG 230 - Introduction to Human Geography 3:3:0**  
A survey of human settlement patterns and cultural activities throughout the world. Special emphasis is placed on the patterns of human distribution, adjustments to the natural environment, and land use practices. (S&BS)

## **GEOLOGY**

**GEOL 101 - Physical Geology 4:3:3**  
Studies the composition of the earth and the physical processes which tend to alter and shape its surface. Laboratory sessions include field trips through central and eastern Pennsylvania, the identification of common rocks and minerals, and the study and interpretation of topographic and geologic maps. A course fee is required. (SCI/LAB)

**GEOL 101H - Honors Physical Geology 4:3:3**  
Studies the composition of the earth and the physical processes which tend to alter and shape its surface. Laboratory

sessions include field trips through central and eastern Pennsylvania, the identification of common rocks and minerals, and the study and interpretation of topographic and geologic maps. Using a seminar or discussion-based approach, this course encourages independent, creative and critical inquiry and prepares students for the practical application of information by emphasizing effective research strategies and technologies congruent with the field of study. A course fee is required. *Prerequisite: Completion of all developmental reading and writing courses required, as a result of the College Testing and Placement Program.* (SCI/LAB)

**GEOL 102 - Historical Geology 4:3:3**

Examines the geologic history of the earth. This course specifically covers the development of plant and animal life through geologic time and the development of various rock formations, as well as studies the past, present, and possible future environments of man and the integration of geologic findings with those of other sciences. Several field trips through central and eastern Pennsylvania are taken as part of the laboratory experiences. A course fee is required. (SCI/LAB)

**GEOL 201 - Environmental Geology 4:3:3**

Studies geologic resources and processes, impact of geo-environmental processes on humans, and human interaction with Earth's geologic resources by engaging scientific principles, concepts, and methods. This course explores how geology relates to diverse human experiences, international politics, social costs, and world economics. Topics include: geologic processes and tectonics; surface geologic processes; mineral and energy resources; mining and land-use impacts; water resource use and pollution; and geologic data analysis. Laboratory and field trips are part of the course. A course fee is required. *Prerequisite: Completion of all developmental reading and writing courses required, as a result of the College Testing and Placement Program. Co-requisite: MATH 033 (or MATH 020).* (SCI/LAB)

**GEOL 201H - Honors Environmental Geology 4:3:3**

Studies geologic resources and processes, impact of geo-environmental processes on humans, and human interaction with Earth's geologic resources by engaging scientific principles, concepts, and methods. This course explores how geology relates to diverse human experiences, international politics, social costs, and world economics. Topics include: geologic processes and tectonics; surface geologic processes; mineral and energy resources; mining and land-use impacts; water resource use and pollution; and geologic data analysis. Using a seminar or discussion-based approach, this course encourages independent, creative and critical inquiry and prepares students for the practical application of information

by emphasizing effective research strategies and technologies congruent with the field of study. Laboratory and field trips are part of this course. A course fee is required. *Co-requisite: MATH 033 (or MATH 020); Completion of all developmental reading and writing courses required as a result of the College Testing and Placement Program.* (SCI/LAB)

**GERMAN**

**GRMN 101 - Elementary German I 4:4:0**

Covers the fundamentals of German including drill-in grammar competency, pronunciation, vocabulary, and application. Aural-oral reading skills are also introduced. *Prerequisite: Eligibility for enrollment in ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.* (H&A)

**GRMN 102 - Elementary German II 4:4:0**

Continuation of GRMN 101 with increased emphasis on speaking and reading. *Prerequisite: GRMN 101 or equivalent.* (H&A)

**GRMN 201 - Intermediate German I 4:4:0**

Review of the fundamentals of German grammar, practice in conversation and composition; extensive reading and analysis of works of acknowledged cultural and literary merit. *Prerequisite: GRMN 102 or equivalent.* (H&A)

**GRMN 202 - Intermediate German II 4:4:0**

Continuation of GRMN 201. Further practice in oral and written skills; continued reading of works of literary and cultural merit. *Prerequisite: GRMN 201 or equivalent.* (H&A)

**GERONTOLOGY**

**GERT 100 - Introduction to Gerontology - Overview 1:1:0**

Provides an introduction to the study of gerontology, relevant aging resources, and health promotion. This course focuses on socio-demographic trends, ageism, longevity, the geriatric workforce, health care and social policy issues, and health behavior, as well as gender, race, and ethnicity aging issues.

**GERT 101 - Introduction to Gerontology – Social Services 1:1:0**

Provides an overview of the ways in which social services are provided to and utilized by older persons. This course focuses on public/private funding for aging services, retirement, selected health education topics, community health organizations, health promotion programs, volunteerism, advocacy, public health, and cultural diversity in the aging population. The history of social services for the aging is also covered.

**GERT 102 - Introduction to Gerontology – Allied Health 1:1:0**

Provides an overview of the physiology and pathology of aging. The course addresses clinical preventive services, nutritional needs and aging, exercise and aging, and weight management and aging. Attention is given to diversity issues such as gender, race, ethnicity, and socio-economic status of elderly populations.

**GERT 103 - Introduction to Gerontology – Psychosocial Issues 1:1:0**

Provides an overview of mental health and aging. This course specifically addresses psychiatric and organic mental disorders maintenance and the enhancement of mental function later in life, complementary and alternative medicine, caregivers, diverse social support systems, depression, Alzheimer's disease and dementia, and stress management.

**GERT 104 - Introduction to Gerontology – Service Learning 1:1:0**

Provides students with the opportunity to volunteer two hours per week - totaling 20-hours - in a community senior care setting. The focus of this course is to allow a student to develop a personal relationship with an aging individual. Through journaling and course discussions, the student is able to reflect upon the implications of his/her experience, develop enhanced communication skills with an elderly individual, and analyze the collaboration and communications among health care professionals and their clients.

**GERT 105 - Careers in Gerontology 1:1:0**

Examines and explores all of the possible careers in the field of gerontology. This course focuses on career positions, salaries, job responsibilities, and roles/ functions in areas of aging such as advocates, direct service providers, educators/trainers, managers/ administrators, marketers or product developers, program planners or evaluators, and researchers. Topics also include discussions on both traditional and emerging career paths and positions in new sub-fields of gerontology.

**GERT 200 - Law, Ethics, and Aging 3:3:0**

Addresses both the traditional and current legal and ethical issues that impact the elderly in American society. Topics include informed consent, medical record keeping, healthcare financing, elder abuse and neglect, representative decision-making, and end-of-life issues. *Prerequisite: GERT 100, 101, 102 or 103 with a grade of C or higher, or permission of the Instructor.*

**GERT 201 - Social Aspects Aging 3:3:0**

Provides knowledge of the field of social gerontology with focus on the impact that social and socio-cultural conditions has on the process of aging. This course emphasizes social problems of aging and the impact that aging has on an individual. Specific topics include: the growth of gerontology; global aging; biological theories of aging; the social aspects of physical aging; managing chronic diseases; cognitive, personality and mental health issues in old age; sexuality and aging; social theories of aging; and social policies and programs. Gender, ethnicity, culture, race, and economic status and aging are also discussed. *Prerequisite: GERT 100, 101, 102, or 103 with a C or higher.*

**GERT 210 - Fitness and Health Promotion for the Older Adult 3:2.5:0.5**

Provides a review of the health concerns of the older adult, including examples of physical activity, exercise and health promotion programs targeted for this population. Special consideration is given to the planning and development of wellness education programs for the senior population. Participants also engage in physical activity/exercise sessions designed for older adults. A course fee is required. *Prerequisite: PE 138 or 201 with a grade of C or higher.*

**GERT 211 - Women and Aging 3:3:0**

Studies the status, roles, and experiences of women in society with a special focus on aging. This course introduces students to how gender roles impact in society by studying women's lives with regard to race, culture, socioeconomic status, sexuality, work, families, religion, politics, health, and social reform. In addition, this course discusses the social construction of gender and social institutions, using feminist theory, and the history of the women's movement.

**GERT 215 - Aging around the World 3:3:0**

Explores major topics in gerontology worldwide; the demands that the aging population places on society; and both the universal and the unique aspects of aging that span across all cultures and nations.

**GERT 220 - Caregiving and Aging 3:3:0**

Examines and explores all the aspects of caregiving for elders. This course focuses on six main principles of caregiving for the elders including legal, financial, living environment, social, medical, and spiritual. Special topics are explored in-depth, including caregiving for elders with Alzheimer's disease, related dementias, and memory loss.

**GERT 225 - Long-Term Care Leadership and Management 3:3:0**

Examines the changing landscape of long-term care and the issues and trends that impact the administration and

management of long-term care settings. This course focuses on best practices and model programs for maximizing quality of care; tools, strategies and benchmarks for leaders; and the facilitation of partnerships with family, staff, and community.

**GERT 232 - Death and Dying 3:3:0**

Identifies and discusses attitudes and feelings toward death so as to examine and experiment with the common defense mechanisms of dying persons. This course acquaints students with the typical psychological stages of the terminally ill and exposes them to the reality of human finiteness. Other topics include: cultural attitudes and behavior regarding death, mourning rituals, ethics, and children and death. *Prerequisite: GERT 100, 101, 102, or 103 with a grade of C or higher.*

**GOVERNMENT AND POLITICS**

**GP 201 - Introduction to American Government 3:3:0**

Introduces students to the basic structure and concepts of the United States government. This course discusses the United States constitution, political culture, civil liberties and civil rights, political socialization and the media, campaigns and elections, interest groups, the United States Congress, the Presidency and the United States court system. Special emphasis is placed on analyzing the impact government has on the lives of individuals. *Pre or Co-requisite: ENGL 003 or 057; or, placement beyond ENGL 003 or 007. (S&BS)*

**GP 202 - The Politics of States and Cities 3:3:0**

Introduction to the government and politics of states, cities, counties, and townships, with special emphasis on Pennsylvania. Topics include state legislatures, governors, criminal justice systems, lobby groups, budget and taxing policy, and the politics of education, housing, and welfare. The class may include meetings with state representatives, city council members, administrative leaders, county commissioners, and lobbyists. *Pre or Co-requisite: ENGL 003 or 057; or placement beyond ENGL 003 or 007. (S&BS)*

**GP 205 - International Relations 3:3:0**

Introduces students to the major influences among nation-states. This course emphasizes the historical emergence of the international system and the internal and external influences on foreign policies. Special attention is paid to international economic relationships among industrialized countries and between those countries and the less developed countries of the world.

**GP 208 - Comparative Politics 3:3:0**

Introduces students to the political institutions and politics of both democratic and non-democratic countries. This course examines the organizational structures of various political systems and how political problems are solved. Special

attention is given to constitutions, parliaments, political leaders, elections, social and economic policies, political culture, history, and geography. The countries to be studied include the United Kingdom, France, Germany, Russia, and China.

**HEALTH**

**HLTH 101 - Healthful Living 3:3:0**

Studies the lifestyle factors and health choices that promote the dimensions of wellness and maintain the present and future health of the individual and the community. This course emphasizes health-related behavior change, risk factor reduction, and disease prevention, as well as explores such topics as: Psychological Health, Stress Management, Nutrition, Physical Activity, and Exercise. (W)

**HEATING/VENTILATION & AIR  
CONDITIONING**

**HVAC 100 - EPA Refrigerant Handling, Preparation, and Testing 1:1:0**

Designed to provide the HVAC student with the information necessary to successfully complete the certification test for safe refrigerant handling as required by the U.S. Environmental Protection Agency (EPA). The course covers the laws pertaining to Section 608 of the U.S. EPA Clean Air Act including the environmental impact of refrigerants, refrigerant venting and handling laws that pertain to CFC, HCFC, and HFC refrigerants. Upon successful completion of the core section of the test, and one or more of the four Certification Type Test sections, the student will become certified in one of the following U.S. EPA Certification Types: Type I - Small Appliance Refrigeration Systems; Type II - High Pressure and Very High Pressure Refrigerant Systems; Type III - Low Pressure Refrigeration Systems; and/or Type IV - Universal (Type I, Type II, and Type III) Refrigeration Systems. This course may be taken only once for credit. A course fee is required. *Co-requisite: HVAC 103.*

**HVAC 101 - Basic Electrical Fundamentals 4:2:4**

Introduction to basic electricity fundamentals. Topics include circuitry, meter usage, reading or wiring diagrams schematics and automatic controls as related to HVAC. A course fee is required.

**HVAC 102 - R410A Safety and Handling 1:1:0**

Designed to provide the HVAC student with the information to successfully complete the R410A safety and handling test which is required to work on or purchase R410A equipment. Upon successful completion of this course, the student has the opportunity to become R410A safety certified. *Co-requisite: HVAC 103.*

**HVAC 103 - Fundamentals of Air Conditioning I 4:2:4**  
Designed to introduce the physics and science theory relevant to the understanding of air-conditioning fundamentals. Emphasis is placed on components and controls used in air conditioning equipment. CFC federal laws are reviewed. A course fee is required. *Co-requisite: HVAC 101 or ELOC 153, or permission of the Discipline Lead.*

**HVAC 105 - Fundamentals of Air Conditioning II 4:2:4**  
Residential and commercial air conditioning equipment and controls. Installation and repair of equipment are also covered. A course fee is required. *Prerequisite: HVAC 103.*

**HVAC 107 - Fundamentals of Low and Medium Temperature Refrigeration 4:2:4**  
Introduction to low-temperature and medium-temperature refrigeration systems and applications including special electrical and pressure controls associated with this equipment. A course fee is required. *Prerequisite: HVAC 105 or permission of the Discipline Lead.*

**HVAC 108 - Geothermal Energy and Systems I 3:2:3**  
Provides a fundamental understanding of geothermal energy. This course emphasizes both the micro- and macro- levels of geothermal energy and heating/cooling systems. System identification, troubleshooting, measurement and verification, and system inspections are also discussed. A course fee is required. *Prerequisite: HVAC 101 & 103.*

**HVAC 109 - Heating Systems 4:2:4**  
Discusses the fundamentals of heating systems, including installation, troubleshooting, and controls and servicing. A course fee is required. *Pre or Co-requisite: HVAC 101 or permission of the Discipline Lead.*

**HVAC 110 - Fundamentals of Air Conditioning and Heating System Design 3:2:3**  
Introduction to entry-level design skills, principles, and theory necessary to identify, install, and operate various central A/C and heating systems for residential and light commercial installations. Basic hands-on skills required to calculate, design, and lay out air conditioning, heat pump, forced-air, and hot-water heating systems and their components utilizing both hand and computer-software calculations. A course fee is required. *Prerequisite: HVAC 101 or permission of the Discipline Lead.*

**HVAC 200 - HVAC Control Systems 3:3:0**  
Introduction to the design theory of practical, simple, and complex control systems and identification of the control hardware components necessary to meet specific control parameters. Students develop an understanding of electric and electronic, pneumatic, and fluidic controls and control

systems and the air conditioning systems to which they are applied. *Prerequisite: HVAC 101, HVAC 105, and HVAC 109; or permission of the Discipline Lead.*

**HVAC 201 - HVAC Building Systems 3:3:0**  
The study of advanced HVAC systems and equipment used in commercial, institutional, and industrial buildings and processes. The course deals with special equipment topics that require special design needs such as liquid chillers, computer rooms, clean rooms, laboratories, and test chambers and their service and maintenance. The course shows the proper design and equipment selection for these systems and their differences in standard cooling applications as well as their relationship to other building systems. *Prerequisite: HVAC 101, HVAC 105, and HVAC 109; or permission of the Discipline Lead.*

**HVAC 291 - HVAC Cooperative Work Experience 3:0:15**  
Faculty-monitored training with an HVAC employer for a minimum of 15 hours per week. Students learn and practice technical skills on the job. *Open to HVAC majors who have completed 24 or more credit hours in the HVAC program, or with permission of the Discipline Lead.*

## **HISTORY**

**HIST 101 - World History I 3:3:0**  
Provides an overview of the historical development and interrelationships of the major population centers of Asia, Africa, Europe, and the Americas from Neolithic times to 1500 CE. Using a thematic approach, this course observes the political, economic, social, and cultural characteristics of the various regional groups chosen for study. Important ideas, significant persons, and world views are described in the context of each theme. (S&BS)

**HIST 101H - Honors World History I 3:3:0**  
Provides an overview of the historical development and interrelationships of the major population centers of Asia, Africa, Europe and the Americas from Neolithic times to 1500 CE. Using a thematic approach, this course observes the political, economic, social, and cultural characteristics of the various regional groups chosen for study. Important ideas, significant persons, and world views are described in the context of each theme. Using a seminar or discussion-based approach, this course encourages independent, creative and critical inquiry and prepares students for the practical application of information emphasizing effective research strategies and technologies congruent with field of study. *Prerequisite: Completion of all developmental reading and writing courses required, as a result of the College Testing and Placement Program.* (S&BS)

**HIST 102 - World History II 3:3:0**  
An overview of the historical development and interrelationships of civilizations, or population centers of the world, from 1500 to the present. The course examines political, economic, social and cultural themes by emphasizing the important ideas, significant persons, and world views described within the context of each civilization. (S&BS)

**HIST 103 - History of the United States I 3:3:0**  
Covers the history of the United States from Pre-European colonization to the year 1865. This course examines the major events, as well as the individuals, that played a significant role in the development of the United States during this time period. Special attention is paid to the following topics: Native America, European Conquest and Settlement, the Atlantic Economy, Imperial Conflicts in North America, America and the Revolution, the New Republic, Jacksonian America, Westward Expansion, Antebellum America, and A Divided Union and the American Civil War. (S&BS)

**HIST 103H - Honors United States History I 3:3:0**  
Covers the history of the United States from Pre-European colonization to the year 1865. This course examines the major events, as well as the individuals, that played a significant role in the development of the United States during this time period. Special attention is paid to the following topics: Native America, European Conquest and Settlement, the Atlantic Economy, Imperial Conflicts in North America, America and the Revolution, the New Republic, Jacksonian America, Westward Expansion, Antebellum America, and A Divided Union and the American Civil War. Using a seminar or discussion-based approach, this course encourages independent, creative and critical inquiry and prepares students for the practical application of information by emphasizing effective research strategies and technologies congruent with the field of study. *Prerequisite: Completion of all developmental reading and writing courses required, as a result of the College Testing and Placement Program.* (S&BS)

**HIST 104 - History of the United States II 3:3:0**  
Covers the history of persons and events that have contributed to life in America from Civil War Reconstruction to the present. This course specifically addresses: Civil War Reconstruction including the Principles and Causes of the Civil War; Industrialization and the Gilded Age; Conflicts and Change in the West; United States Foreign Policy and Imperialism; the Progressive Era; World War I; the 1920s; the Great Depression and the New Deal; World War II; the Cold War and Vietnam; the Civil Rights Movement; Rising Power of American Conservatism; the Clinton Era; Globalization; and living in a Post 9/11 World. (S&BS)

**HIST 107 - Contemporary American History 3:3:0**  
Covers the history of the United States from the year 1918 to the present. This course examines the significant events, as well as the individuals, that contributed to the development of the United States during this time period. Special attention is given to the following topics: The United States and World War I; The Roaring 20's; The Great Depression and the New Deal; World War II; The Cold War; Vietnam; The Civil Rights Movement; Rising Power of American Conservatism, The Clinton Era; Globalization, and a "Post 9/11 World." In addition, emphasis is placed on the United States' political, social, and economic development throughout the past 100 years. (S&BS)

**HIST 110 - America in Vietnam 3:3:0**  
Provides a survey of Vietnamese history and the causes surrounding the United States' involvement in war with that country during the 20th century. This course emphasizes Southeast Asia and the United States in the context of what was occurring during World War II through the "fall of Saigon." Special attention is given to America's conduct during the conflict, US civil unrest related to the war, and the ultimate results that the war had on both the United States and Southeast Asia.

**HIST 111 - Twentieth Century Europe 3:3:0**  
Introduces students to an overview of European history during the 20th and 21st centuries. This course covers the historical development of the major European countries and their interaction with each other, as well as the rest of the world. Special focus is placed on World War I, Fascism, Nazism, Communism, World War II, the Cold War, the collapse of Imperialism, the fall of the Soviet Union, and the growth of the European Union.

**HIST 120 - Military History of World War II 3:3:0**  
Provides an introductory survey of World War II military strategy and operations used on the European, African, and Asian fronts - beginning with Hitler's 1939 invasion of Poland and ending with the Japanese surrender six years later. Attention is given to the causes and results of the war with special emphasis placed on decisive battles, important military leaders, and various Allied and Axis weapons.

**HIST 161 - The American Civil War and Reconstruction 3:3:0**  
Provides a detailed examination of America's Civil War beginning in 1860 and continuing through to the conclusion of Reconstruction in 1877. This course emphasizes the causes of the war, political and military developments, key leaders and battles, and the social consequences of the conflict.

**HIST 201 - Western Civilization I** 3:3:0  
Explores the growth of European Civilization from Prehistory to the 16th Century. This course discusses Ancient Near Eastern Civilizations, the origins of western religions, the Greco-Roman World, Medieval Europe, the Renaissance and the Reformation, and Global Exploration. Special attention is paid to the significant people and the events they were part of that demonstrate how their influence impacted history on a global perspective. (S&BS)

**HIST 202 - Western Civilization II** 3:3:0  
Explores the growth of European Civilization from the 15th Century to the present. This course discusses religious upheavals, global exploration and colonization, the Enlightenment and its revolutions, industrialization, the formation of Nation-States, the World Wars, the Atomic Age, and the future of the west. Special attention is paid to the significant people and the events they were part of that demonstrate how their influence impacted history on a global perspective. (S&BS)

**HIST 205 - Black History** 3:3:0  
The experience of Blacks in America and the ways in which historians have regarded it. Included are an analysis of African origins and the beginnings of slavery, a description of the Black socio-cultural existence in a racist America, an examination of the roots of Black rebellion, and speculation about possible and probable futures.

**HIST 214 - A History of the Middle East** 3:3:0  
Introduces students to the history, religious diversity, political systems, economy, and culture of the Middle East. This course covers the contents, similarities, and diversities of Middle Eastern culture by briefly examining ancient Middle Eastern civilizations and their historical impacts while also exploring the important historical junctures influencing the region today.

**HIST 218 - Hitler and Nazi Germany** 3:3:0  
Provides students with an in-depth study of German history from the period 1920-1945. This course emphasizes the German social, political, and economic history in relation to the rise and fall of Nazism. Topics include the Jewish Holocaust, Hitler's character, the structure and solidarity of the Nazi State, Nazi propaganda and its use, the Nazi plan for a New World Order, and World War II and its aftermath.

**HIST 221 - History of England** 3:3:0  
A general historical survey of England from Roman times to the present. Key events and persons are studied by examining the sites and structures in southern England and London that are associated with them. This course is part of the College's

international educational program and is taught in England. A course fee is required.

## HOME BUILDING & REMODELING

**HBR 130 - Plumbing I** 3:2:3  
Develops basic hands-on skills in plumbing. This is the first course of a two-part sequence in which emphasis is placed on the application of basic plumbing skills used in residential or small commercial facilities. Students install sinks, water closets, and baths using appropriate tools, equipment, materials, and techniques. A course fee is required.

**HBR 135 - Plumbing II** 3:2:3  
Continues the topics covered in HBR 130. This course emphasizes the application of advanced plumbing skills in the residence or small commercial facility. Students discuss procedures for the installation of water treatment systems, spas, hot tubs, water heaters, lawn sprinklers, and waste treatment systems. Students learn procedures for inspecting and maintaining plumbing systems. A course fee is required.  
*Prerequisite: HBR 130.*

**HBR 137 - Plumbing III** 3:2:3  
Focuses on more specialized plumbing topics. The course emphasizes the use of digital technology to inspect and locate concealed utilities in both residential and commercial construction. Students learn to disassemble and reassemble a variety of plumbing devices. Advanced water treatment systems are also discussed. A course fee is required.  
*Prerequisite: HBR 135.*

**HBR 140 - Introduction to Masonry** 3:2:3  
Develops basic skills in brick laying and block laying. The course covers components and methods of mixing mortar. Students are taught to cut brick and block for building walls. A course fee is required. *Prerequisite: Completion of ENGL 002, 003, or 057 with a grade of C or higher if required by the College Testing and Placement program.*

## HONORS STUDIES

**HONS 101H - Honors Foundation Seminar: Education as Critical Inquiry** 3:3:0  
Uses education as the primary subject of critical inquiry. This course provides students with an environment in which to examine themselves and the world around them in order to develop their own personal philosophy and perspective on community, government, global issues, and technology. Collaborative learning and skills related to research, writing, rubric development, and presentations are emphasized. Bias, persuasion, and propaganda; technology and the culture of science; and mass media and the arts are also examined.

Using a seminar or discussion-based approach, this course encourages independent, creative, and critical inquiry and prepares students for the practical application of information by emphasizing effective research strategies and technologies congruent with the field of study. *Prerequisite: Completion of all developmental reading and writing courses required, as a result of the College Testing and Placement Program. (FYS)*

**HONS 250H - Honors Capstone Seminar: An Inquiry into Meaning, Value, and Self** 3:3:0

Encourages student reflection on accomplishments within their individual academic pursuits. This course is designed to challenge students to envision their future through critical inquiry and promotes the consideration of value and meaning in their own lives, as well as within wider cultural, social, and historical contexts. In addition, this course examines the possibilities of a meaningful life lived through thought, commitment, and expression. Students reflect upon their Honors program experiences through the analysis and presentation of their program electronic portfolio. Using a seminar or discussion-based approach, this course encourages independent, creative, and critical inquiry and prepares students for the practical application of information by emphasizing effective research strategies and technologies congruent with the field of study. *Prerequisite: HONS 101H with a grade of C or higher.*

## **HOSPITALITY & TOURISM MANAGEMENT**

**HTMT 101 - Introduction to Hospitality and Tourism Industry** 3:3:0

Discusses the background and scope of the hospitality and tourism industry. The course outlines the various types of hotels, restaurants, travel and tourism organizations, and their individual organizational structures. In addition, future trends and career opportunities within the hospitality and tourism industry are discussed. A course fee is required.

**HTMT 104 - Nutrition for Food Service** 3:3:0

Covers basic nutrition principles. This course addresses the digestive system, the six nutrients and their role in the body, food sources, nutrient recommendations, and nutritional needs during the life cycle, nutritional factors in food selection and preparation, and the development of healthful recipes and menus. Nutrition and disease including weight control, diabetes, cardiovascular disease, and cancer are discussed. In addition, this course applies computerized nutrition analysis software for menus and diets, as well as to evaluate nutritional information for the public. *Enrollment is restricted to students in the Culinary Arts AAS and Certificate, as well as the Hospitality and Tourism Management AAS and Certificate programs. Prerequisite: Eligibility for enrollment into ENGL 101 and 003, or 007.*

**HTMT 110 - Menu Design and Marketing** 3:3:0

Covers the principles of marketing as they apply to menu design and product promotion in a hospitality operation. This course addresses the principles and practices used to develop a variety of menus for a specific market group, for merchandising food and beverages, and for physical menu design, pricing, and promotion.

**HTMT 122 - Food Purchasing, Receiving, and Storing** 3:3:0

Addresses the grades and specifications required to assure quality of meats, vegetables, fruits, and seafood. This course also covers the procedures for receiving and storing foods so as to retain maximum levels of quality and nutritive value. *Prerequisite: CULI 102 with a grade of C or higher.*

**HTMT 125 - Dining Room Management** 3:3:0

Introduces basic dining-room operations. This course specifically addresses dining-room management, facility design, types of food service operations, sanitation and safety, leadership and supervision/personnel responsibilities, labor and revenue control, legal issues, equipment, customer relations, menu development, table set-ups, and napkin folding. In addition, methods of American, French, and Russian service are addressed.

**HTMT 154 - Supervisory Housekeeping** 3:3:0

Encompasses the responsibilities and managerial functions of executive housekeepers. This course specifically covers staffing, managing supplies, and solving engineering and maintenance problems. Attention is also given to productivity and performance standards, as well as communications with the front office.

**HTMT 201 - Tourism: Theories & Practices** 3:3:0

Covers theoretical and practical tourism-related concepts. Students are able to apply these concepts to the travel and tourism industry through case study examinations and real-life scenarios.

**HTMT 202 - Principles of Travel Selling** 3:3:0

Discusses and demonstrates successful techniques for selling travel products to business and pleasure travelers. This course focuses on techniques for selling air, hotel, car rental, rail, cruise, tour, and other travel-related products.

**HTMT 203 - Group Travel Planning** 3:3:0

Focuses on the multitude skills involved in planning travel for groups. This course specifically addresses group dynamics, itinerary planning, rate negotiation, marketing, profitability, and customer service. *Prerequisite: HTMT 202 with a grade of C or higher.*

**HTMT 212 - Front Office Operations and Management 3:3:0**

Covers the principles encompassing the organization and operation of public lodging facilities. This course addresses front office management and procedures and front-desk coverage duties including public relations, sales, cash-control procedures, services to guests, accounting, and emergency procedures.

**HTMT 213 - Marketing: Hospitality and Tourism 3:3:0**

Offers an overview of hospitality and tourism marketing theories, principles, and concepts as they are applied to the industry. The course focuses on a strategic practical approach for effectively marketing hotels, restaurants, tour operations, and travel destinations. The following are also included: marketing to business travelers, leisure travelers, meeting planners, and special segments.

**HTMT 225 - Destination Geography 3:3:0**

Covers international travel destinations, attractions, and accommodations. This course emphasizes major ports of entry and transportation hubs throughout the world with special attention to climate, physical, social, and economic conditions. Discussion of visitor documentation is also included.

**HTMT 231 - Cost Control: Food, Beverage, and Labor 3:3:0**

Covers the principles and procedures involved in an effective food and beverage control system, including standards determination, the operating budget, cost-volume-profit analysis, income and cost control, menu pricing, theft prevention, labor cost control, and computer applications.

**HTMT 251 - Hospitality Supervision 3:3:0**

Addresses issues in management as they relate to the hospitality field. The course covers responsibilities of the supervisor to employees, leadership, communication, motivational skills, hospitality organizational management, and current issues in hospitality human resources management.

**HTMT 269 - Hospitality Industry Computer Systems 3:3:0**

Covers the information processing needs of hospitality and tourism operations. This course discusses the hardware, specialized software, and generic applications employed in hospitality management. *Prerequisite: CIS 105.*

**HTMT 270 - Convention and Events Management 3:3:0**

Encompasses the scope and segmentation of the convention/conference and events industry. This course discusses marketing strategies and the development of planning events. In addition, this course addresses the design

and implementation of corporate, association, and other meeting planning needs. Specialized conference management software is also employed.

**HTMT 277 - Hospitality and Tourism in London and Paris 3:3:0**

Provides students with the opportunity to travel abroad and gain exposure to the complexities surrounding the hotel, restaurant, and travel and tourism operations outside the United States.

**HTMT 278 - Hospitality & Tourism Management Co-Op Seminar & Field Experience 3:1:40**

Provides students with the opportunity to obtain full-time employment within an approved hospitality facility for a total of 400 hours in ten weeks. Their cooperative work experience is supplemented by one-hour weekly seminars on campus. The student is able to gain experience working within the various areas of the facility including check-in, check-out, night audit, housekeeping, operations management, and sales and marketing. *Enrollment is restricted to students in the Hospitality and Tourism Management AAS and Certificate programs. Prerequisite: HTMT 101, 154, 212, and 213 with grades of C or higher.*

**HTMT 279 - Travel Reservation Systems 3:3:0**

Provides students with experience in the operation of two widely used airline reservation systems. This course allows students to use the system to display flight schedules, arrange itineraries, access fares, assign seats, generate tickets, and create passenger records. Making hotel reservations and arranging car rentals are also discussed. *Enrollment is restricted to students in the Hospitality and Tourism Management AAS and Certificate programs. Prerequisite: CIS 105; HTMT 225 and 201.*

**HUMAN SERVICES**

**HUMS 100 - Introduction to Human Services 3:3:0**

Provides students with the essential information needed to choose whether or not to pursue a career in the Human Services field. This course examines all of the fundamental components of a typical community and allows students to apply their classroom knowledge through their observation of a local community's social, political, and economic conditions, as well as, the implications of social programming. In addition, students must meet with local agency representatives. *Students must have reliable transportation to meet course requirements. In addition, students receive information about the Pennsylvania Child Abuse History Clearance, the FBI Check, and the PA State Police Criminal Record Check. Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading*

*courses required by the College Placement and Testing Program.*

**HUMS 108 - Drugs and Alcohol: Use and Abuse 3:3:0**

Introduces students to alcohol and drug use within both a historical and social context. This course exposes students to the models of prevention and the role that community resources have in providing treatment services. This course is particularly relevant for individuals pursuing careers in human services, corrections, and law enforcement.

**HUMS 109 - Drugs and Alcohol: Issues and Treatment 3:3:0**

Focuses on the current issues and treatment approaches used in the drug and alcohol field. This course addresses the common effects of mood-altering drugs and major public policy issues, as well as provides an overview of the social and legal regulatory institutions and the U.S.'s formal drug control system. In addition, students are introduced and able to discuss current models of prevention and treatment.

**HUMS 120 - Social Welfare Programs and Policies 3:3:0**

A research and writing course, with emphasis on computer skills. The course surveys historical developments in and current systems of social welfare services, emphasizing changing attitudes of society. Included in the course are causality theories, funding, policy developments, and current social problems including the social response to these. *Prerequisite: ENGL 101 and HUMS 100 with a grade of C or higher; and GPA of 2.0 or higher.*

**HUMS 121 - Skills and Methods in Human Service I 3:3:0**

Basic interviewing skills, with emphasis on listening, responding, discussing difficult topics, and resolving conflicts. Self-awareness and ethics in the practice of human services are emphasized. *Prerequisite: ENGL 101 and HUMS 100 with a grade of C or higher; and GPA of 2.0 or higher.*

**HUMS 122 - Skills and Methods in Human Services II 3:3:0**

Discusses case management procedures from intake to termination that includes individual goal planning, development of service plans, referrals, and record keeping. Students have the opportunity to apply case management skills to several high-risk client populations. *Prerequisite: HUMS 100 with a grade of C or higher.*

**HUMS 200 - Group Work Practice 3:3:0**

Introduces group work practice methods. Designed to teach students the knowledge and practice skills necessary for group work practice. Emphasis is on basic group theory and process and effective practice skills. Students are acquainted with many uses of task and treatment groups in a broad range

of settings. *Prerequisite: HUMS 121 with a grade of C or higher.*

**HUMS 206 - Human Development in a Social Environment 3:3:0**

Examines the ecological model, which describes the effects of the social environment on human development and the reciprocal relationship between the individual and that environment. Emphasis is placed on the cultural, religious, racial, and ethnic diversity of the populations served by human service professionals. Special focus is given to the uniqueness of the individual when determining the types of interventions needed for the client. Evaluation and assessment of problems faced by clients of human services are also discussed. *Prerequisite: HUMS 100 and ENGL 101 with a grade of C or higher; and minimum GPA of 2.0 or higher.*

**HUMS 215 - Field Work Practicum 4:2:18**

Provides students with a cumulative learning experience. This course allows students to work in a human services agency for a total of 255 hours. All students are under the direct supervision of a Bachelor's or Higher Level Human Service Professional. In this environment, students learn to apply knowledge, skills, and attitudes acquired in core Human Service courses - to work with clients within a human services agency. Students also meet with the instructor to integrate classroom learning with job performance. Emphasis is placed on students assuming the Human Service Worker role in working directly with clients. Students complete assignments that focus on the human services agency of where they are completing their 255 hours, as an organization, emphasizing their work with agency staff, and goal planning. A course fee is required. *All students accepted into this component of the program must submit to a Pennsylvania Child Abuse History Clearance, FBI Check, and a PA State Police Criminal Record Check. Enrollment is restricted to students in the Human Services AA and the Social Services AA degree. Prerequisite: General Services Track: HUMS 120, 122, and 206 or 100 with grades of C or higher. Drug & Alcohol Track: HUMS 108, 216, 217, 218, and 219 with grades of C or higher; and Permission of the Instructor.*

**HUMS 216 - Crisis and Brief Intervention Counseling 3:3:0**

Introduces students to the fundamental concepts, theories, strategies, and skills needed to comprehend and conduct effective crisis and brief intervention counseling. This course focuses on the prevalent types of crisis commonly encountered in community-based settings that serve individuals with drug and alcohol issues. Through class discussions, role playing, and films, students are given opportunities to develop the skills necessary to be effective

drug and alcohol counselors. The skills developed in this course are crucial for work in the human services, corrections, and law enforcement fields.

**HUMS 217 - Addictions Counseling Interventions 3:3:0**

Introduces counseling approaches in the treatment of substance use disorders, with an emphasis on practical applications in the addictions field, such as Motivational Interviewing (MI) and Solution-Focused Therapy (SFT). Students are provided training in core counseling skills, as well as in therapy models proven to be efficacious with individuals in addictions treatment. In addition, the course incorporates experiential and problem-solving components to assist students in developing conceptual frameworks and counseling skills. The skills developed in this course are crucial for work in the human services, corrections, and law enforcement fields.

**HUMS 218 - Co-Occurring Disorders 3:3:0**

Provides a comprehensive overview of current theories, models, and principles pertinent to the identification, description, and delineation of Co-Occurring Disorders. The course examines concepts from the Diagnostic Statistical Manual (DSM) that can be applied to clinical concerns and situations arising in the addictions/mental health treatment field. Students receive a knowledge-based skill set to identify symptoms and behaviors that constitute the basis for diagnostic judgments.

**HUMS 219 - Drug and Alcohol Screening and Assessment 3:3:0**

Covers drug and alcohol screening and assessments of both adolescents and adults. This course emphasizes emergent care issues, screening options, determining the appropriate level of care, interviewing techniques, and reviewing the Diagnostic Statistical Manual (DSM) criteria for substance use disorders, crisis intervention techniques, relapse planning, and confidentiality regulations.

**HUMS 220 - Drug and Alcohol Foundational Counseling Skills 3:3:0**

Emphasizes drug and alcohol counseling techniques and strategies. This course covers individual and group counseling skills, Cognitive Behavioral Therapy (CBT), Motivational Interviewing (MI), Solution-Focused Brief Therapy (SFT), the 12-step approach, family counseling skills, emergent care issues within counseling, and working with special populations in both individual and groups dynamics. *Prerequisite: HUMS 108, 216, 217, 218, and 219 with grades of C or higher.*

**HUMANITIES**

**HUM 101 - Introduction to Humanities 3:3:0**

Broadens the student's perception of and appreciation for the humanities of the world by exploring the contribution of the arts to the individual and to society. Emphasis is given to developments in such areas as the visual, performing, and literary arts. Concepts basic to a systematic understanding of the humanities in relation to everyday life are examined through a variety of media and aesthetic experiences. *Prerequisite: Eligibility for enrollment into ENGL 101; or permission of the Instructor. (H&A)*

**HUM 101H - Honors Introduction to Humanities 3:3:0**

Broadens the students' perception of an appreciation for the humanities of the world by exploring the contribution of the arts to the individual and to society. Emphasis is given to developments in such areas as the visual, performing, and literary arts. Concepts basic to a systematic understanding of the humanities in relation to everyday life are examined through a variety of media and aesthetic experiences. Using a seminar or discussion-based approach, this course encourages independent, creative and critical inquiry and prepares students for the practical application of information by emphasizing effective research strategies and technologies congruent with the field of study. *Prerequisite: Completion of all developmental reading and writing courses required, as a result of the College Testing and Placement Program. (H&A)*

**HUM 114 - Chinese Arts and Culture 3:3:0**

An overview of Chinese culture as revealed in religion, art, literature, drama, music and film.

**HUM 115 - Architecture: Aesthetics and History 3:3:0**

Provides a chronological survey of architectural development throughout the world with an emphasis on how differing geographic, climatic, religious, cultural, philosophical and social influences affected the design of structures. This course also seeks to create an awareness and an appreciation of the built environment as it examines architecture as both cultural phenomenon and an artistic and technological achievement. Function, structural principles, and elements of design are also covered. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program. (H&A)*

**HUM 116 - Introduction to Lesbian and Gay Studies 3:3:0**

An introductory interdisciplinary course in lesbian and gay studies. Emphasis is on literature, popular culture, and psychological and sociological perspectives in the field. *Prerequisite: Eligibility for enrollment into ENGL 101 and*

completion of any reading courses required by the College Testing and Placement Program.

**HUM 117 - Architecture Through the Ages: 3:3:0  
Prehistory to the Gothic Period**

Provides chronological survey of architectural development from Prehistory to the Gothic period. The course discusses architecture throughout the world with an emphasis on the relationship between architecture and geographic, climatic, religious, cultural, economic, philosophical and social influences. In addition, this course seeks to create an awareness and an appreciation of the built environment through the examination of architecture as both a cultural phenomenon and an artistic and technological achievement. Function, structural principles, and elements of design are also covered. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.* (H&A)

**HUM 118 - Architecture Through the Ages: 3:3:0  
Renaissance Period to the Present**

Provides a chronological survey of architectural development from the Renaissance period to the present. This course discusses architecture throughout the world with an emphasis on the relationship between architecture and geographic, climatic, religious, cultural, economic, philosophical and social influences. In addition, this course seeks to create an awareness and an appreciation of the built environment through the examination of architecture as both a cultural phenomenon and an artistic and technological achievement. Function, structural principles, and elements of design are also covered. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.* (H&A)

**HUM 201 - World Mythology 3:3:0**

A cross-cultural consideration of the great myths of the world, including creation, fertility, and hero myths. The myths will be studied as unique expressions of individual cultures and also as universal ideas. *Prerequisite: Eligibility for enrollment into ENGL 101, or permission of the Instructor.* (H&A)

**HUM 201H - Honors World Mythology 3:3:0**

A cross-cultural consideration of the great myths of the world, including creation, fertility, and hero myths. The myths will be studied as unique expressions of individual cultures and also as universal ideas. Using a seminar or discussion-based approach; this course encourages independent, creative and critical inquiry and prepares students for the practical application of information by emphasizing effective research strategies and technologies congruent with the field of study. *Prerequisite: Completion of*

all developmental reading and writing courses required as a result of the College Testing and Placement Program. (H&A)

**HUM 202 - Classical Mythology 3:3:0**

Surveys the classical myths of Greece and Rome, as well as, the foundation narratives of Western culture, literature, art and discourse. *Prerequisite: Eligibility for ENGL 101 through the College Testing and Placement Program.* (H&A)

**HUM 202H - Honors Classical Mythology 3:3:0**

Surveys the classical myths of Greece and Rome, as well as, the foundation narratives of Western culture, literature, art and discourse. Using a seminar or discussion-based approach; this course encourages independent, creative and critical inquiry and prepares students for the practical application of information by emphasizing effective research strategies and technologies congruent with the field of study. *Prerequisite: Completion of all developmental reading and writing courses required as a result of the College Testing and Placement Program.* (H&A)

**HUM 216 - China Study Tour 3:3:0**

Chinese culture and arts through reading, attending lectures, attending live Chinese opera and dance performances, and through guided study tours of the Great Wall of China, Tiananmen Square and the Forbidden City, the Temple of Heaven, the Terra Cotta Soldiers of the First Emperor of China, Ming Gardens, and more. The course covers Chinese traditional arts, painting, calligraphy, architectural design, performing arts, folklore, and the three dominant philosophic and religious beliefs, Confucianism, Taoism, and Buddhism.

**HUM 228 - Humanities in London/Paris 3:3:0**

A survey of the basic genres of the humanities - art, architecture, literature, music and theatre, set in their philosophical, historical and cultural context.

**HUM 229 - Italian Art, Architecture and History 3:3:0**

A travel course, which explores the art, architecture and history of Italy from Classical Rome to the late Baroque era. These are the arts and ideas that shaped Western civilization. Students explore Classical and High Renaissance/Baroque style in Rome and the Vatican, Medieval and Early Renaissance style in Florence and the Baroque in Venice.

**IMT – MECHATRONICS**

**IMT 106 - Mechanical Technology I 3:2:2**

Knowledge and skills required by technicians in industry. Course covers personal industrial safety, OSHA requirements, hardware, safe use of hand tools, shop and measuring tools, mechanical and engineering drawings,

blueprint schematics, basic metalwork, and machine shop skills. A course fee is required.

**IMT 108 - Power Transmission 4:3:3**

Knowledge and skills required by technicians in industry. Course covers gears, reducers, bearings and seals, drive belts, drive chains, alignment, adjusting speeds, lubrication, shaft couplings and alignment, and machine set-up. A course fee is required.

**IMT 110 - Fluid Power 4:3:3**

Knowledge and skills in fluid power required by technicians in industry. Course covers basic fluid power theory and industrial applications of pneumatics and hydraulics. Reading schematics, building fluid power circuits and troubleshooting circuit faults are also covered. Students will understand the different types of process pumps, their application, installation, operation, and maintenance. A course fee is required.

**IMT 291 - Mechatronics Cooperative Work Experience 3:0:15**

Offers students the chance to receive on-the-job training with an industrial maintenance employer for a minimum of 15 hours per week. This faculty-monitored course allows students to learn and practice technical skills while on-the-job. *Prerequisite: Completion of at least 24 credit hours in IMT-Mechatronics courses with grades of C or higher, or permission of the Instructor.*

**INDEPENDENT ELECTRICAL CONTRACTOR**

**IEC 110 - Electrical Trade I 4:3:2**

Provides the theoretical and laboratory concepts needed by first-year, first-semester IEC apprentices. Paralleling their on-the-job training, students are introduced to topics that include hand tools, first aid, electrical installations, applied lighting, ground-fault switches and conductors: their sizes, types, and applications. *Enrollment in this course is restricted to students who are approved through the IEC apprenticeship selection process.*

**IEC 120 - Electrical Trade II 4:3:2**

Provides the theoretical and laboratory concepts needed by first-year, second-semester IEC apprentices. Paralleling their on-the-job training, students are introduced to topics that include residential circuits, water pumps and heaters, electrical outlets, low-voltage systems, alarm systems, service entrances, and remote control systems. *Enrollment in this course is restricted to students who are approved through the IEC apprenticeship selection process. Prerequisite: IEC 110.*

**IEC 130 - Electrical Trade III 4:3:2**

Provides the theoretical and laboratory concepts needed by second-year, first-semester IEC apprentices. Paralleling their on-the-job training, students are introduced to topics that include an introduction to AC circuits, resistive-inductive AC circuits, capacitance, series and parallel resistive-capacitive circuits, single and three phase transformers, and measuring instruments. *Enrollment in this course is restricted to students who are approved through the IEC apprenticeship selection process. Prerequisite: IEC 120.*

**IEC 140 - Electrical Trade IV 4:3:2**

Provides the theoretical and laboratory concepts needed by second-year, second-semester IEC apprentices. Paralleling their on-the-job training, students are introduced to topics that include DC generators and motors, single-phase and three-phase motors, alternators, sizing and troubleshooting motors, and general wiring techniques for home, commercial buildings, industrial plants, and health care facilities. Enrollment in this course is restricted to students who are approved through the IEC apprenticeship selection process. *Prerequisite: IEC 130.*

**IEC 150 - Electrical Trade V 4:3:2**

Provides the theoretical and laboratory concepts needed by third-year, first-semester IEC apprentices. Paralleling their on-the-job training, students are introduced to topics that include first aid and CPR review, blueprint reading for the electrical trade, multi-family construction, commercial construction, motor and transformer review, and grounding conductors and equipment. *Enrollment in this course is restricted to students who are approved through the IEC apprenticeship selection process. Prerequisite: IEC 140.*

**IEC 160 - Electrical Trade VI 4:3:2**

Provides the theoretical and laboratory concepts needed by third-year, second-semester IEC apprentices. Paralleling their on-the-job training, students are introduced to topics that include electrical quantities and circuits, logic and line diagrams, motor controls, contractors, starters, and solenoids, reversing circuits, power distribution systems, and basic fiber-optic technology. *Enrollment in this course is restricted to students who are approved through the IEC apprenticeship selection process. Prerequisite: IEC 150.*

**IEC 170 - Electrical Trade VII 4:3:2**

Provides the theoretical and laboratory concepts needed by fourth-year, first-semester IEC apprentices. Paralleling their on-the-job training, students are introduced to topics that include solid-state control devices, electromechanical and solid-state relays, photoelectric and proximity controls, programmable controls, AC reduced voltage starters, and preventative maintenance and troubleshooting. *Enrollment in*

*this course is restricted to students who are approved through the IEC apprenticeship selection process. Prerequisite: IEC 160.*

**IEC 180 - Electrical Trade VIII 4:3:2**

Provides the theoretical and laboratory concepts needed by fourth-year, second-semester IEC apprentices. Paralleling their on-the-job training, students are introduced to topics that include fire-protection signaling systems and devices, NEC and related standards, switchboards and panel boards, over-current protectors, branch and feeder systems, motor compressors, safety in hazardous locations, and load calculations. *Enrollment in this course is restricted to students who are approved through the IEC apprenticeship selection process. Prerequisite: IEC 170.*

**INDUSTRIAL AUTOMATION**

**IA 201 - Motors and Controls I 4:3:2**

Introduces students to the basics of electric motors, control circuits, and troubleshooting. This course covers AC and DC motor theory and application as well as motor control devices and circuits. With a hands-on focus, students gain functional competencies in the design, wiring, and troubleshooting of basic motor control circuits. Basic AC and DC motors, NEMA (National Electrical Manufacturers Association) and IEC (International Electrotechnical Commission) motor starters, motor wiring, control circuits, motor control devices, and frequency drives are addressed. A course fee is required. *Prerequisite: ELOC 153 with a grade of C or higher.*

**IA 202 - Motors and Controls II 4:3:2**

Advanced motors and controls. Content includes advanced DC and AC motors, design and analysis of control circuits, solid-state controls, and programmable controls. Students design and connect control circuits for specific applications. A course fee is required. *Prerequisite: IA 201 with a grade of C or higher, or permission of the Discipline Lead.*

**IA 205 - Computer Numerical Control - CNC 3:2:3**

Covers the application of computer control of manufacturing methods. This course addresses how numerical control (NC) and computer numerical control (CNC) machining processes are integrated with computer-aided drafting techniques. Students are taught to import exchange files from CAD into a CAM program to create tool paths. A course fee is required. *Prerequisite: CAD 154 and MDES 207 with grades of C or higher.*

**IA 208 - PLC's and Automation 2:1:3**

Addresses ladder logic and its use in programming industrial programmable logic controllers (PLC's). This course covers such topics as the use of using discrete Input/Output (I/O),

timers, counters, and sequencers to control automated systems for manufacturing applications with the focus of instruction being on Allen Bradley PLC's using AB software. A course fee is required. *Prerequisite: ELEC 100 or ELOC 153 with a grade of C or higher.*

**IA 210 - Industrial Robotics I 3:2:3**

Introduces students to the programming and maintenance of industrial robotic systems. This course covers the history and applications of industrial robots, safety, system anatomy, spatial coordinate systems, and general maintenance. Through hands-on studies using Yaskawa Motoman industrial robots, students develop competency in operation and basic programming for tasks including material handling and welding. A course fee is required.

**IA 211 - Industrial Robotics II 3:2:3**

Focuses on maintenance, programming, and application considerations. This is an advanced industrial robotics course in which students develop competencies through extensive hands-on studies using Yaskawa Motoman and ABB industrial robots. System configuration, maintenance, and troubleshooting are covered as well as application specific topics such as tooling and advanced programming. A course fee is required. *Prerequisite: IA 210.*

**IA 213 - PLCs and Automation II 3:2:3**

Provides students with the essential knowledge of industry standard IEC61131-3 programming languages and automated systems. Students are taught data standards and programming languages as set forth by the IEC (International Electrotechnical Commission), as well as HMI (Human Machine Interface) programming. Students develop and apply skills and knowledge through project-oriented work that employs tasks and scenarios common within the industry. A course fee is required. *Prerequisite: IA 208 with a grade of C or higher.*

**IA 221 - Sensor Technology 3:2:2**

Provides an advanced study in electrical controls for automation and artificial intelligence systems. This course teaches students about the types, characteristics, installation, and applications of a variety of industrial sensors, which include, temperature sensors, inductive sensors, photoelectric sensors, positioning sensors, and vision systems. Laboratory activities include wiring control circuits that use sensor technology, tuning Proportional Integral Derivative (PID) loops, and programming controllers. A course fee is required. *Prerequisite: ELOC 153 with a grade of C or higher. Or, Permission of the Discipline Lead.*

## **INTERNSHIPS**

### **INTN 291 - Internship Seminar 3:3:0**

Requires students to complete a minimum of 135 hours of verified field experience at an internship site approved by the course instructor. The course emphasizes experiential learning, bolsters professional development, and promotes the application of skills in the workplace. Through a combination of field experience and virtual learning, students create a career development plan, strengthen interviewing skills, and apply professionalism in the workplace. Students are required to attend two one-on-one meetings - one at the beginning of the course and one at the end - with the instructor. This course is available to all students, but may not be used in the place of any required program internships, co-ops, or practicums. *Prerequisite: Student must obtain signature of the Instructor, have a GPA of 2.5 and have earned at least 18 college-level credits.*

## **LIBRARY SERVICES**

### **LIBR 110 - Introduction to Information Literacy 1:1:0**

Students explore information resources and develop information literacy skills. Emphasis is on locating, evaluating, and presenting information in an academic environment. This course prepares students for the practical application of information literacy across the curriculum.

### **LIBR 210 - The Research Process 1:1:0**

The concepts and methods for determining information needs and planning efficient strategies to locate information for academic research. Emphasis is on the identification, online and manual retrieval, and evaluation of print and non-print resources. This course is designed for students taking courses that require a research project or component. The course emphasizes resources available to both traditional and distance-learning students.

## **MANAGEMENT**

### **MGMT 130 - Introduction to Health Care Management 3:3:0**

Provides an introduction to the arena of health care management. The course reviews the evolution and current status of health care delivery and introduces the student to the concepts of health care leadership including cultural diversity, electronic records, HIPAA, and strategies for successful oversight of a department or unit. Through the examination of management topics and healthcare situations, the student is able to explore the skills and knowledge needed to be successful in a diverse healthcare environment. *Prerequisite: Eligibility for enrollment into ENGL 003 as identified by the College Testing and Placement program.*

### **MGMT 201 - Principles of Management 3:3:0**

Introduces students to the primary functions of management and management theory. This course covers the knowledge and skills needed for planning, organizing, leading, and controlling modern organizations. Students are able to discuss current events and issues - ethics and social responsibility, organizational culture, global management, and technology - and the impact experienced by managers and management. *Prerequisite: Eligibility for enrollment into ENGL 003 as identified by the College Testing and Placement program.*

### **MGMT 203 - Human Resources Management 3:3:0**

Covers the planning of personnel requirements. The course topics include: recruitment, selection, training and development; job evaluation, wage and salary administration; employee benefits and services; labor relations, career development, safety and health; performance appraisal, disciplinary action, and employee morale; international human resources management. *Prerequisite: Eligibility for enrollment into ENGL 003, or 007, as identified by the College Testing and Placement Program.*

### **MGMT 204 - Human Relations in Business 3:3:0**

Introduces students to the psychological and sociological aspects of human relations as they relate to management situations and organizational performance. This course allows students to develop skills in managing human behavior in organizations in such areas as: effective leadership, teambuilding, human motivation, managing change and conflict, technology, ethics, interpersonal and intergroup communication, and managing cultural diversity. *Prerequisite: Eligibility for enrollment into ENGL 003 as identified by the College Testing and Placement program.*

### **MGMT 221 - Small Business Development & Management 3:3:0**

Presents information about the environment of small business. Students are able to identify the initial problems and issues with starting a small business, buying an existing business, or with obtaining a franchise. This course also addresses the management, marketing, and business skills necessary to operate a small venture; the international/global operations of small enterprises; and the cyberspace (e-Commerce) operations of small business. *Prerequisite: Eligibility for enrollment in ENGL 003 as identified by the College Testing and Placement program.*

### **MGMT 226 - Principles of Leadership 3:3:0**

Introduces the evolution of leadership theorists and theories including behavioral, situational, and contingency schools of thought. Students discuss the various leadership styles and attributes of effective and ineffective leaders. They are able to discover the relationship between effective leadership and

teamwork, organizational culture, diversity, ethics, interpersonal communications, organizational performance and quality, technology, conflict resolution, and problem solving. *Prerequisite: Eligibility for enrollment into ENGL 003 as identified by the College Testing and Placement program.*

### **MGMT 226H - Honors Principles of Leadership 3:3:0**

Introduces the evolution of leadership theorists and theories including behavioral, situational, and contingency schools of thought. Students discuss various leadership styles and attributes of effective and ineffective leaders. They are able to discover the relationship between effective leadership and teamwork, organizational culture, diversity, ethics, interpersonal communications, organizational performance and quality, technology, conflict resolution, and problem solving. Using a seminar or discussion-based approach, this course encourages independent, creative and critical inquiry and prepares students for the practical application of information by emphasizing effective research strategies and technologies congruent with the field of study. *Prerequisite: Completion of all developmental reading and writing courses required, as a result of the College Testing and Placement Program.*

### **MGMT 227 - Project Management 3:3:0**

Covers the basic methods of handling projects from start to finish, as well as the fundamental steps and functions of project management. The course emphasizes hands-on activities encompassing analysis that determines the required parts, materials, tools or equipment, and manpower required to complete a project. In addition, the course covers estimates of material and equipment needs, manpower time estimates, purchase orders, worksheet development, and sequential scheduling activities. *Prerequisite: Eligibility for enrollment into ENGL 003 as identified by the College Testing and Placement program.*

## **MARKETING**

### **MKTG 201 - Principles of Marketing 3:3:0**

The functions involved in the marketing of consumer and industrial goods to their users. Emphasis is placed upon management's development of marketing strategies concerning product, place, promotion, and price. *Prerequisite: Completion of ENGL 002 with a grade of C or higher, or placement through the College Testing and Placement program into ENGL 003 or higher.*

### **MKTG 205 - Visual Merchandising 3:3:0**

Covers the fundamental techniques of presenting and selling merchandise. Students are taught to recognize the significance that these techniques have in attracting

consumers. Emphasis is placed on branding a store image through the use of color, fixtures, and other display materials.

### **MKTG 212 - Professional Selling 3:3:0**

Introduces the principles of professional selling. This course covers the many skills pertinent to everyday life that result in effective interactions with others. Emphasis is on the four components of the consultative selling strategy - developing a relationship, product, customer, and presentation. *Prerequisite: Completion of ENGL 002 with a grade of C or higher, or placement through the College Testing and Placement program into ENGL 003 or higher.*

### **MKTG 216 - Retail Buying 3:3:0**

Explores the typical purchasing responsibilities of a retail buyer, such as identifying and understanding potential customers, conducting market research, developing sales forecasts, creating merchandising plans, exploring retail buying trends, and using Excel spreadsheets for common retail buying calculations. *Prerequisite: Eligibility for enrollment into ENGL 003, 007, or 057 as identified by the College Testing and Placement Program.*

### **MKTG 218 - Advertising 3:3:0**

Determining appropriations; allocating among media; advertising layout and copy; measuring advertising effectiveness; the role of advertising in our economy. *Prerequisite: Completion of ENGL 002 with a grade of C or higher, or placement through the College Testing and Placement program into ENGL 003 or higher.*

### **MKTG 220 - Introduction to Sports Marketing 3:3:0**

Takes students on a step-by-step journey through the exciting world of sports marketing. Students learn about the key functions of marketing and how these functions are applied to the sports industry. The course evaluates sports and entertainment on a local, national, and global level. Guest speakers, case studies, and computer integrated activities are incorporated into the class. *Prerequisite: Eligibility for placement into ENGL 003.*

### **MKTG 235 - Digital Media Marketing 3:3:0**

Examines the process of developing, implementing, and evaluating strategies to successfully market products and services using digital marketing tools. The course covers the similarities and differences between the digital economy and traditional marketing practices, as well as industry-specific terminology. Students learn how to integrate digital media into marketing and business processes. Topics also include customer relationship development and retention marketing, email marketing campaigns, website usability, search engine optimization, social media, and mobile marketing. *Prerequisite: Eligibility for enrollment into ENGL 003, 007,*

or 057 as identified by the College Testing and Placement Program.

## **MATHEMATICS**

### **MATH 008 - Pre-College Mathematics I 2:2:0**

Reviews the basic operations of arithmetic and introduces students to algebraic expressions. A course fee is required. *Co-requisite: ENGL 001 for students required to take reading by the College Testing and Placement Program.*

### **MATH 010 - Pre-Algebra 4:4:0**

Designed to review the basic operations of arithmetic and introduce algebraic representation and applications. *Prerequisite: MATH 005 with a grade of C or higher. Co-requisite: ENGL 001 for students required to take reading by the College Testing and Placement Program. A course fee is required.*

### **MATH 020 - Beginning Algebra 3:3:0**

Designed to develop basic algebraic skills through a study of fundamental properties of numbers: fundamental operations in arithmetic and algebra, including polynomials and linear equations. *Prerequisite: Placement through the College Testing and Placement Program or completion of MATH 007 or 010 with a grade of C or higher. Co-requisite: ENGL 001 A course fee is required.*

### **MATH 022 - Pre-College Mathematics II 2:2:0**

Develops and strengthens algebraic skills: linear equations and inequalities in one variable, ratios and proportions. A course fee is required. *Prerequisite: MATH 008 or 010 with a grade of C or higher. Co-requisite: ENGL 001 for students required to take reading by the College Testing and Placement Program.*

### **MATH 033 - Pre-College Mathematics III 2:2:0**

Develops and strengthens algebraic skills in the following areas: linear equations in two variables, relations, functions, and systems of linear equations. A course fee is required. *Prerequisite: Placement through the College Testing and Placement Program or completion of MATH 022 or 020 with a grade of C or higher.*

### **MATH 044 - Pre-College Mathematics IV 2:2:0**

Develops and strengthens algebraic skills in the following areas: polynomials, factoring, rational expressions and functions. A course fee is required. *Prerequisite: Placement through the College Testing and Placement Program. Pre/Co-requisite: MATH 033 with a grade of C or higher.*

### **MATH 045 - Pre-College Algebra 6:6:0**

Combines the topics of MATH 020 and MATH 051 into a single course. A course fee is required. *Prerequisite: Placement through the College Testing and Placement Program or completion of MATH 007 or 010 with a grade of C or higher.*

### **MATH 051 - Intermediate Algebra 3:3:0**

Designed to augment the knowledge of the student who has limited background in algebra: fundamental operations, special products and factors, functions and fractional equations, exponents, radicals, quadratic equations. A course fee is required. *Prerequisite: Placement through the College Testing and Placement Program or completion of MATH 020 with a grade of C or higher.*

### **MATH 055 - Pre-College Mathematics V 2:2:0**

Develops and strengthens algebraic skills in the following areas: absolute value equations and inequalities, radical equations and functions, quadratic equations and functions. A course fee is required. *Prerequisite: Placement through the College Testing and Placement Program or completion of MATH 033 with a grade of C or higher. Pre/Co-requisite: MATH 044 with a grade of C or higher.*

### **MATH 090 - Building Math Proficiency 3:3:0**

Reviews the basic skills of arithmetic and/or algebra to prepare students for proper placement in future mathematic courses. Each student is able to work in an individualized, computer-driven, instructor-guided program in mathematics and participate in-group, problem-solving activities. A course fee is required. *Prerequisite: Placement through the College Testing and Placement Program.*

### **MATH 100 - College Mathematics for Business 3:3:0**

Covers the basic operations of arithmetic with emphasis on percentage, trade and cash discounts, merchandising, depreciation, property and sales taxes, payroll, income tax, insurance, simple and compound interest, notes, credit and time-buying, and basic descriptive statistics. *Prerequisite: Placement through the College Testing and Placement Program or completion of MATH 008 and 022 (or MATH 010) or MATH 007 with grades of C or higher. (MATH)*

### **MATH 103 - College Algebra 3:3:0**

Covers the fundamental algebraic operations, exponents and radicals, systems of equations, higher degree equations, logarithms, matrices, and inequalities. *Prerequisite: Placement through the College Testing and Placement Program or completion of MATH 033, 044, & 055 (or MATH 051) or MATH 045 with a grade of C or higher. (MATH)*

**MATH 104 - Trigonometry 3:3:0**  
Examines trigonometric functions, relationships, and graphs. This course includes identities and trigonometric equations. In addition, complex numbers and DeMoivre's theorem are included. *Prerequisite: MATH 033, 044, & 055 (or MATH 051), or MATH 045 with grades of C or higher. Placement through the College Testing and Placement Program.* (MATH)

**MATH 110 - Applied Calculus for Business 4:4:0**  
Designed for students in various business or social science programs. Topics to be considered include quadratic, polynomial, rational, exponential and logarithmic functions, differential calculus of a single variable and of several variables, techniques of integration. Numerous applications to business and economics will be considered. *Prerequisite: MATH 103 with a grade of C or higher.* (MATH)

**MATH 111 - Principles of Mathematics 3:3:0**  
Addresses the general transfer or degree requirements of those students pursuing an education in fields other than Mathematics, Physical Science, and Engineering. This course covers an Introduction to Number Theory, Geometry, Fundamentals of Logic and Sets, Descriptive Statistics, and Introduction to Probability. *Prerequisite: MATH 008 & 022 (or MATH 010) with a grade of C or higher or placement through the College Testing and Placement Program.* (MATH)

**MATH 111H - Honors Principles of Mathematics 3:3:0**  
Addresses the general transfer or degree requirements of those students pursuing an education in fields other than Mathematics, Physical Science, and Engineering. This course covers an Introduction of Number Theory, Geometry, Fundamentals of Logic and Sets, Descriptive Statistics, and Introduction to Probability. Using a seminar or discussion-based approach, this course encourages independent, creative and critical inquiry and prepares students for the practical application of information by emphasizing effective research strategies and technologies congruent with the field of study. *Prerequisite: MATH 033, 044, & 055 (or MATH 051) or MATH 045 with grades of C or higher; Completion of all developmental reading and writing courses required as a result of the College Testing and Placement Program.* (MATH)

**MATH 113 - Principles of Mathematics for Elementary Teachers I 3:3:0**  
Covers mathematical topics for prospective elementary school teachers. This course specifically addresses such topics as basic concepts of logic, sets, counting numbers, numeration systems, integers, rational numbers, real numbers, and descriptive statistics. *Prerequisite: Placement through the*

*College Testing and Placement Program or completion of MATH 033, 044, & 055 (or MATH 051) or MATH 045 with a grade of C or higher.* (MATH)

**MATH 114 - Principles of Mathematics for Elementary Teachers II 3:3:0**  
Continues covering mathematical topics for prospective elementary school teachers. This course addresses geometry with computer applications, measurement of geometric figures, the metric system, and provides an introduction to probability. *Prerequisite: MATH 033, 044, & 055 (or MATH 051), or MATH 045 with grades of C or higher. Placement through the College Testing and Placement Program.*

**MATH 119 - Pre-Calculus 4:4:0**  
Augments a background in algebra and trigonometry with material selected to improve students' chances for success in calculus. This course specifically covers elementary algebraic and transcendental functions, conic sections, non-linear systems of equations, vectors in the plane, parametric equations, polar coordinates, mathematical induction, sequences, series, and limits. *Prerequisite: Placement through the College Testing and Placement Program, or MATH 103 and MATH 104 with grades of C or higher, or equivalent.* (MATH)

**MATH 121 - Calculus I 4:5:0**  
Introduces differential and integral calculus of algebraic and trigonometric functions. This course covers functions, limits, continuity, as well as the evaluation and application of derivatives and integrals. *Prerequisite: MATH 119 or equivalent with a grade of C or higher.* (MATH)

**MATH 122 - Calculus II 4:5:0**  
Continues the topics covered in MATH 121 pertaining to differential and integral calculus. This course covers transcendental functions, parametric curves, infinite series, and furthers the techniques of integration with applications. *Prerequisite: MATH 121 with a grade of C or higher.* (MATH)

**MATH 125 - Discrete Mathematics 3:3:0**  
Designed for students majoring in mathematics or computer science and others desiring a broader mathematical perspective. Topics include logic, sets, methods of proof, relations, functions, mathematical induction, counting techniques, recurrence equations, and mathematical systems. *Prerequisite: MATH 119 or the equivalent with a grade of C or higher.*

**MATH 161 - Technical Mathematics for General Technology 3:3:0**  
Emphasizes the application of basic arithmetic, algebra,

trigonometry and other topics specific to technical areas. Course topics are selected according to the needs of a particular diploma program. *Prerequisite: MATH 008 & 022 (or MATH 010), or MATH 007 with grades of C or higher. Placement through the College Testing and Placement Program.*

**MATH 172 - Applied Mathematics for Automotive Technicians 3:3:0**

Reviews the basic operations of arithmetic and beginning algebra that is relevant to the automotive trade. This course also covers calculation of markup and markdown, insurance premiums, payroll deductions, and taxes. *Prerequisite: ENGL 001 with a grade of C or higher; Placement into MATH 008 (or MATH 010) through the College Testing and Placement Program.*

**MATH 202 - Introduction to Statistics 4:4:0**

Focuses on the mathematical skills needed by students enrolled in technical, business, and liberal arts curricula. This course covers describing and summarizing single and bivariate data, both graphically and numerically. Also, discrete and continuous probability distributions are covered. In addition, parametric estimation and tests of significance are studied. *Prerequisite: Placement through the College Testing and Placement Program or completion of MATH 033, 044, & 055 (or MATH 051) or 045, and ENGL 057 or a combination of ENGL 003, or 007 and 051 with grades of C or higher. (MATH)*

**MATH 203 - Mathematical Statistics 4:3:3**

Descriptive statistics, probability theory, discrete and continuous probability distributions, and statistical inferences for means and proportions. A course fee is required. *Prerequisite: MATH 121 with a grade of C or higher.*

**MATH 204 - Statistics Special Topics 1:1:0**

Designed for students that have successfully completed an introductory statistics course that did not include the following topics: goodness-of-fit, tests of independence of categorical variables, and/or one-way analysis variance. *Prerequisite: MATH 202 (3-credit course) with a grade of C or higher; or permission of Instructor.*

**MATH 220 - Linear Algebra 4:4:0**

Linear systems; matrix algebra; finite dimensional vector spaces including function spaces; linear transformations, and their matrix representations including coordinates, change-of-basis, real spectral theorem, orthogonal diagonalization, principal axes theorem. (For students of Mathematics, Science, and Engineering.) *Prerequisite: MATH 122 with a grade of C or higher.*

**MATH 221 - Calculus III 4:5:0**

Continues the topics of differential and integral calculus taught in MATH 122 to vectors and vector-valued functions, partial differentiation, multiple integrals, and space geometry. *Prerequisite: MATH 122 with a grade of C or higher.*

**MATH 222 - Differential Equations 4:5:0**

Ordinary differential equations of the first and second orders with physical and geometrical applications; operators; the Laplace Transform matrices; solutions in series, numerical methods. *Prerequisite: MATH 122 with a grade of C or higher.*

**MECHANICAL DESIGN**

**MDES 201 - Dynamics 3:3:1**

Graphical and mathematical analysis of relative motions in mechanisms. Velocities and accelerations in linkages, crank mechanisms, cams, gears, and gear trains are discussed. The student studies the principles of dynamics as applied to linear and angular motions including Newton's Laws of Motion and Work and Energy. A course fee is required. *Prerequisite: GTEC 201 and CAD 154 with a grade of C or higher.*

**MDES 204 - Product Design 3:2:3**

Covers the design of machine elements including levers, clutches, springs, gears, shafts, bearings, and housings. Numerous failure analysis techniques are applied to practical problems based on the type of load and material used. Students also design several mechanical devices and use the computer to solve problems. A course fee is required. *Prerequisite: CVTE 208; or permission of the Program Coordinator.*

**MDES 206 - Fluid Flow 3:2:3**

Elementary theory of fluid flow, measurement of flow, and fluid machinery. Primary emphasis is on the topics of fluid statics, flow of fluids in pipes and open channels, flow measurement, and forces developed by fluids in motion. Laboratory work demonstrates principles and applications of fluid mechanics. The computer is used in solving problems. A course fee is required. *Prerequisite: GTEC 201 with a grade of C or higher.*

**MDES 207 - Machine Shop Theory and Practice 1:0:3**

Theory and hands-on experience with machine tools, such as the lathe and the milling machine. A course fee is required.

**MECHANICAL DRAFTING**

**MDRF 101 - Engineering Drawing 2:1:3**

Basic drafting techniques, lettering, orthographic drawing, assembly drawings, auxiliary views, sections and conventions

and basic dimensioning. Drawings are made using drafting instruments and freehand sketching. Students are introduced to a CAD system. A course fee is required.

**MDRF 103 - Geometric Tolerancing 1:0.5:1.5**  
Dimensional and geometric tolerancing and true-position tolerancing presented as part of advanced drafting and production techniques. The student learns symbology for expressing allowable variations in part sizes. A course fee is required. *Prerequisite: MDRF 101 with a grade of C or higher, or permission of the Discipline Lead.*

## **MEDICAL ASSISTING**

**MA 110 - Medical Terminology 3:3:0**  
Provides an in-depth study of medical terminology as it relates to anatomy and physiology, pathophysiology and diagnostic testing. This course focuses on terms, abbreviations, and procedures that are commonly encountered in the ambulatory-care setting. *Co-requisite: BIOL 111 or 121 with a grade of C or higher.*

**MA 140 - Introduction to Medical Assisting 4:3:3**  
Introduces the student to the fundamental knowledge, skills, and behaviors needed to function effectively in a medical office. This course focus is on areas such as, professionalism, communication skills, health care law and ethics, cultural diversity, safety in the workplace, and patient assessment skills. *Enrollment is restricted to students in the Medical Assisting Certificate program. Co-requisite: BIOL 111 or 121 with a grade of C or higher.*

**MA 142 - Introduction to Medical Laboratory Techniques 3:2:3**  
Introduces Medical Assisting students to CLIA waived clinical laboratory procedures commonly performed in the ambulatory-care settings. Students acquire skills necessary to properly obtain blood specimens for laboratory testing. Basic laboratory principals are emphasized including quality assurance and safety requirements. Principals and techniques of commonly performed medical laboratory procedures are practiced. A course fee is required. *Enrollment is restricted to students in the Medical Assisting Certificate program. Pre or Co-requisite: MA 140; BIOL 111 or 121 with grades of C or higher.*

**MA 150 - Pathophysiology for Medical Assisting 3:3:0**  
Encompasses a review of anatomy and physiology with emphasis on human pathophysiology that includes etiology, prognosis, medical treatment, signs, and symptoms of common diseases of all human body systems. *Enrollment is restricted to students in the Medical Assisting Certificate*

*program. Pre or Co-requisite: BIOL 111 or 121 with a grade of C or higher. Co-requisite: MA 110.*

**MA 200 - Pharmacology for Medical Assisting 3:3:0**  
Introduces the student to drug actions, drug classification, drug preparation, and drug dispensing and administration. The course emphasizes the most commonly prescribed drugs, dosages, systems of measurement, dosage forms and calculations, and adverse effects. *Enrollment is restricted to students in the Medical Assisting Certificate program. Prerequisite: MATH 022 (or MATH 020) with a grade of C or higher. Pre or Co-requisite: MA 150 with a grade of C or higher. Co-requisite: MA 110.*

**MA 201 - Medical Assisting Pharmacology Laboratory 1:0:3**  
Introduces the techniques of preparing, dispensing and administering medication. Special focus is on dosage calculation, patient education, and medication error reduction. Emphasis is placed on the most commonly prescribed medications. A course fee is required. *Enrollment is restricted to students in the Medical Assisting Certificate program. Pre or Co-requisite: MA 200 with a grade of C or higher.*

**MA 212 - Ambulatory Care Clinical Procedures 4:3:3**  
Introduces general clinical procedures performed in an ambulatory care setting, including preparing patients and assisting with physical examinations, minor office surgery, specialized procedures, and maintenance of the clinical setting. A course fee is required. *Enrollment is restricted to students in the Medical Assisting Certificate program. Prerequisite: MA 110, 140, and 150 with grades of C or higher.*

**MA 213 - Medical Insurance and Billing 3:3:0**  
Covers third party billing techniques as well as the diagnosis and procedural coding systems that are common in medical offices. This course addresses the insurance systems and 3rd party billing techniques used at the state, federal, and commercial levels. Additional topics include: legal issues, resources, managed-care contracting, fee schedules, claims developing and processing, cost containment, and electronic data systems. *Enrollment is restricted to students in the Medical Assisting Certificate program. Prerequisite: MA 110 with a grade of C or higher.*

**MA 220 - Medical Office Administration 3:3:0**  
Provides a fundamental understanding of the professional, administrative and financial management responsibilities of the Medical Assistant. This course emphasizes scheduling, electronic medical record keeping, telephone etiquette, fundamental business writing skills, as well as the proper procedures for banking, billing, collections, accounts payable,

payroll, and the use of medical-management accounting software to maintain patient records. *Enrollment is restricted to students in the Medical Assisting Certificate program. Prerequisite: CIS 105 and MA 110 with grades of C or higher.*

**MA 221 - Medical Office Administration II 3:3:0**

Provides a fundamental understanding of the financial management responsibilities of the medical assistant. Emphases are on the proper procedures for banking, billing, collections, accounts payable, payroll, and the use of medical-management accounting software to maintain patient records. *Prerequisite: MA 220 with a grade of C or higher.*

**MA 230 - Medical Assisting Externship 4:0:20**

Encompasses supervised application of clinical and administrative skills during a 240-hour externship in an ambulatory care facility. Students record their clinical experience in an anecdotal format and are required to pass a mock certification skills exam. A course fee is required. *Enrollment is restricted to students in the Medical Assisting Certificate program. Prerequisite: MA 110, 140, 142, 150, 200, 201, 212, 213, & 220 with grades of C or higher.*

**MEDICAL LABORATORY TECHNOLOGY**

**MLT 100 - Introduction to Medical Laboratory Technology 2:2:1**

Introduces students to the role that the Medical Laboratory Technician plays within the health-care system. This course covers microscopy, a general overview of the departments of the clinical laboratory and laboratory personnel, laboratory safety, infection control, glassware and equipment, medical terminology, and mathematics as they apply to laboratory science. Students review the skills needed to draw blood and prepare specimens for testing. This course is appropriate for students considering laboratory science as a career. A course fee is required. *Pre or Co-requisite: ENGL 101 with a grade of C or higher. PBT 100 must be successfully complete, with a grade of C or higher, within 12 months of enrolling into MLT 100. Non-majors need permission of the Program Director. (FYS)*

**MLT 120 - Hematology and Coagulation 4:3:3**

Studies blood cell maturation, morphology, and function. In addition, this course discusses blood diseases, diagnostic procedures relating to whole blood, and the theory of blood coagulation. A course fee is required. *Enrollment is restricted to students in the Medical Laboratory Technician AS program. Non-majors need permission of the Program Director. Prerequisite: MLT 100, 122; and PBT 100 with grades of C or higher.*

**MLT 122 - Immunology and Molecular Biology 3:3:2**

Studies serum immunity and reactions to antigens and antibodies as they apply to blood. In addition, this course discusses serologic procedures including molecular biology testing. A course fee is required. *Enrollment is restricted to students in the Medical Laboratory Technician AS program. Non-majors need permission of the Program Director. Prerequisite: Eligibility for enrollment into ENGL 101.*

**MLT 124 - Immunoematology 4:3:3**

Studies blood-group antigens and antibodies of the human body. In addition, this course emphasizes laboratory procedures for typing, compatibility testing, donor screenings, and the processing of blood. A course fee is required. *Enrollment is restricted to students in the Medical Laboratory Technician AS program. Non-majors need permission of the Program Director. Prerequisite: MLT 100, 120, 122, and 220 with grades of C or higher.*

**MLT 220 - Clinical Microbiology I 4:3:3**

Studies bacteria that cause human disease. In addition, this course discusses diagnostic procedures. A course fee is required. *Enrollment is restricted to students in the Medical Laboratory Technician AS program. Non-majors need permission of the Program Director. Prerequisite: MLT 100, MLT 122, and PBT 100 with grades of C or higher.*

**MLT 222 - Clinical Chemistry 4:3:3**

Studies the basic principles and techniques of biochemistry for clinical and laboratory applications. This specifically addresses enzymes, hormones, proteins, lipids, and carbohydrates, electrolytes, and acid-base balance. A course fee is required. *Enrollment is restricted to students in the Medical Laboratory Technician AS program. Non-majors need permission of the Program Director. Prerequisite: MLT 100, 122, and PBT 100 with grades of C or higher.*

**MLT 224 - Urinalysis and Body Fluids 2:2:1**

Studies the urinary system including the chemical and morphological characteristics of urine. A course fee is required. *Enrollment is restricted to students in the Medical Laboratory AS program. Non-majors need permission of the Program Director. Prerequisite: MLT 100, 120, 122, and 220 with grades of C or higher.*

**MLT 226 - Clinical Experience I 5:0:40**

Provides direct supervision of clinical laboratory skills application at affiliated hospitals or health-care agencies. Students gain experience working in a variety of laboratory areas. A course fee is required. *Enrollment is restricted to students in the Medical Laboratory Technician AS program. Prerequisite: MLT 124, 222, and 224 with grades of C or higher.*

**MLT 228 - Clinical Experience II** **5:0:40**  
Continues the clinical experience conducted in MLT 226. Students obtain direct supervision of clinical laboratory skills application at affiliated hospitals or health-care agencies. Students gain experience working in a variety of laboratory areas. A course fee is required. *Enrollment is restricted to students in the Medical Laboratory Technician AS program.. Prerequisite: MLT 226 and 230 with grades of C or higher.*

**MLT 230 - Parasitology and Mycology** **2:2:0**  
Studies the parasites and fungi that cause human disease. In addition, this course also discusses various diagnostic procedures used to identify infestations. *Enrollment is restricted to students in the Medical Laboratory Technician AS program. Non-majors need permission of the Program Director. Prerequisite: MLT 124, 222, and 224 with grades of C or higher.*

**MLT 232 - Clinical Experience III** **2:0:16**  
Third clinical experience. Supervised application of laboratory skills at affiliated hospitals or health-care agencies. The student learns to function competently in a variety of laboratory areas. A course fee is required. *Enrollment in this course is restricted to students in the Medical Laboratory Technician AS program. Prerequisite: MLT 220 with a grade of C or higher; Co-requisite: MLT 234 and 236.*

**MLT 234 - Clinical Experience IV** **2:0:16**  
Fourth clinical experience. Supervised application of laboratory skills at affiliated hospitals or health-care agencies. The student learns to function competently in a variety of laboratory areas. A course fee is required. *Enrollment in this course is restricted to students in the Medical Laboratory Technician AS program. Prerequisite: MLT 222 and 224 with grades of C or higher; Co-requisite: MLT 232 and 236.*

**MLT 236 - Clinical Laboratory Management** **2:2:0**  
Introduces management and education in the clinical laboratory. This course provides an overview of healthcare reimbursement, job design, cost accounting, performance appraisals, compliance, budgets, staffing, scheduling, education and training, and preparing for inspections. *Enrollment is restricted to students in the Medical Laboratory Technician AS program. Non-majors need permission of the Program Director. Prerequisite: MLT 226 and 230 with grades of C or higher.*

## **METEOROLOGY**

**METR 101 - Weather and Climate** **3:3:1**  
Introduces students to the basic elements of weather and climate for non-science majors. The course addresses how

weather elements are used with computer prognostics, weather satellite imagery, observations, and weather radar to produce daily forecasts. Special topics such as thunderstorms, hurricanes, tornadoes, and global warming are also covered. A course fee is required.

## **MUSIC**

**MUS 102 - Introduction to Music** **3:3:0**  
How music is created and the highlights of its historical development from ancient times to the present. Students are encouraged to become involved with music either by actively participating or by becoming better-informed listeners. Whenever possible, classwork is arranged to relate to local performances. (H&A)

**MUS 102H - Honors Introduction to Music** **3:3:0**  
How music is created and the highlights of its historical development from ancient times to the present. Students are encouraged to become involved with music by actively participating or by becoming better-informed listeners. Whenever possible, class work is arranged to relate to local performances. Using a seminar or discussion-based approach; this course encourages independent, creative and critical inquiry and prepares students for the practical application of information by emphasizing effective research strategies and technologies congruent with the field of study. *Prerequisite: Completion of all developmental reading and writing courses required as a result of the College Testing and Placement Program.* (H&A)

**MUS 103 - Introduction to Elementary Music** **3:3:0**  
The current trends in music education. Materials and techniques for the elementary school teacher. Fundamentals of music are presented and applied to the materials used.

**MUS 104 - Introduction to World Music** **3:3:0**  
Examines how music is created and expressed around the world, including description, analysis, and comparisons of selected world music in both ancient and modern traditions. Whenever possible, classwork is arranged to relate to local performances. (H&A)

**MUS 110 - History of Rock and Related Styles** **3:3:0**  
History of rock music. The course focuses specifically on rock, but also includes related styles, such as blues, country, and rap. Topics include roots, influences, and current trends of popular music within a historical context of political and social events.

**MUS 111 - Choir I** **1:0:3**  
The study, rehearsal, and performance of standard works of

choral literature. Open to any student without audition. A course fee is required.

**MUS 112 - Choir II 1:0:3**

The study, rehearsal, and performance of standard works of choral literature. Open to any student without audition. A course fee is required.

**MUS 115CO - Music Composition Lessons I 1:1:0**

Private lessons in the fundamentals of music composition. This course culminates in the composition of an original work or works. One credit hour equates to one 1/2 hour private lesson per week. Basic keyboard skills are required, as well as, access to a keyboard or other primary instrument. A course fee is required. *Signed permission of the Instructor is required.*

**MUS 115GU - Private Guitar Lessons I 1:1:0**

Designed for students who desire private, one-on-one instruction in guitar. This course enables students to gain increased proficiency in the performance of guitar literature. One credit hour equates to one 1/2 hour private lesson per week. A course fee is required.

**MUS 115PI - Private Piano Lessons I 1:1:0**

Designed for students who desire private, one-on-one instruction in piano. This course enables students to gain increased proficiency in the performance of piano literature. One credit hour equates one 1/2 hour private lesson per week. A course fee is required.

**MUS 115VO - Private Voice Lessons I 1:1:0**

Designed for students who desire private, one-on-one instruction in voice. This course enables students to gain increased proficiency in the performance of vocal literature. One credit hour equates to one 1/2 hour private lessons per week. A course fee is required.

**MUS 116CO - Music Composition Lessons II 1:1:0**

Continues the fundamentals covered in MUS 115CO for students desiring further private, one-on-one instruction. One credit hour equates to one 1/2 hour private lesson per week. A course fee is required. *Prerequisite: MUS 115CO with a grade of C or higher.*

**MUS 116GU - Private Guitar Lessons II 1:1:0**

Continues the skills and techniques covered in MUS 115GU for students desiring further private, one-on-one instruction in guitar. One credit hour equates to one 1/2 hour private lesson per week. A course fee is required. *Prerequisite: MUS 115GU with a grade of C or higher.*

**MUS 116PI - Private Piano Lessons II 1:1:0**

Continues the skills and techniques covered in MUS 115PI for students desiring further private, one-on-one instruction in piano. One credit hour equates to one 1/2 hour private lesson per week. A course fee is required. *Prerequisite: MUS 115PI with a grade of C or higher.*

**MUS 116VO - Private Voice Lessons II 1:1:0**

Continues the skills and techniques covered in MUS 115VO for students desiring further private, one-on-one instruction in voice. One credit hour equates to one 1/2 hour private lesson per week. A course fee is required. *Prerequisite: MUS 115VO with a grade of C or higher.*

**MUS 119 - Introduction to Music Theory 3:3:0**

Designed for the student with a minimum background in music but who exhibits a desire to either complete the regular sequence of theory courses offered by the College and thereby transfer to a four-year music college or simply increase knowledge and appreciation of music in general.

**MUS 120 - Music Theory I 3:3:0**

Principles of elementary harmony as developed in the Baroque and Classical eras. These include diatonic triads as used in major and minor keys.

**MUS 127 - Performance Ensemble I 1:1:2**

Promotes and develops the performance skills and knowledge utilized by musicians in a group setting. This course is the first of four performance experience courses that provides students with the opportunity to develop performance skills and gain an understanding of the musical skills required of performers through the process of playing in a student-centered group facilitated by faculty. Diverse musical genres are performed and utilized as a framework to instruct the fundamentals of harmony, melody and improvisation. Students do not need prior experience performing in a group to enroll in this course. Students must schedule an audition with music faculty prior to enrollment.

**MUS 128 - Performance Ensemble II 1:1:2**

Continues to promote and develop the performance skills and knowledge taught in MUS 127. This course is the second of four performance experience courses that provides students with the opportunity to continue to develop their performance skills and gain further understanding of the musical skills required of performers through the process of playing in a student-centered group facilitated by faculty. Diverse musical genres are performed and utilized as a framework to instruct the fundamentals of harmony, melody and improvisation. *Prerequisite: MUS 127 with a grade of C or higher.*

**MUS 129 - Performance Ensemble III 1:1:2**  
Continues to promote and develop the performance skills and knowledge taught in MUS 128. This course is the third of four performance experience courses that provide students with the opportunity to continue developing their performance skills and gain an advanced understanding of the musical skills required of performers through the process of playing in a student-centered group facilitated by faculty. Diverse musical genres are utilized as a framework in which to perform and instruct the concepts of harmony, melody and improvisation instructed at prior levels. *Prerequisite: MUS 128 with a grade of C or higher. It is recommended that students enroll in a private lesson course in order to supplement the skills taught in this course.*

**MUS 130 - Performance Ensemble IV 1:1:2**  
Allows students to refine the performance skills and knowledge taught in MUS 129. This course is the fourth of four performance experience courses that provide students with the opportunity to develop their performance skills gain and advance their understanding of the musical skills required of performers through the process of playing in a student-centered group facilitated by faculty. Diverse musical genres are utilized as a framework to perform and instruct the concepts of harmony, melody and improvisation. *Prerequisite: MUS 129 with a grade of C or higher. It is recommended that students also enroll in a private lesson course in order to supplement the skills taught in this course.*

**MUS 201 - The History of Music I 3:3:0**  
A critical analysis and survey of music and composers from the beginning of the history of music to 1800.

**MUS 202 - The History of Music II 3:3:0**  
A critical analysis of music and composers from 1800 to the present.

**MUS 204 - History of Jazz 3:3:0**  
Promotes the appreciation and enjoyment of jazz. Students gain a better understanding of the evolution of jazz styles through the process of analysis. Active listening experiences and attendance at a live concert performance are required. No prior technical knowledge of music is needed for students to understand the content covered in this course.

**MUS 211 - Choir III 1:0:3**  
The study, rehearsal, and performance of standard works of choral literature. Open to any student without audition. A course fee is required.

**MUS 212 - Choir IV 1:0:3**  
The study, rehearsal, and performance of standard works of choral literature. Open to any student without audition. A course fee is required.

**MUS 215CO - Music Composition Lessons III 1:1:0**  
Continues the fundamentals covered in MUS 115CO and MUS 116CO for students desiring further private, one-on-one instruction in composition. One credit hour equates to one 1/2 hour private lesson a week. A course fee is required. *Prerequisite: MUS 115CO and MUS 116CO with a grade of C or higher.*

**MUS 215GU - Private Guitar Lessons III 1:1:0**  
Continues the skills and techniques covered in MUS 115GU and MUS 116GU for students desiring further private, one-on-one instruction in guitar. One credit hour equates to one 1/2 hour private lesson per week. A course fee is required. *Prerequisite: MUS 115GU and MUS 116GU with a grade of C or higher.*

**MUS 215PI - Private Piano Lessons III 1:1:0**  
Continues the skills and techniques covered in MUS 115PI and MUS 116PI for students desiring further private, one-on-one instruction in piano. One credit hour equates to one 1/2 hour private lesson per week. A course fee is required. *Prerequisite: MUS 115PI and MUS 116PI with a grade of C or higher.*

**MUS 215VO - Private Voice Lessons III 1:1:0**  
Continues the skills and techniques covered in MUS 115VO and MUS 116VO for students desiring further private, one-on-one instruction in voice. Once credit hour equates to on 1/2 hour private lesson per week. A course fee is required. *Prerequisite: MUS 115VO and MUS 116VO with a grade of C or higher.*

**MUS 216CO - Music Composition Lessons IV 1:1:0**  
Continues the fundamentals covered in MUS 115CO, MUS 116CO, and MUS 215CO for students desiring further private, one-on-one instruction in composition. One credit hour equates to one 1/2 hour private lesson per week. A course fee is required. *Prerequisite: MUS 115CO, MUS 116CO, and MUS 215CO with a grade of C or higher.*

**MUS 216GU - Private Guitar Lessons IV 1:1:0**  
Continues the skills and techniques covered in MUS 115GU, MUS 116GU, and MUS 215GU for students desiring further private, one-on-one instruction in guitar. One credit hour equates to one 1/2 hour private lesson per week. A course fee is required. *Prerequisite: MUS 115GU, MUS 116GU, and MUS 215GU with a grade of C or higher.*

**MUS 216PI - Private Piano Lessons IV 1:1:0**  
Continues the skills and techniques covered in MUS 115PI, MUS 116PI and MUS 215 PI for students desiring further private, one-on-one instruction in piano. One credit hour equates to one 1/2 hour private lesson per week. A course fee is required. *Prerequisite: MUS 115PI, MUS 116PI, and MUS 215PI with a grade of C or higher.*

**MUS 216VO - Private Voice Lessons IV 1:1:0**  
Continues the skills and techniques covered in MUS 115VO, MUS 116VO, and MUS 215VO for students desiring further private, one-on-one instruction in voice. One credit hour equates to one 1/2 hour private lesson per week. A course fee is required. *Prerequisite: MUS 115VO, MUS 116VO, and MUS 215VO with a grade of C or higher.*

## **MUSIC BUSINESS**

**MUSB 111 - Music Business and the Internet 3:3:0**  
Introduces students to the Internet and Search Engine Optimization (SEO) marketing, which includes various social media resources used in the music industry. This course emphasizes how the Internet and SEO marketing are used to generate income through online promotion, networking, and collaboration.

**MUSB 214 - Music Business Studies 3:3:0**  
Introduces students to the areas of songwriting and music publishing, copyright registration, and music licensing. This course explores performance, as a career choice as well as those in talent management, recording labels, live sound and/or recording studio production, and music product sales. Related career fields are also examined including private music studio teaching, music journalism, and music therapy. *Prerequisite: Eligibility for enrollment into ENGL 051 as required by the College Testing and Placement Program.*

**MUSB 224 - Music Industry and American Popular Music 3:3:0**  
Introduces the study of popular music styles from their origins to present day performances. The course examines how music was popularized through diverse distribution marketing methods and how it influenced American popular music markets. In addition, emphasis is placed on specific musical characteristics found in music genres. *Prerequisite: Eligibility for enrollment into ENGL 051 as required by the College Testing and Placement Program. Placement program.*

**MUSB 225 - Entertainment and Music Promotion 3:3:0**  
Examines the overall processes of concert promotion and entertainment for commerce. The course covers the steps required for musicians to successfully self-promote and build

an artistic career and includes the role that music unions and professional associations play in the career of a performer. The income producing process of both nonprofit and for profit concert promotion is also explored as well as the function that record label promotion, concert promotion, radio promotion, live-sound production and social media marketing serves in supporting the musician. Finally, this course further examines how music is used in media, television and film. *Prerequisite: Eligibility for enrollment into ENGL 051 as required by the College Testing and Placement Program.*

**MUSB 226 - Music Computer Applications 3:3:0**  
Introduces MIDI and Digital Audio Technologies through the use of digital audio workstation (DAW) software. This course presents an introduction to recording, editing, arranging, and loop-based music products.

**MUSB 227 - Studio and Performance Production Operations 4:3:2**  
Covers the technical and artistic sides of recording studio activities. Students experience the workings of a real recording studio during the laboratory portion of the course. (Students must participate in laboratory sessions at off-campus recording studios and are responsible for their own transportation.) A course fee is required.

**MUSB 228 - Audio Technology 4:3:2**  
Provides students with an overview of the music production industry. This course allows students the opportunity to experiment with the current technology of the audio trades and research the complexities involved in the recording studio and at live performances. A course fee is required.

**MUSB 229 - Commercial Songwriting and the Music Industry 3:3:0**  
Explores the craft of songwriting. This integrative course combines the combination of melodic and harmonic songwriting theory and the design of lyric-phrasing through collaborative exercises. In addition, various song designs and their applications to popular music styles are examined. This course encourages collaborative exercises integrating different creative talents of its students. *Prerequisite: MUS 119 with a grade of C or higher.*

**MUSB 291 - Music Industry Internship 3:0:15**  
Encompasses a faculty and business-monitored internship where students complete 180-hours per semester in an approved music industry establishment. This internship experience provides students with an opportunity to apply the knowledge and skills acquired in the music industry curriculum to real-world scenarios. *Prerequisite: MUSB 111, 214, & 228 with grades of C or higher.*

## **NANOFABRICATION**

### **NFA 211 - Material, Safety, and Equipment 3:2:3 Overview for Nanofabrication**

This course provides an overview of the materials, safety and equipment issues encountered in the practice of "top down" and "bottom up" nanofabrication. It focuses on safety, environmental and health issues in equipment operation and materials handling as well as on cleanroom protocol. Topics to be covered include: cleanroom operation, OSHA lab standard safety training, health issues, Biosafety Levels (BSL) guidelines, and environmental concerns. Safety issues dealing with nanofabrication equipment, materials, and processing will also be discussed including those pertinent to biological materials, wet benches, thermal processing tools, plasma based equipment, stamping and embossing lithography tools, vacuum systems and pumps, gas delivery systems and toxic substance handling and detection. Specific material handling procedures to be discussed will include corrosive, flammable, and toxic materials, biological materials, carcinogenic materials, DI water, solvents, cleaners, photo resists, developers, metals, acids, and bases. The course will also concentrate on safe equipment maintenance and operation. Students will be given an overview of basic nanofabrication materials, equipment and equipment operation. This technical overview and operational introduction to processing equipment and characterization tools will include: chemical processing, furnaces, vacuum based processing (physical vapor deposition equipment, chemical vapor deposition equipment, and dry etching equipment), and lithography as well as scanning probe microscopy (e.g., atomic force microscopy), optical microscope, electron microscopy (e.g., scanning electron microscopy), ellipsometer, nanospec, and profilometer equipment. A course fee is required. *Prerequisite: Restricted, see Instructor.*

### **NFAB 212 - Basic Nanofabrication Processes 3:2:3**

This course is the hands-on introduction to the processing involved in "top down", "bottom up", and hybrid nanofabrication. The majority of the course details a step-by-step description of the equipment, facilities processes and process flow needed to fabricate devices and structures. Students learn to appreciate processing and manufacturing concerns including process control, contamination, yield, and processing interaction. The students design process flows for micro- and nano-scale systems. Students learn the similarities and differences in "top down" and "bottom up" equipment and process flows by undertaking hands-on processing. This hands-on exposure covers basic nanofabrication processes including colloidal chemistry, self-assembly, catalyzed nanoparticle growth, lithography, wet and dry etching, physical vapor deposition, and chemical vapor deposition. A

course fee is required. *Prerequisite: Restricted, see Instructor.*

### **NFAB 213 - Thin Films in Nanofabrication 3:2:3**

This course is an in-depth, hands-on exposure to materials fabrication approaches used in nanofabrication. Students learn that these processes can be guided by chemical or physical means or by some combination of these. Hands-on exposure will include self-assembly; colloidal chemistry; atmosphere, low-pressure and plasma enhanced chemical vapor deposition; sputtering; thermal and electron beam evaporation; nebulization and spin-on techniques. This course is designed to give students hands-on experience in depositing, fabricating and self-assembling a wide variety of materials tailored for their mechanical, electrical, optical, magnetic, and biological properties. A course fee is required. *Prerequisite: Restricted, see Instructor.*

### **NFAB 214 - Lithography for Nanofabrication 3:2:3**

This course is a hands-on treatment of all aspects of advanced pattern transfer and pattern transfer equipment including probe techniques; stamping and embossing; e-beam; and optical contact and stepper systems. The course is divided into five major sections. The first section is an overview of all pattern generation processes covering aspects from substrate preparation to tool operation. The second section concentrates on photolithography and examines such topics as mask template, and mold generation. Chemical makeup of resists will be discussed including polymers, solvents, sensitizers, and additives. The role of dyes and antireflective coatings will be discussed. In addition, critical dimension (CD) control and profile control of resists will be investigated. The third section will discuss the particle beam lithographic techniques such as e-beam lithography. The fourth section covers probe pattern generation and the fifth section explores embossing lithography, step-and-flash, stamp lithography, and self-assembled lithography. A course fee is required. *Prerequisite: Restricted, see Instructor.*

### **NFAB 215 - Materials Modification in Nanofabrication 3:2:3**

This course will cover in detail the processing techniques and specialty hardware used in modifying properties in nanofabrication. Material modification steps to be covered will include etching, functionalization, alloying, stress control and doping. Avoiding unintentional materials modification will also be covered including such topics as use of diffusion barriers, encapsulation, electromigration control, corrosion control, wettability, stress control, and adhesion. Hands-on materials modification and subsequent characterization will be undertaken. A course fee is required. *Prerequisite: Restricted, see Instructor.*

### **NFAB 216 - Characterization, Packaging, and Testing of Nanofabricated Structures 3:2:3**

This course examines a variety of techniques and measurements essential for testing and for controlling material fabrication and final device performance. Characterization includes electrical, optical, physical, and chemical approaches. The characterization experience will include hands-on use of tools such as the Atomic Force Microscope (AFM), Scanning Electron Microscope (SEM), Fluorescence microscopes, and fourier transform infrared spectroscopy. A course fee is required. *Restricted course: see Instructor.*

## **NURSING**

### **NURS 100 - Fundamentals of Practical Nursing 10:6:21**

Introduces the Nursing profession with emphasis placed on the role of both practical nurse and the rights of clients. Fundamental nursing skills are developed to provide clinically competent care. Common healthcare needs of acute and chronically ill adults provide the course's framework. Ethical, legal, cultural, and spiritual responsibilities are integrated throughout the course and the concepts of therapeutic communication, asepsis, and nutrition are introduced. Principles of pharmacology and medication administration are also examined. The nursing process is utilized as a critical thinking tool to guide practice as beginning concepts are solidified through clinical laboratory experience in both acute and long-term settings. A course fee is required. *Prerequisite: MATH 020 with a grade of C or higher. Co-requisite: BIOL 100, 111, and ENGL 101.*

### **NURS 101 - Concepts in Practical Nursing I 10:6:21**

Explores new concepts related to the care of childbearing individuals and their families, family centered care of children from infancy to adolescence, and the care of clients with mental illness. Through theory and guided clinical experiences, students explore the impact of health and illness across the life span. The development of therapeutic communication and client teaching skills are emphasized. Students learn to integrate cultural sensitivity and caring behaviors by assisting clients to identify and meet their health care needs. A course fee is required. *Prerequisite: NURS 100 with a grade of C or higher; Co-requisite: PSYC 101.*

### **NURS 102 - Concepts in Practical Nursing II 10:6:21**

Uses theory and guided clinical experiences to provide students with an in-depth exploration of chronic and acute illnesses along with health promotion and maintenance. Concepts pertinent to the older adult and the impact of the aging process are examined. Critical thinking and evidenced-based practice provides a foundation from implementing care to adult clients presenting complex healthcare needs.

Principles of pharmacology and medication administration are also covered. Students integrate leadership concepts, effective communication, collaboration, accountability, and caring to meet the needs of adults throughout their life spans. Emphasis is placed upon transitioning students into the Practical Nurse profession. A course fee is required.

*Prerequisite: NURS 101 with a grade of C or higher. Co-requisite: SOCI 201.*

### **NURS 115 - Dosage Calculations for the Practical Nurse 0.5:0.5:0**

Reviews basic mathematics, conversions between mathematical systems, and dosage calculation formulas used to determine dosages of oral and parenteral medications for adults. Additional topics include the interpretation of drug orders and labels and the calculation of IV solution administration rates. *Enrollment is restricted to students in the Practical Nursing Certificate program. Prerequisite: NURS 100 with a grade of C or higher.*

### **NURS 118 - Guatemala: A Cross Cultural Nursing Immersion 3:3:0**

Combines hands-on learning and service with a cultural-immersion experience as students travel to Guatemala to examine Guatemalan culture, its health care standards, Guatemalan's access to healthcare, and the country's current health-care system. This course builds upon the student's use of the Nursing Process and the clinical skills they acquired during the first year and beyond in the nursing curriculum. Focus is also on integrating the use of clinical skills, health promotion, critical thinking, and education while stimulating the student's self-awareness, confidence, and their pursuit of life-long learning. A course fee is required. *Prerequisite: NURS 140 and 141 with grades of C or higher. Instructor's signature is required.*

### **NURS 120 - Zambia: A Cross-Cultural Nursing Immersion 3:3:0**

Combines hands-on learning and service with a cultural-immersion experience as students travel to Zambia to examine Zambian culture, its health care standards, Zambian's access to healthcare, and the country's current health-care system. This course builds upon the student's use of the Nursing Process and the clinical skills acquired during the first year and beyond the nursing curriculum. Focus is also on integrating the use of clinical skills, health promotion, critical thinking and education while stimulating the student's self-awareness, confidence, and their pursuit of life-long learning. A course fee is required. *Prerequisite: NURS 140, 141, 142, and 144 with grades of C or higher; Instructor's signature is required.*

**NURS 125 - Dosage Calculations 2:2:0**

Designed for students recently accepted into the Nursing program, are currently enrolled in the Nursing program, or have obtained permission of the course instructor. The course covers a complete basic review of Math principles followed by information necessary to calculate and safely administer medications. Calculation and administration of medications to adults and children are discussed. Oral and parenteral doses will be addressed, as well as, the introduction of intravenous therapy. *Prerequisite: Permission of the Nursing Program Faculty.*

**NURS 126 - Dosage Calculations II 0.5:0.5:0**

Designed for students currently enrolled in NURS 103 and who have been unsuccessful on the NURS 104 dosage entrance exam. This course emphasizes those concepts that were introduced in NURS 103, regarding dosage calculations, and prepares the student to retake the NURS 104 dosage entrance exam so as to aid them in achieving a successful outcome. In addition, this course reviews parenteral medications, reconstitution of medications for administration, as well as intravenous concepts and calculations. *Co-requisite: NURS 103 or permission of the Nursing Program Faculty.*

**NURS 140 - Introduction to Nursing Practice Concepts I 1:0:3**

Focuses on the clinical skills necessary to practice safe nursing care at a fundamental level. The clinical skills include: psychomotor skills, rationale, critical thinking, and physical assessment. This course also introduces fundamental skills which include safety, vital signs, intake and output, hygiene, TED hose application, ROM (range of motion), patient positioning, patient transfer techniques, body mechanics, standard precautions, isolation, oxygen therapy, oral/pharyngeal suctioning, safe non-parenteral medication administration, and medical asepsis. This course emphasizes the concept of caring and caring interventions and uses hands-on skill development, theory, and simulation scenarios to facilitate student learning. A course fee is required. *Enrollment is restricted to students in the Nursing AS program. Prerequisite: BIOL 121 with a grade of C or higher. Co-requisite: NURS 142 and 143; or permission of the Nursing Faculty.*

**NURS 141 - Introduction to Nursing Practice Concepts II 1:0:3**

Builds upon the nursing practice concepts introduced in NURS 140. This course focuses on intermediate clinical skills necessary to provide safe and effective aseptic nursing care. The clinical skills include: psychomotor skills, rationale, critical thinking, and physical assessment. This course also builds upon the fundamental skills covered in NURS 140 and

includes: sterility, isolation with sterility, introduction to IV therapy and IV pumps, safe parenteral medication administration, enemas, urinary catheter insertion and care, specimen collection, and central line awareness. This course emphasizes the concept of caring and caring interventions and uses hands-on skill development, theory and simulation scenarios to facilitate student learning. A course fee is required. *Enrollment is restricted to students in the Nursing AS program. Prerequisite: BIOL 121; NURS 140, and 142 with grades of C or higher. Co-requisite: NURS 143 and 144.*

**NURS 142 - Health Assessment Concepts for Nursing Practice 3:3:0**

Introduces students to the health and physical assessment of clients and the detection of findings, which indicate an abnormal condition. This course covers the concepts of accountability, advocacy, assessment, caring, cellular regulation, cognition, comfort, communication, culture, diversity, elimination, ethics, evidence-based practice, family, basic electrolyte balance, health care systems, health policy, health/wellness/illness, illness, thermoregulation, tissue integrity, and violence as they all relate to the health and physical assessment clients. A course fee is required. *Enrollment is restricted to students in the Nursing AS program. Prerequisite: BIOL 121 with a grade of C or higher. Co-requisite: NURS 140, 143; BIOL 122; and PSYC 101.*

**NURS 143 - Concepts of Informatics in Nursing Practice 1:1:0**

Introduces the concepts and skills related to Informatics in nursing practice. Didactic instruction focuses on basic computer competency, information literacy as aids in the decision making process and the provision of evidenced-based nursing practice. In addition, the necessity for providing a "culture of safety," related to the use of Informatics in nursing practice, is stressed. A course fee is required. *Enrollment is restricted to students in the Nursing AS program. Prerequisite: BIOL 121 with a grade of C or higher. Co-requisite: NURS 140 and 142.*

**NURS 144 - Fundamental Concepts for Nursing Practice 3:3:0**

Introduces students to the foundational concepts for the practice of nursing. The foundational concepts emphasized are: accountability, advocacy, caring, cellular regulations, clinical decision making, communication, critical thinking, culture, diversity, ethics, evidence-based practice, family, fluid and electrolytes, health care systems, health policy, health/wellness/illness, illness, infection, inflammation, legal issues, metabolism, mobility, nursing process, oxygenation, perfusion, professional behaviors, quality improvement, safety, sensory perception, spirituality, stress and coping,

teaching and learning, therapeutic communication, thermoregulation, time management/ organization, tissue integrity, and violence. Students incorporate cultural values and the client's right to choose in the process of health care decision making. A course fee is required. *Enrollment is restricted to students in the Nursing AS program. Prerequisite: BIOL 121; NURS 140, and 142 with grades of C or higher. Co-requisite: NURS 141, 143; BIOL 122; and ENGL 101.*

**NURS 150 - Holistic Health Concepts for Nursing Practice I 5:4:3**

Addresses safe nursing care for the adult patient. This course is designed to develop the concepts of accountability, advocacy, behaviors, caring, clinical decision making, cognition, collaboration, communication, culture, diversity, elimination, ethics, evidence-based practice, family, fluid and electrolytes, grief and loss, health care systems, health policy, health/wellness/illness, illness, immunity, infection, inflammation, metabolism, mobility, perfusion, professional behaviors, quality improvement, safety, sexuality, spirituality, stress and coping, teaching and learning, therapeutic communication, time management/organization, and tissue integrity. Students gain the theoretical knowledge and clinical skills needed to organize and provide safe nursing care for diverse individuals. A course fee is required. *Enrollment is restricted to students in the Nursing AS program. Prerequisite: NURS 141, 144; BIOL 122; and ENGL 101 with grades of C or higher. Co-requisite: NURS 143, and PSYC 209. (W)*

**NURS 151 - Holistic Health Concepts for Nursing Practice II 4.5:3:4.5**

Addresses safe nursing care for the adult patient and their families. This course is designed to develop the concepts of accountability, acid-based balance, advocacy, caring behaviors, clinical decision making, collaboration, communication, culture, diversity, elimination, ethics, evidence-based practice, family, fluid and electrolytes, grief and loss, health care systems, health policy, health/wellness/illness, illness, immunity, inflammation, intracranial regulation, mobility, perfusion, professional behaviors, quality improvement, safety, sexuality, spirituality, teaching and learning, therapeutic communication, and time management/organization. Special consideration is placed upon events that are common in the normal life cycle. In addition, this course uses theory and guided clinical experiences to allow students to focus on meeting basic human needs while providing safe nursing care for diverse individuals and families. A course fee is required. *Enrollment is restricted to students in the Nursing AS program. Prerequisite: NURS 143, 150; BIOL 122; and ENGL 101 with grades of C or higher. Co-requisite: PSYC 209.*

**NURS 220 - Pharmacology for Nurses 3:3:0**

Introduces students to pharmacology and the safe administration of drugs. This course emphasizes the study of groups of drugs, their actions, and their side effects with special attention placed on nursing implications and pharmacokinetics. *Enrollment is restricted to students in Nursing AS program. Prerequisite: NURS 151 with a grade of grade of C or higher; Permission of the Nursing faculty; Nursing licensure - PN or RN.*

**NURS 225 - Advanced Dosage Calculations 1:1:0**

Emphasizes critical thinking skills required to prepare and administer intravenous (IV) medications and advanced pediatric dosages. This course is designed for students, who are entering their second year of the nursing program or have obtained permission to enroll in the course by the Instructor. *Enrollment is restricted to students in the Nursing AS program. Prerequisite: Permission of the Nursing Program Faculty.*

**NURS 226 - Advanced Dosage Calculations II 0.5:0.5:0**

Designed for students enrolled in NURS 205, or who have been unsuccessful on the NURS 206 dosage entrance exam. The course emphasizes concepts that were discussed in NURS 103, 104, & 225. Critical thinking skills are challenged with regards to advanced dosage calculation concepts. The goal is to prepare students to retake the NURS 206 dosage entrance exam so as to aid them in achieving a successful outcome. *Co-requisite: NURS 205 or permission of the Nursing Program Faculty.*

**NURS 240 - Adult Health Concepts for Nursing Practice I 2:1:3**

Addresses safe nursing care and the needs of patients with cancer and other cellular alterations. This course is designed to further develop the concepts of accountability, advocacy, caring, cellular regulation, clinical decision making, collaboration, comfort, communication, culture, diversity, ethics, evidence-based practice, family, grief and loss, health care systems, health policy, health/ wellness/illness, illness, immunity, infection, perfusion, professional behaviors, quality improvement, safety, spirituality, teaching and learning, therapeutic communication, and time management/organization. A course fee is required. *Enrollment is restricted to students in the Nursing AS program. Prerequisite: NURS 151; BIOL 221; SOCI 201; and PSYC 209 with grades of C or higher. Co-requisite: NURS 242, 243, and 244.*

**NURS 241 - Adult Health Concepts for Nursing Practice II 2.5:1.5:3**

Covers safe nursing care for patients with complex physiological needs. This course is designed to further

develop the concepts of accountability, acid base balance, advocacy, caring clinical decision making, collaboration, communication, culture, diversity, ethics, evidence-based practice, family, grief and loss, health care systems, health policy, health/wellness/illness, illness, infection, inflammation, metabolism, mobility, professional behaviors, quality improvement, safety, spirituality, teaching and learning, therapeutic communication, and time management/organization. A course fee is required. *Enrollment is restricted to students in the Nursing AS program. Prerequisite: NURS 240; BIOL 221; SOCI 201; and PSYC 209 with grades of C or higher. Co-requisite: NURS 242, 243, and 244; and ENGL 102.*

### **NURS 242 - Family Health Concepts for Nursing Practice I 2.5:1.5:3**

Covers the safe nursing care of women, newborns, and childbearing families. This course is designed to develop the concepts of accountability, advocacy, behaviors, caring, clinical decision making, collaboration, communication, culture, diversity, ethics, evidence-based practice, family, grief and loss, health care systems, health policy, health/wellness/illness, illness, infection, oxygenation, perfusion, professional behaviors, quality improvement, reproduction, safety, sexuality, spirituality, teaching and learning, therapeutic communication, thermoregulation, time management/organization, and violence as they relate to safe nursing care during the antepartum, intrapartum, and postpartum periods. Special consideration is placed on events that are common in the normal life cycle. A course fee is required. *Enrollment is restricted to students in the Nursing AS program. Prerequisite: NURS 151; BIOL 221; and PSYC 209 with grades of C or higher. Co-requisite: NURS 243 and 244.*

### **NURS 243 - Family Health Concepts for Nursing Practice II 2.5:1.5:3**

Addresses safe family-centered nursing care to children. This course fosters the ability to adapt care to a child's developmental level and focuses on promoting health, as well as providing atraumatic care from infancy through adolescence. Health education is stressed throughout the course. This course is designed to further develop the concepts of accountability, advocacy, caring, cellular regulation, clinical decision making, collaboration, communication, culture, development, diversity, elimination, ethics, evidence-based practice, family, grief and loss, fluid and electrolyte balance, health care systems, health policy, health/wellness/illness, illness, infection, inflammation, metabolism, oxygenation, perfusion, professional behaviors, quality improvement, reproduction, safety, spirituality, teaching and learning, therapeutic communication, time management/organization, tissue integrity, and violence. A

course fee is required. *Enrollment is restricted to students in the Nursing AS program. Prerequisite: NURS 151; BIOL 221; and PSYC 209 with grades of C or higher. Co-requisite: NURS 242 and 244.*

### **NURS 244 - Advanced Behavioral Health Concepts for Nursing Practice 2.5:1.5:3**

Addresses the safe nursing care of patients, families, and groups with complex behavioral health needs. This course is designed to develop the concepts of accountability, advocacy, behaviors, caring, clinical decision making, cognition, collaboration, communication, culture, diversity, ethics, evidence-based practice, family, grief and loss, health care systems, health policy, health/wellness/illness, illness, mood and affect, professional behaviors, quality improvement, safety, self, spirituality, stress and coping, teaching and learning, therapeutic communication, time management/organization, and violence. In addition, this course presents the concepts related to behavioral health, societal implications involved in care, and the role of the professional nurse in various treatment settings. A course fee is required. *Enrollment is restricted to students in the Nursing AS program. Prerequisite: NURS 151; BIOL 221; and PSYC 101 with grades of C or higher. Co-requisite: NURS 242 and 243.*

### **NURS 250 - Complex Health Concepts for Nursing Practice 2.5:1:4.5**

Covers safe nursing care for adult patients from socially, economically, and culturally diverse backgrounds. This course is designed to further develop concepts of accountability, acid-base balance, advocacy, caring, clinical decision making, collaboration, communication, culture, diversity, ethics, evidence-based practice, family, grief and loss, health care systems, health policy, health/wellness/illness, illness, intracranial regulation, mobility, perfusion, professional behaviors, quality improvement, safety, spirituality, teaching and learning, therapeutic communication, and time management/organization. In addition, this course is structured to assimilate the concepts learned in previous semesters as students are able to demonstrate the knowledge, skills, and attitudes necessary to provide quality, individualized entry-level nursing care for professional nursing practice. A course fee is required. *Enrollment is restricted to students in the Nursing AS program. Prerequisites: NURS 241 and BIOL 221 with grades of C or higher.*

### **NURS 251 - Leadership and Management Concepts for Nursing Practice 4:2.5:4.5**

Enhances the professional role of the student as the focus on safe nursing care for adult patients continues. Emphasis is placed on the concepts of accountability, advocacy, caring,

clinical decision making, collaboration, communication, culture, diversity, ethics, evidence-based practice, family, health care systems, health policy, health/wellness/illness, illness, leadership and management, legal issues, managing care, oxygenation, perfusion, professional behaviors, quality improvement, safety, spirituality, teaching and learning, therapeutic communication, thermoregulation, and time management/ organization. In addition, this course focuses on transitioning the student to the graduate nursing role as they further develop a Clinician's role. Professionalism and ethical decision making - within the context of socially, economically, and culturally diverse backgrounds of patients - is addressed. A course fee is required. *Enrollment is restricted to students in the Nursing AS program. Prerequisite: NURS 250 with a grade of C or higher. Co-requisites: NURS 242, 243, and 244.*

## **NUTRITION**

**NUTR 104 - Nutrition 3:3:0**  
Introduction to nutrition principles including the digestive system; the six nutrients and their roles in the body; food sources with an emphasis on the anatomy, physiology and biochemical processes. Nutrient recommendations; nutritional needs during the life cycle. Nutritional factors in food selection and preparation of foods with an emphasis on the nutritional and chemical properties of foods. Nutrition in health and disease; weight control, diabetes, cardiovascular disease, dental health, cancer and nutrition. Conducting a diet history. Development of healthful recipes and menus. Evaluation of nutrition information for the public. Exercises include evaluation of the diet and recipes using computerized analysis; evaluation of body composition and sampling of foods with healthful properties such as vegetarian items, low fat, and foods with particular phytochemicals.

## **PARALEGAL STUDIES**

**PLGL 101 - Introduction to Paralegal Studies 3:3:0**  
Introduction to the American legal system. This course outlines the organization and jurisdiction of federal and state courts; introduces legal terminology, ethics and research discusses the role that the paralegal plays within the profession, as well as their responsibilities to lawyers; and surveys the general law areas, including torts, criminal law, property law, family law, business organizations, and estate law. *Pre or Co-requisite: ENGL 101. (FYS)*

**PLGL 102 - Legal Research and Writing I 3:3:0**  
Examination of the law library. An introduction to research in the various reference sources available to lawyers in determining applicable law; study of the processes of legal research and the writing of memoranda. Students gain

practical experience by completing research and writing assignments. *Prerequisite: PLGL 101 with a grade of C or higher.*

**PLGL 104 - Legal Research and Writing II 3:3:0**  
Continues the legal research techniques covered in PLGL 102 as students further examine various legal reference sources such as computer-assisted legal research. The course also includes extensive drafting of legal memoranda, correspondence, and trial briefs. A course fee is required. *Prerequisite: PLGL 102 with a grade of C or higher.*

**PLGL 105 - Contracts 3:3:0**  
Studies the legal issues pertaining to the formation, enforcement, and termination of contracts. This course specifically addresses the elements of a legally binding contract, the rights and obligations arising from contracts, and remedies for breach of contract, as well as an overview of Article II of the UCC. Emphasis is also placed upon the drafting of a variety of clauses, contracts and related documents. *Co-requisite: PLGL 101.*

**PLGL 201 - Civil Litigation I 3:3:0**  
Prepares students for work with an attorney throughout the course of a civil case, including the initial pleadings. Focus is placed on performance of special tasks that include investigative techniques, client and witness interviews, law office software use, and the drafting of initial pleadings. In addition, this course provides an introduction to rules of evidence as they apply to civil actions a review of state and federal court structure, and instruction in Rules of Civil Procedure. *Prerequisite: PLGL 101 with a grade of C or higher.*

**PLGL 202 - Civil Litigation II 3:3:0**  
Continues the topics covered in PLGL 201 with an emphasis on motion practice, discovery, settlements, and trial preparation. The course requires extensive drafting of relevant legal documents, including instruction in the use of standard forms. *Prerequisite: PLGL 201 with a grade of C or higher.*

**PLGL 203 - Family Law 3:3:0**  
Studies the legal problems pertaining to the formation and dissolution of the family unit. This course specifically addresses marriage, annulment, divorce, custody and support of children, adoption and protection from abuse. Emphasis is placed upon the preparation of documents and pleadings, as well as the interpersonal communication skills required to interact with clients. *Co-requisite: PLGL 101 with a grade of C or higher.*

**PLGL 204 - Estate Planning and Administration 3:3:0**  
An introduction to the more common forms of wills, trusts, powers of attorney, advanced directives for healthcare (living wills), other estate planning documents, and a survey of the fundamental principles of law applicable to each. Also included is a review of Pennsylvania's Intestate Succession law and a detailed analysis of the administration of estates, including the impact of applicable death transfer taxes. Students gain practical experience in preparing estate planning documents and inheritance tax returns. *Co-requisite: PLGL 101 with a grade of C or higher.*

**PLGL 206 - Employment Law 3:3:0**  
Introduces students to employment law terms and concepts relevant to the relationship between employer and employee from recruiting and hiring to termination. This course covers instruction in specific statutory law related to the workplace that includes American with Disabilities Act (ADA), Family and Medical Leave Act (FMLA), Age Discrimination in Employment Act (ADEA), and Title VII. Students receive instruction in the appropriate procedural law used in the different forums in which employment law issues are litigated. *Co-requisite: PLGL 101 with a grade of C or higher.*

**PLGL 207 - Bankruptcy Law 3:3:0**  
Overview of consumer bankruptcy law and procedures featuring practice in document preparation. *Co-requisite: PLGL 101 with a grade of C or higher.*

**PLGL 209 - Real Estate Law for Paralegals 3:3:0**  
Provides and overview of the law relating to the transfer of residential real property. This course surveys the multiple forms of ownership, agreements of sale, title searching procedures, and mortgage documents. Students are taught to draft deeds and prepare settlement sheets. *Co-requisite: PLGL 101.*

**PLGL 210 - Paralegal Ethics and Professionalism 3:3:0**  
Provides an in-depth analysis of legal ethics including unauthorized practice of law, confidentiality, and conflicts of interest. In addition, this course also discusses professionalism and job interview preparation. This course is designed to be taken at the end of the student's course of study. *Co-requisite: PLGL 102.*

**PLGL 211 - Administrative Law 3:3:0**  
Studies the creation, processes, and procedures of Federal and Pennsylvania administrative agencies and the laws that govern their behavior. This course specifically addresses the areas of workers' compensation, unemployment compensation, and Social Security disability, including eligibility requirements, procedures for filing claims and

appeals, hearings, and common issues that arise thereunder. *Co-requisite: PLGL 101 with a grade of C or higher.*

**PLGL 251 - PLGL Internship I 3:1:14**  
At least 200 hours of work experience in an approved law firm or law office. A comprehensive daily diary is required, and students meet on campus to discuss their experiences. Limited to qualified students enrolled in the Paralegal Studies degree or certificate program. *Prerequisite: PLGL 102 and PLGL 201 with a grade of C or higher, and permission of the Program Coordinator or Internship Instructor.*

**PLGL 252 - PLGL Internship II 3:3:0**  
At least 200 hours of work experience in an approved law office. A comprehensive daily diary is required, and students meet on campus to discuss their experiences. Limited to qualified students enrolled in the Paralegal Studies degree or certificate program. *Prerequisite: PLGL 251 with a grade of C or higher and permission of the Program Coordinator or Internship Instructor.*

## **PHILOSOPHY**

**PHIL 101 - Introduction to Philosophy 3:3:0**  
Classic philosophical problems are examined through classroom discussions and a wide range of historical readings. The foundations of Western philosophical thought are explored from such thinkers as Socrates, Descartes, Nietzsche, and Martin Luther King, Jr. *Prerequisite: Completion of all reading courses required by the College's Testing and Placement program and eligibility for enrollment in ENGL 101. (H&A)*

**PHIL 101H - Honors Introduction to Philosophy 3:3:0**  
Classic philosophical problems are examined through classroom discussions and a wide range of historical readings. The foundations of Western philosophical thought are explored from such thinkers as Socrates, Descartes, Nietzsche, and Martin Luther King Jr. Using a seminar and discussion-based approach; this course encourages independent, creative and critical inquiry and prepares students for the practical application of information by emphasizing effective research strategies and technologies congruent with the field of study. *Prerequisite: Completion of all developmental reading and writing courses required, as a result of the College Testing and Placement Program. (H&A)*

**PHIL 102 - Logic 3:3:0**  
Learning to think clearly by examining the logical principles of right reasoning. Practice in creating valid inductive and deductive arguments and spotting arguments and misleading ploys increase the student's powers of writing, speaking and critical thinking. (H&A)

**PHIL 200 - Comparative Religion 3:3:0**

Explores the central beliefs of the major world religions including Hinduism, Buddhism, Taoism, Confucianism, Judaism, Christianity, and Islam. This course addresses the varieties of religious experience from both Eastern and Western cultural traditions with an emphasis upon the similarities and differences among their major teachings. (H&A)

**PHIL 215 - Philosophy of Science 3:3:0**

An investigation into the conceptual structures and methods used in scientific thinking; the logic of scientific assumptions, theories, and laws; and the relation between scientific facts and ethical values.

**PHIL 225 - Ethics: Belief and Action 3:3:0**

Everyday moral problems are investigated through the insights of Aristotle, Kant, Mill, Sartre, and other philosophers to help students form their own philosophies of life. (H&A)

**PHIL 225H - Honor Ethics: Belief in Action 3:3:0**

Everyday moral problems are investigated through the insights of Aristotle, Kant, Mill, Sartre, and other philosophers to help students form their own philosophies of life. Using a seminar or discussion-based approach; this course encourages independent, creative and critical inquiry and prepares students for the practical application of information by emphasizing effective research strategies and technologies congruent with the field of study. (H&A) *Prerequisite: Completion of all developmental reading and writing courses required, as a result of the College Testing and Placement Program.*

**PHLEBOTOMY**

**PBT 100 - Introduction to Phlebotomy for Allied Health 2:1:1.5**

Covers the proper collection of blood specimens by venipuncture. This course addresses safety procedures, infection control, collection equipment, point-of-care testing, and specimen handling and transport. Students are required to perform venipuncture in class on one another. All individuals choosing to enroll in this course, including those with disabilities, must be able to perform the specific essential functions associated with phlebotomy or medical laboratory duties both with, and without, reasonable accommodations. Completion of this course does not make the student eligible for the certification exam. *Enrollment is restricted to those students in the following majors: Medical Assisting Certificate; Practical Nursing Certificate; Paramedic-EMT Certificate; Cardiovascular Technology AS (Invasive/Sonography); Medical Laboratory Technician AS;*

*Nursing AS; Radiologic Technology AS; and the Respiratory Therapist AS degree programs. Prerequisite: Completion of all developmental reading and writing courses required, as a result of the College Testing and Placement program.*

**PBT 101 - Phlebotomy 4:3:3**

Students acquire the skills necessary to properly obtain blood specimens for laboratory testing. Topics include safety procedures, infection control, medical terminology, specimen collection, collection equipment, point-of-care testing, customer service, and the role of the phlebotomist in the health care system. Students are required to perform venipuncture in this class. A course fee is required. *Prerequisite: Eligibility for enrollment into ENGL 101. Co-requisite: AH 140; and BIOL 111 or 121.*

**PBT 102 - Phlebotomy Clinical Experience 2:0:8**

Provides students the opportunity to apply skills taught in PBT 101 within a clinical setting. Under the direct supervision of a clinical preceptor at an affiliated clinical site, students are able to function competently as a Phlebotomist as they work a total of 120-hours (or 15 consecutive days) during the semester. A course fee is required. *Prerequisite: PBT 101 with a grade of C or higher.*

**PHYSICAL EDUCATION**

**PE 109 - Golf/Physical Fitness 1:1:1**

An introduction to fundamental skills. The course includes an introduction to the health related components of fitness and how the activity of golf can develop and contribute to overall fitness and wellness. (W)

**PE 110 - Tennis/Volleyball 1:1:1**

Tennis - Players learn beginner's skills: forehand, backhand grip and stroke, serve, volley, scoring, rules, purchase and care of equipment. Volleyball - Skills of passing, setting, spiking, serving, blocking and defense in order to prepare students for game situations. The course includes conditioning exercises for the major muscle groups and joint actions involved in volleyball. Emphasis is also on the importance of cardiovascular conditioning and the prevention of injury. A course fee is required.

**PE 119 - Tennis/Physical Fitness 1:1:1**

Tennis: Fundamental skills of tennis: forehand, backhand, groundstrokes and the serve. Physical Fitness: Introduces health related components of fitness and how the activity of tennis can develop and contribute to overall fitness and wellness. A course fee is required. (W)

**PE 130 - Water Strength and Stretch 1:1:1**  
Emphasizes developing muscular strength/endurance and flexibility by using various types of equipment in an aquatic environment. A variety of workouts are done in shallow water with a brief introduction to deep water. It is appropriate for both swimmers and non-swimmers. Cardiovascular-respiratory endurance and body composition, two other health related components of physical fitness, are also explored. A course fee is required. (W)

**PE 131 - Aquatics I - Beginning 1:1:1**  
Basic swimming skills presented include floats, recoveries, rhythmic breathing, elementary swim strokes, deep water adjustments, and treading water. Also, survival swimming skills, elementary diving skills, and non-swimming rescues will be presented. A course fee is required. (W)

**PE 132 - Aquatics II 1:1:1**  
Swimming skills, including the crawl, elementary back stroke, breast stroke, back crawl, butterfly, side stroke, survival swimming, and elementary forms of rescue. Prerequisite: Successful completion of PE 131 or the ability to pass a swimming test given during the first week of class. A course fee is required. (W)

**PE 133 - Aquatics III - Lifeguard Training 2:1.5:1.5**  
Water rescue and current spinal-injury management techniques. Special emphasis is placed on accident prevention, rescue skills, special-equipment rescues, pool maintenance, and administrative responsibilities. The American Red Cross Lifeguard Certificate and First Aid and CPR certification may be earned upon successful completion of the course. A course fee is required. Prerequisite: Demonstration of strong swimming skills in a pre-test given during the first week of class.

**PE 135 - Fitness and Dance Variations 1:1:1**  
Continuous movement for cardiovascular and muscular fitness. Various forms of dance are taught, including dance aerobics, jazz, folk, and country line dances. Particular emphasis is on dance as an activity that enhances the health-related components of physical fitness. A course fee is required. (W)

**PE 138 - Basic Fitness I 1:1:1**  
Current information about lifestyle factors affecting the participants' health, in particular the role of physical activity, exercise, and fitness. Strategies on how to improve health-related components of physical fitness are covered. Other topics include goal setting, motivation, and stress management. This course also involves participation in a variety of activities. A course fee is required. (W)

**PE 139 - Beginning Self-Defense 1:1:1**  
Course includes physical conditioning and basic strategies necessary to prevent and protect one's self and others in a threatening situation. Participation in a variety of cardiovascular and muscular fitness/flexibility conditioning exercises are integrated with practice and demonstration of basic self-defense skills: strikes, block, and holds. Particular emphasis is placed upon recognizing potentially dangerous situations and preventing and de-escalating threatening situations. A course fee is required. (W)

**PE 141 - Cardio-Kickboxing and Resistance Training 1:1:1**  
Designed to focus on the health-related benefits of moderate to vigorous exercise through the development of safe and effective kicks and punches. Flexibility, strength, and conditioning exercises for all major muscle groups are included as well as an emphasis on cardiovascular health through a kickboxing workout. An additional focus is on muscular strength and endurance exercises using free weights and other resistance training equipment. A course fee is required. (W)

**PE 142 - Aerobic Fitness I 1:1:1**  
Development of flexibility and muscular strength and endurance of the major muscle groups and the joint actions involved in a variety of aerobic conditioning activities. In addition, a strong emphasis is placed on the importance of the health benefits of cardiovascular conditioning and on the prevention of injury. A course fee is required. (W)

**PE 157 - Introduction to Ballroom and Rhythm Dance 1:1:1**  
Involves continual movement for cardiovascular and muscular fitness through participation in a variety of ballroom and rhythm dances. In addition, exercises to improve muscle strength, flexibility, posture, and balance are also introduced and practiced. A course fee is required.

**PE 166 - Fitness Walking and Resistance Training 1:1:1**  
Designed to focus on the health-related benefits of moderate to vigorous exercise through walking and resistance training. Flexibility, strength, and conditioning exercises for all major muscle groups are included, as well as an emphasis on cardiovascular health through a variety of walking activities. A course fee is required. (W)

**PE 169 - Water Exercise I 1:1:1**  
A stimulating, high energy, water workout that combines both shallow and deep water exercise. It is appropriate for both swimmers and non-swimmers. Activities are performed in deep water with the aid of flotation belts that allow participation without submerging. Emphasis is on improving

health-related components of physical fitness: flexibility, muscular strength and endurance, cardiovascular-respiratory endurance, and body composition. A course fee is required. (W)

**PE 178 - Yoga I** 1:1:1  
The foundation of a Hatha yoga practice. The class focuses on stretching, postures and alignment, breathing exercises, body/mind awareness, relaxation, meditation techniques, health benefits of practice, and key philosophical concepts in the yoga tradition. A course fee is required. (W)

**PE 179 - Power Yoga** 1:1:1  
Includes a challenging workout composed of sun salutations, standing postures, balance postures, and floor work to increase strength and flexibility. Also, there is a focus on controlled breathing and stabilization exercises to release tension and stress. A special emphasis is on the incorporation of stretching and relaxation techniques that contribute to stress management and overall health. A course fee is required. (W)

**PE 180 - Introduction to Pilates** 1:1:1  
Introduces the Pilates method of body conditioning that uniquely combines stretching and strengthening exercises. The emphasis of the course is to develop an appreciation for the mind/body connection through exercises that improve posture, provide flexibility and balance. A course fee is required. (W)

**PE 181 - Introduction to T'ai Chi** 1:1:1  
T'ai Chi. Taijiquan (T'ai Chi) is a Chinese martial art and a health art. This course introduces this ancient practice, including two short taiji forms and self-defense techniques. A major focus is also on health benefits obtained through regular practice. A course fee is required. (W)

**PE 182 - Core Stability** 1:1:1  
Designed to identify, strengthen, and stretch the muscles of the core in order to maintain overall spinal health. The term core stability refers to the strength and stability of the muscles of the torso, primarily spinal musculature, but also includes pelvic and abdominal musculature. Instruction also includes identifying wellness strategies that apply not only to spinal health but to other areas of health-related fitness. A course fee is required. (W)

**PE 183 - Exercise and Stress Management** 1:1:1  
Presents practical information designed to empower students to develop life-long strategies for managing stress. This course provides students with opportunities to explore a variety of relaxation techniques, such as meditation, yoga, t'ai chi, progressive muscle relaxation, and guided imagery.

Students participate in physical activity and exercise. The course also emphasizes the role of proper nutrition, regular physical activity, and physical fitness to create a balanced lifestyle. A course fee is required. (W)

**PE 184 - Exercise, Nutrition, and Weight Management** 1:1:1  
Presents the basic principles of nutrition and exercise training for the purpose of weight management. Special emphasis is on the role of regular physical activity and exercise to maintain an optimal body weight for overall health and wellness. A course fee is required. (W)

**PE 201 - Living Fit and Well** 3:2:1  
Derives from a wellness-based approach emphasizing the relationship of physical activity and fitness to optimal health. This course presents current information about lifestyle factors affecting the participants' health. Focus is on developing strategies that improve health-related components of physical fitness, such as flexibility, muscle strength, muscle endurance, cardiovascular-respiratory endurance, and body composition. Other topics to be discussed include: goal setting, motivation, nutrition, weight management, and stress management. Students develop individualized fitness plans and participate in a variety of physical activities. This is an excellent foundational course for pre-teaching Physical Education/ Exercise Science majors. A course fee is required. (W)

## **PHYSICAL SCIENCE**

**PHSC 113 - Introduction to Physical Science** 3:3:1  
An introduction to Physics and Chemistry for the non-science major. Students develop problem-solving skills and an understanding of the scientific method via an introduction to mechanics, waves, electricity and magnetism, nuclear/atomic physics, chemical elements, chemical bonding and reactions, and organic chemistry. Practical applications of scientific concepts in business and education are emphasized. A course fee is required. *Prerequisite: MATH 020 or MATH 033 (or MATH 051) with a grade of C or higher.* (SCI/LAB)

**PHSC 114 - Introduction to Earth and Space Sciences** 3:3:1  
An introduction to Astronomy, Geology, and Meteorology for the non-science major. Students develop problem-solving skills and an understanding of the scientific method via an introduction to the universe and solar system, earth materials and processes, weather, and the environment. Practical applications of scientific concepts in business and education are emphasized. A course fee is required. (SCI/LAB)

## **PHYSICS**

### **PHYS 105 - Concepts in Physics 3:3:1**

Designed for students who are not majoring in the sciences. The course provides a conceptual view of major topics in classical and modern physics with a limited mathematical approach. Topics include mechanics, energy, heat, optics, light, and special relativity, models of the atom, and electricity and magnetism. A course fee is required. *Prerequisite: MATH 051 or 045 with a grade of C or higher.* (SCI/LAB)

### **PHYS 151 - Physics for Technicians 4:3:3**

Is intended for students interested in pursuing careers as health technicians. The course covers such topics as mechanics, sound and electromagnetic waves, atomic structure, radioactivity and its production, electricity, circuits and magnetism, static and dynamic fluids. A three-hour laboratory is required with this course. A course fee is required. *Prerequisite: MATH 103, 119, or 121 with a grade of C or higher.*

### **PHYS 152 - Physics for Radiographers 4:3:3**

Designed for students who wish to become radiographers. Major topics include electromagnetic applications, diagnostic radiographic imaging systems, nuclear medicine, radiation therapy, and ultrasonography with major emphasis in the field of diagnostic radiology. *Prerequisite: PHYS 151.*

### **PHYS 153 - Rad Physics - College Based 3:3:0**

Reviews atomic structure and terminology and establishes knowledge of the nature and characteristics of radiation, x-ray production, and the fundamentals of photon interactions with matter. *This course is restricted to students who are enrolled in the Radiology Technology AS program. Prerequisite: PHYS 151 with a grade of C or higher.*

### **PHYS 161 - Physics for Imaging 3:2:3**

Discusses the topics essential to students interested in pursuing a career in diagnostic imaging. The course covers mechanics, sound and electromagnetic waves, electricity, circuits and magnetism, static and dynamic fluids, and radiation. *This course is restricted to students in the Diagnostic Medical Sonography AAS program. Prerequisite: MATH 103, 119, or 121 with a grade of C or higher.*

### **PHYS 201 - General Physics I 4:3:3**

Designed for students who are not majoring in the physical sciences. Course includes mechanics, heat, and sound. A course fee is required. *Prerequisite: MATH 104 or the equivalent, or MATH 105.* (SCI/LAB)

### **PHYS 202 - General Physics II 4:3:3**

A continuation of PHYS 201. Electricity and magnetism, waves, some optics, light, introduction to modern physics. A course fee is required. *Prerequisite: PHYS 201.* (SCI/LAB)

### **PHYS 211 - Physics for Engineers and Scientists I 4:3:3**

Designed for students who are majoring in physics or engineering; topics include mechanics and heat. Calculus oriented. A course fee is required. *Prerequisite: MATH 121 or equivalent with a grade of C or higher.* (SCI/LAB)

### **PHYS 212 - Physics for Engineers and Scientists II 4:3:3**

A continuation of PHYS 211. Topics include electricity and magnetism; light and wave mechanics. Calculus oriented. A course fee is required. *Prerequisite: MATH 122 and PHYS 211 or the equivalent with a grade of C or higher.*

### **PHYS 215 - Modern Physics 3:3:0**

Relativity; relativistic mechanics, electric and magnetic fields as seen from charges; quantum properties, elementary particles; nuclear atom; radioactivity. *Co-requisite: PHYS 202 or 212; and MATH 122 or equivalent with a grade of C or higher.*

### **PHYS 221 - Physics for Engineers and Scientists III 4:3:3**

Continues the topics covered in PHYS 212 as emphasis is provided upon relativity; relativistic mechanics; quantum properties; elementary particles; nuclear atom; radioactivity. Calculus is used to solve applied examples. A course fee is required. *Prerequisite: PHYS 212 with a grade of C or higher or equivalent. Co-requisite: MATH 122 or equivalent.*

## **PSYCHOLOGY**

### **PSYC 101 - General Psychology 3:3:0**

Examination and application of major principles of psychology including: an introduction to scientific and research methods, biological foundations, sensation and perception, learning and conditioning, human development, motivation and emotion, thinking, memory and intelligence, personality theories, stress and coping, social psychology, psychological disorders and their treatment. *Prerequisite: Completion of ENGL 003, 007, or 057 with a grade of C or higher.* (S&BS)

### **PSYC 101H - Honors General Psychology 3:3:0**

Examination and application of major principles of psychology including: an introduction to scientific and research methods, biological foundations, sensation and perception, learning and conditioning, human development, motivation and emotion, thinking, memory and intelligence, personality theories, stress coping, social psychology, psychological disorders and their treatment. Using a seminar

or discussion-based approach, this course encourages independent, creative and critical inquiry and prepares students for the practical application of information by emphasizing effective research strategies and technologies congruent with the field of study. *Prerequisite: Completion of ENGL 003, 007, or 057 with a grade of C or higher.*

**PSYC 111 - Stress Management Using Biofeedback 1:0:3**

Covers the use of biofeedback equipment designed for teaching the control of hand temperature, skin conductivity resistance, muscle tension, and brain waves. This course addresses basic feedback theory and its relation to anxiety and fear reduction, tension and stress relief, and applications to medical disorders. Biofeedback, as a methodology, is also discussed as it relates to traditional methods including transcendental meditation, yoga, Lamaze training, and meditative practices in many religions. Students participate in weekly relaxation exercises and individual biofeedback training sessions. A course fee is required.

**PSYC 201 - Educational Psychology 3:3:0**

Nature of the child; motivations; ability to adjust; capacity to learn on elementary and secondary levels; individual differences; use of standardized testing devices. *Prerequisite: PSYC 101 with a grade of C or higher.*

**PSYC 209 - Life Cycle Development 3:3:0**

Overview of human development, covering the lifespan of the individual. Includes integration of the basic concepts and principles of physical, cognitive and psychosocial development at each major stage of life; prenatal, infancy, toddlerhood, preschool, middle childhood, adolescence, young adulthood, middle adulthood, and old age. *Prerequisite: PSYC 101 with a grade of C or higher.*

**PSYC 211 - Psychology of Adolescence 3:3:0**

Growth and development; peer cultures; capacity to deal with emotions; personality; sex; and moral behaviors. (Occasional offering.) *Prerequisite: PSYC 101 with a grade of C or higher.*

**PSYC 212 - Child Growth and Development 3:3:0**

The combined process of mental development and physical growth of the child, including the nature of children and of learning at various levels of development from the prenatal to the adolescent stage. *Prerequisite: PSYC 101 with a grade of C or higher.*

**PSYC 213 - Abnormal Psychology 3:3:0**

Survey of theories and etiology of abnormal behavior and its social significance; description of symptoms; consideration of techniques of therapy and theories of prevention. *Prerequisite: PSYC 101 with a grade of C or higher. (S&BS)*

**PSYC 216 - Human Sexuality 3:3:0**

Comprehensive review of the biological, emotional, and psychosocial aspects of human sexual behavior. (Occasional offering.) *Prerequisite: PSYC 101 with a grade of C or higher.*

**PSYC 221 - Social Psychology 3:3:0**

Dynamics of interpersonal behavior in various social contexts. Topics include communication; attitude measurement and change; interpersonal attraction; aggression; altruism and prosocial behavior, conformity, compliance and obedience; small-group behavior; leadership; prejudice; and community assessment. *Prerequisite: PSYC 101 with a grade of C or higher. (S&BS)*

**PSYC 226 - Biopsychology 3:3:0**

Studies the manner by which the brain mediates behavior, emotion, and cognition. This course specifically addresses sensory systems, neural development, emotion, learning, memory, reproduction, and neurological and psychological disorders. *Prerequisite: PSYC 101 with a grade of C or higher.*

**PSYC 228 - Child Development in Context 3:3:0**

Provides students with a unique opportunity to gain experience in ways to improve the lives of children through this 20-day trip to Romania. This course uses Romania as a case study to examine the impacts that individual biopsychological, social, political, and economic factors have on the development and welfare of children. HACC's Romanian hosts and partners, New Horizons Foundation (FNO), provide students the opportunity to participate in service learning groups, organized by Romanian youth that help demonstrate the power that service can have on building social capital and creating sustainable change that benefits children. Classes meet on campus during the semester with the trip taking place after final exams. *Prerequisite: PSYC 101 with a grade of C or higher; or permission of the Instructor.*

**PSYC 229 - Multicultural Psychology 3:3:0**

Examines the manner by which cultural experiences shape human psychology. This course specifically addresses a culture's effects on human thinking and self-concept; cultural variations of values, motivations, and feelings; a culture's effects on perception and understanding of the world, its influences on human relationships, mental and physical health, and the variables that can affect how individuals cope with and adapt to new cultures. *Prerequisite: PSYC 101 with a grade of C or higher. (S&BS)*

**PSYC 241 - Research Design and Analysis I 4:3:3**

Introduces students to the statistics used in the behavioral sciences; specifically the use of descriptive and inferential

statistical tests. Students learn to analyze both by hand and by using Statistical Package for the Social Sciences (SPSS). Basic research design is introduced as it applies to data analysis. Students conduct simple projects in order to gain experience applying the various statistical tests. A course fee is required. *Prerequisite: PSYC 101 with a grade of C or higher, and eligibility for enrollment in MATH 103.*

### **PSYC 242 - Research Design and Analysis II 4:3:3**

Investigation of techniques required to conduct valid research in the social sciences. Topics include formulation of research ideas, development of research studies, analysis of the results, and presentation of the findings. A course is required. *Prerequisite: PSYC 241 with a grade of C or higher.*

## **RADIOLOGIC TECHNOLOGY**

### **RADT 100 - Introduction to Radiographic Procedures 3:2:3**

Covers the fundamentals of radiographic procedures of the upper limb, lower limb, lower limb, and pelvic girdle. This course involves both didactic instruction and laboratory demonstration and practice of these procedures. In addition, this is a web-enhanced course with multi-media digital content. A course fee is required. *Enrollment is restricted to students in the clinical component of the Radiologic Technology AS program. Prerequisite: BIOL 121, ENGL 101, and RADT 102 with grades of C or higher. Co-requisite: RADT 106.*

### **RADT 101 - Imaging Equipment 3:2:2**

Provides students with foundational knowledge-of stationary and mobile radiographic, fluoroscopic, and tomographic equipment. Quality assurance, as it relates to radiographic equipment, is also included. This is a web-enhanced course with multi-media digital content. A course fee is required. *Enrollment is restricted to students in the Radiologic Technology AS program. Prerequisite: RADT 105 with a grade of C or higher.*

### **RADT 102 - Introduction to Radiologic Technology 3:1.25:7.75**

Introduces students to the field of Radiologic Technology. This course covers the fundamentals, terminology, ethics and law as it pertains to the radiologic sciences. Also included is didactic, laboratory, and clinical instruction that emphasizes patient care and management. Students spend 56-hours of clinical time at a healthcare facility. A course fee is required. *Enrollment is restricted to students in the Radiologic Technology AS program. Co-requisite: ENGL 101 and BIOL 121.*

### **RADT 104 - Introduction Radiologic Technology for Radiology Informatics 4:3:4.5**

Introduces students to the field of Radiologic Technology. This course covers the medical imaging fundamentals, terminology, ethics, the clinical environment, and the law as it pertains to medical imaging. Students are able to spend a total of 40-hours in a clinical setting, rotating through various radiology modalities, observing and assisting healthcare professionals within these departments. Students are required to submit health and criminal background clearances in order to work at the clinical sites. A course fee is required.

### **RADT 105 - Radiation Protection and Biology 2:2:0**

Presents an overview of the principles of radiation protection, including the responsibilities of the radiographer for patients, personnel, and the public. This course incorporates radiation health and safety requirements with those of the federal and state regulatory agencies, accreditation agencies, and health care organizations. An overview of the principles involved in the interaction of radiation with living systems is also discussed, as well as the radiation effects on molecules, cells, tissues and the body as a whole. Factors affecting biological response are covered, including acute and chronic effects of radiation. This is a web-enhanced course with multi-media digital content. *Enrollment is restricted to students in the clinical component of the Radiologic Technology AS program. Prerequisite: PHYS 151 with a grade of C or higher.*

### **RADT 106 - Radiologic Technology Clinical Introduction 3:0:24**

Applies the theory learned in RADT 100 in the clinical setting. This is a web-enhanced course with digital materials for reviewing clinical skills. This course requires students to spend 336-hours of clinical time at an approved healthcare facility. A course fee is required. *Enrollment is restricted to students in the clinical component of the Radiologic Technology AS program. Prerequisite: BIOL 121; ENGL 101; and RADT 102 with grades of C or higher. Co-requisite: RADT 100.*

### **RADT 107 - Radiographic Procedures I 3:2:3**

Builds upon knowledge and skills obtained in RADT 100. This course is designed with both a didactic and laboratory component with emphasis placed on the demonstration and practice of intermediate radiographic and fluoroscopic procedures. This is a web-enhanced course with multi-media digital content. A course fee is required. *Enrollment is restricted students in the clinical component of the Radiologic Technology AS program. Prerequisite: RADT 100 and 106 with grades of C or higher. Co-requisite: RADT 109.*

**RADT 108 - Radiation Characteristics and Production 3:3:0**

Establishes a basic knowledge of atomic structure and terminology. The course also presents the nature and characteristics of radiation, x-ray production and the fundamentals of photon interactions with matter. This is a web-enhanced course with multi-media digital content. *Enrollment is restricted to students in the Radiologic Technology AS program. Prerequisite: MATH 103 and PHYS 151 with grades of C or higher.*

**RADT 109 - Radiologic Technology Clinical I 2:0:21**

Applies the theory learned in RADT 107 in the clinical setting. This is a web-enhanced course with digital materials for reviewing clinical skills. This course requires students to spend 288-hours of clinical time at an approved healthcare facility. A course fee is required. *Enrollment is restricted to students in the clinical component of the Radiologic Technology AS program. Prerequisite: RADT 106 & 100 with grades of C or higher. Co-requisite: RADT 107.*

**RADT 110 - Radiology Basics for Informatics 4:4:0**

Provides students with knowledge of the various medical imaging modalities. Students are taught how images are generated, the typical exam types, the basic operational procedures for exams, and the image characteristics for each modality's exams. In addition, this course covers image processing, viewing, and quality control (QC)/quality assurance (QA) for each modality. *Prerequisite: RADI 104 with a grade of C or higher; Eligibility for enrollment into MATH 103 as required by the College Placement and Testing Program.*

**RADT 111 - Introduction to Radiological Sciences 3:3:0**

Provides students with foundational knowledge of radiation production and characteristics, radiation protection and biology, radiographic equipment and radiographic imaging and processing. This is a web-enhanced course with multi-media digital content. *Enrollment is restricted to students in the Radiologic Technology AS program. Co-requisite: MATH 103.*

**RADT 201 - Radiographic Procedures II 3:2:3**

Builds upon the knowledge and skills obtained in RADT 107. This course is designed with both a didactic and laboratory component and emphasizes demonstration and practice of advanced and special radiographic procedures. This is a web-enhanced course with multi-media digital content. A course fee is required. *Enrollment is restricted to students in the clinical component of the Radiologic Technology AS program. Prerequisite: RADT 100 & 106 with grades of C or higher. Co-requisite: RADT 203.*

**RADT 202 - Imaging Equipment 2:1.5:1.5**

Provides students with foundational knowledge of stationary and mobile radiographic, fluoroscopic, and tomographic equipment. Quality assurance, as it relates to radiographic equipment, is also included. This is a web-enhanced course with multi-media digital content. A course fee is required. *Enrollment is restricted to students in the Radiologic Technology AS program. Prerequisite: RADT 105 with a grade of C or higher.*

**RADT 203 - Radiologic Technology Clinical II 3:0:24**

Applies the theory learned in RADT 201 in the clinical setting. This is a web-enhanced course with digital materials for reviewing clinical skills and requires students to spend 336-hours of clinical time at an approved healthcare facility. A course fee is required. *Enrollment is restricted to students in the clinical component of the Radiologic Technology AS program. Prerequisite: RADT 107 and 109 with grades of C or higher. Co-requisite: RADT 201.*

**RADT 205 - Radiographic Pathology 2:2:0**

Introduces theories of disease causation and the pathophysiologic disorders that compromise health systems. Etiology, pathophysiology responses, clinical manifestations, radiographic appearance, and management of alterations in body systems are presented. This is a web-enhanced course with multi-media digital content. *Enrollment is restricted to students enrolled in the Radiologic Technology AS program.*

**RADT 207 - Radiologic Technology Clinical III 3:0:24**

Applies the theory taught in RADT 100, 107, 201, and 209 in the clinical setting. This is a web-enhanced course with digital materials for reviewing clinical skills and requires students to spend 336-hours of clinical time at an approved healthcare facility. A course fee is required. *Enrollment is restricted to students in the clinical component of the Radiologic Technology AS program. Prerequisite: RADT 201 and 203 with grades of C or higher. Co-requisite: RADT 209.*

**RADT 208 - Imaging and Processing 3:2.5:1.5**

Provides students with knowledge of factors that govern and influence the production and recording of radiologic images. The emphasis is placed on digital imaging with related accessories. Class demonstrations/labs are used to demonstrate application of theory. This is a web-enhanced course with multi-media digital content. A course fee is required. *Enrollment is restricted to students in the Radiologic Technology AS program. Prerequisite: RADT 108 with a grade of C or higher.*

**RADT 209 - Image Analysis 2:1:3**

Provides a foundation for analyzing radiographic images. This course covers the importance of minimum imaging

standards, problem-solving techniques for image evaluation, and the factors that can affect image quality. Actual images are included for analysis. This is a web-enhanced course with multi-media digital content. A course fee is required. *Enrollment is restricted to students in the Radiologic Technology AS program. Prerequisite: RADT 201 with a grade of C or higher.*

**RADT 210 - Introduction to Computed Tomography 1:1:0**

Introduces the basic principles and procedures related to Computed Tomography (CT) imaging. *Prerequisite: RADT 101, RADT 103 and RADT 201 with grades of C or higher.*

**RADT 211 - Radiologic Technology Clinical IV 3:0:27**

Applies advanced skills and theory in the clinical setting. This is a web-enhanced course with digital materials for reviewing clinical skills. This course requires students to spend a total of 384-hours of clinical time at an approved healthcare facility. A course fee is required. *Enrollment is restricted to students in the Radiologic Technology AS program. Prerequisite: RADT 207 & 209 with grades of C or higher.*

**RADT 212 - Radiologic Technology Seminar 2:1:2**

Prepares students for the successful completion of the American Registry of Radiologic Technologies (ARRT®) examination. This course provides an overview of topics that have been covered throughout the Radiologic Technology program including the review of registry content areas, the enactment of case scenarios and mock registries. A course fee is required. *Enrollment is restricted to students in the Radiologic Technology AS program. Prerequisite: RADT 103, 207, and 209 with grades of C or higher.*

**RADT 220 - Computed Tomography: Introduction to Clinical Practice 1.5:0:9.5**

Introduces students to the Computed Tomography (CT) clinical setting and provides them with the basic clinical skills needed to begin performing CT scans. This course is designed for the Radiologic Technologists registered in Radiography or Nuclear Medicine through the American Registry of Radiologic Technologist (ARRT) or Nuclear Medicine Technology Certification Board (NMTCB). Initially, students complete 21-hours in a laboratory setting or healthcare facility, in which they are expected to perform simulated skills. They then move on to complete a total of 112 hours of clinical work at an assigned healthcare facility where they begin scanning patients under the direct supervision of a technologist. A course fee is required. *This course is restricted to ARRT or NMTCB credentialed technologists, or eligible graduates, in radiography or nuclear medicine. Co-requisite: RADT 222 and 224; Signature of the Radiologic Technology Program Director is required.*

**RADT 221 - Computed Tomography: Clinical Practice 2:0:16**

Allows students the opportunity to work in healthcare facility for a total of 240-hours to provide the clinical skills necessary to become employed as a Computed Tomography (CT) Technologist. This course is designed for Radiologic Technologists Registered (or registry eligible new graduates) in Radiography through the American Registry of Technology Certification Board (NMTCB). It is also designed to meet the ARRT CT clinical requirements for the technologist who is seeking to obtain a post primary certification in CT. A course fee is required. *Prerequisite: RADT 220 with a grade of C or higher. Co-requisite: RADT 223 and 225; Signature of the Radiologic Technology Program Director is required.*

**RADT 222 - Computed Tomography: Procedures, Patient Care, and Safety I 3:3:0**

Focuses on the procedures for Computed Tomography (CT) imaging of the head, neck, thorax, abdomen, and pelvis. The procedures include, but are not limited to, indications for the procedure, patient education, preparation, orientation and positioning, patient history and assessment, contrast media usage, scout image, selectable scan parameters, filming and archiving of the images, and radiation safety. CT procedures are taught for differentiation of specific structures, patient symptomatology, and pathology and are reviewed for quality, anatomy, and pathology. This course is one of four didactic courses designed for Radiologic Technologists Registered (or registry eligible new graduates) in Radiography through the American Registry of Radiologic Technologists (ARRT) or in Nuclear Medicine through the Nuclear Medicine Technology Certification Board (NMTCB). This course is also designed for the technologist who is seeking to obtain one of the following: post primary certification in Computed Tomography (CT) through the ARRT, or NMTCB, employment as a CT Technologist, ARRT category A and NMTCB continuing education credits, or is a medical imaging professional seeking to complete the HACC's Radiologic Imaging option within the Health Science AAS degree. *Signature of the Radiologic Technology Program Director is required.*

**RADT 223 - Computed Tomography: Procedures, Patient Care, and Safety II 3:3:0**

Focuses on the procedures for Computed Tomography (CT) imaging of the spine, extremities, trauma patient, radiation therapy patient, and the pediatric patient. The procedures include, but are not limited to, indications for the procedure, patient education, preparation, orientation and positioning, patient history and assessment, contrast media usage, scout image, selectable scan parameters, filming and archiving of the images. Special procedure applications are also discussed.

CT procedures are taught for differentiation of specific structures, patient symptomology and pathology and are reviewed for quality, anatomy, and pathology. This course is one of four didactic courses designed for Radiologic Technologists Registered (or registry eligible new graduates) in Radiography through the American Registry of Radiologic Technologists (ARRT) or in Nuclear Medicine through the Nuclear Medicine Technology Certification Board (NMTCB). This course is also designed for the technologist who is seeking to obtain one of the following: post primary certification in Computed Tomography (CT) through the ARRT, or NMTCB, employment as a CT Technologist, ARRT category A and NMTCB continuing education credits, or is a medical imaging professional seeking to complete the HACC's Radiologic Imaging option within the Health Science AAS degree. *Signature of the Radiologic Technology Program Director is required.*

**RADT 224 - Computed Tomography: Sectional Anatomy and Pathology 3:3:0**

Focuses on a detail study of gross anatomical structures and common diseases that are diagnosable via Computed Tomography (CT). This course identifies the gross anatomical structures in axial (transverse), sagittal, coronal and orthogonal (oblique) planes while simultaneously stressing the characteristic appearance of each anatomical structure on CT, Magnetic Resonance (MR) and ultrasound images. Additionally, each disease or trauma process diagnosable via CT is examined and identified on the CT images. This course is one of four didactic courses designed for Radiologic Technologists Registered (or registry eligible new graduates) in Radiography through the American Registry of Radiologic Technologists (ARRT) or in Nuclear Medicine through the Nuclear Medicine Technology Certification Board (NMTCB). This course is also designed for the technologist who is seeking to obtain one of the following: post primary certification in Computed Tomography (CT) through the ARRT or NMTCB, employment as a CT Technologist, ARRT category A and NMTCB continuing education credits, or is a medical imaging professional seeking to complete HACC's Radiologic Imaging option within the Health Science AAS degree. *Signature of the Radiologic Technology Program Director is required.*

**RADT 225 - Computed Tomography: Physics, Instrumentation, and Imaging 3:3:0**

Provides students with a holistic overview of the physical principles and instrumentation involved in Computed Tomography (CT). This course is one of four didactic courses designed for Radiologic Technologists Registered (or registry eligible new graduates) in Radiography through the American Registry of Radiologic Technologist (ARRT) or in Nuclear

Medicine through the Nuclear Medicine Technology Certification Board (NMTCB). This course is also designed for the technologist who is seeking to obtain one of the following: post primary certification in Computed Tomography (CT) through the ARRT or NMTCB, employment as a CT technologist, ARRT category A and NMTCB continuing education credits, or is a medical imaging professional seeking to complete HACC's Radiologic Imaging option within the Health Science AAS degree. *Signature of the Radiologic Technology Program Director is required.*

**RADIOLOGY INFORMATICS**

**RADI 100 - Digital Imaging and Communications in Medicine (DICOM) 2:1.5:1.5**

Introduces the student to the fundamental concepts and theory of Digital Imaging and Communications in Medicine (DICOM) as it relates to the picture archiving and communication system (PACS) environment. A course fee is required.

**RADI 101 - Health Level 7 (HL7) II 3:2.5:1.5**

Introduces the student to the fundamental concepts and theory of Health Level 7 (HL7) as it relates to the picture archiving and communication system (PACS) environment. A course fee is required.

**RADI 102 - Radiology Informatics (RADI) Regulations, Quality Control, and Security 3:3:0**

Introduces students to the basics of information security, HIPAA, and patient privacy as they apply to the healthcare and the picture archiving and communication systems (PACS) environment. Students also gain exposure to the fundamental concepts of a PACS quality control and the applicable regulations.

**RADI 103 - Picture Archiving & Communication Systems (PACS) Interface and Systems Analysis I 2:1.5:1.5**

Introduces students to the picture archiving and communication systems (PACS) components, workflow, and administration functions related to radiology informatics. A course fee is required. *Prerequisite: RADI 110 with a grade of C or higher.*

**RADI 201 - Radiology Informatics (RADI) Project Management I 3:3:0**

Allows students to begin the planning process for procuring and implementing a picture archiving and communication system (PACS) for a healthcare environment. Students create a "PACS Plan" that involves designing an imaging department, evaluating PACS vendors, communicating with the PACS implementation team, and selecting and

implementing a PACS that is most appropriate for the student's plan. This project requires students to consider budgets, installation of hardware/software, policies and procedures, and end-user training. *Prerequisite: RADI 103 with a grade of C or higher. Co-requisite: RADI 202.*

**RADI 202 - Picture Archiving and Communication Systems (PACS) Interface and Systems Analysis II** **3:2.5:1.5**

Builds upon the information introduced to students in RADI 103. This course focuses on the integration of the picture archive and communications system (PACS) with all other imaging modalities, speech recognition software, electronic health records (EHR), Integrating the Healthcare Enterprise (IHE), health information systems (HIS), and radiology information systems (RIS). A course fee is required. *Prerequisite: RADI 103 with a grade of C or higher.*

**RADI 203 - Radiology Informatics (RADI) Advanced Concepts I** **4:4:0**

Builds upon the concepts covered in RADI 100, 101, 103 and 202 pertaining to the picture archiving and communication systems (PACS) interface, digital imaging and communications in medicine (DICOM), and Health Level 7 (HL7) language. This course also introduces the foundational concepts of the electronic health record (EHR). *Prerequisite: RADI 101 and 202 with grades of C or higher.*

**RADI 204 - Radiology Informatics (RADI) Advanced Concepts II** **4:4:0**

Continues the topics covered in RADI 203 in which students are taught advanced concepts relating to the electronic health record (EHR) and its integration with the picture archive and communication system (PACS). *Prerequisite: RADI 203 with a grade of C or higher. Co-requisite: RADI 205.*

**RADI 205 - Radiology Informatics (RADI) Project Management II** **2:2:0**

Continues the planning process for procuring and implementing a picture archiving and communication system (PACS) for a healthcare environment that began in RADI 201. Students complete the "PACS Plan" and now design a healthcare enterprise and integrate the selected PACS into the enterprise environment. *Prerequisite: RADI 201 with a grade of C or higher. Co-requisite: RADI 204.*

**RADI 210 - Radiology Informatics (RADI) Clinical I** **3:0:24**

Provides students the opportunity to apply their radiology informatics skills in the picture archiving and communication systems (PACS) clinical setting under the supervision of a PACS or Information Systems administrator. Students spend a total of 24 hours per week working in the PACS department

of a healthcare facility at a HACC affiliated clinical site or at a prearranged worksite, upon instructor approval. Students maintain a portfolio of their clinical experiences. Students are required to submit to health and criminal background clearances in order to work at a clinical site. A course fee is required. *Enrollment is restricted to students in the Radiology Informatics AAS program. Prerequisite: RADI 103, RADT 110, and COMM 203 with grades of C or higher.*

**RADI 211 - Radiology Informatics (RADI) Clinical II** **3:0:24**

Provides students the ability to continue applying their radiology informatics skills in the picture archiving and communication systems (PACS) clinical setting under the supervision of a PACS or Information Systems administrator. Students spend a total of 24 hours per week working in the PACS department of a healthcare facility at a HACC affiliated clinical site or at a prearranged worksite, upon instructor approval. Students maintain a portfolio of their clinical experiences. Students are required to submit to health and criminal background clearances in order to work at a clinical site. A course fee is required. *Enrollment is restricted to students in the Radiology Informatics AAS program. Prerequisite: RADI 210 with a grade of C or higher. Co-requisite: RADI 203.*

## **REAL ESTATE**

**RE 101 - Real Estate Fundamentals** **3:3:0**

Covers the practices of real estate in Pennsylvania. This course provides the foundation for further study, as it is designed to familiarize students with the language, principles, and laws governing the real estate profession. Emphasis is placed on the fundamental concepts of land, property, and rights in realty and the practices, methods, and laws that govern the conveyance of these rights.

**RE 102 - Real Estate Practice** **3:3:0**

Outlines the role of a real estate agent in the field of residential brokerage. This course introduces students to all facets of the real estate business, including fields of specialization. Students develop a working knowledge of the necessary forms and documents, including real estate mathematics as they become acquainted with the basic techniques, procedures, regulations, and ethics involved in a real estate transaction. *Pre/Co-requisite: RE 101 with a grade of C or higher.*

## **RESPIRATORY THERAPY**

**RESP 100 - Introduction to Respiratory Care** **2:2:0**

Introduces respiratory care as an allied health specialty with emphasis on role delineation, scope of practice, history, and

the organization of the profession. This course emphasizes basic science concepts including gas physics, cleaning and the sterilization of equipment, and computer technology. Student success topics are also covered. This is a web-enhanced class. *Prerequisite: Eligibility for enrollment into MATH 055 (or MATH 051). This course must be completed within 24 months of starting the respiratory therapy clinical component.*

**RESP 120 - Cardiopulmonary Anatomy and Physiology 4:4:0**

Covers anatomy and physiology of the heart and lungs. This course discusses the factors influencing ventilation, ventilation and perfusion relationships, regulation of ventilation, and gas transport. Metabolic and respiratory acid-base balance, with stress on arterial blood gas interpretation, is also included. *Enrollment is restricted to students in the Respiratory Therapist AS program. Non-majors need permission of the Program Director. Prerequisite: CHEM 100 with a grade of C or higher. RESP 100 must be successfully completed within 24 months of taking this class.*

**RESP 130 - Hospital Orientation 2:1:4**

Covers the practitioner/patient relationship, patient rights, and the teamwork of healthcare workers. This course requires that the student spend four hours per week under the direct supervision of an instructor in a clinical affiliate. Topics include isolation techniques, patient positioning, lifting and moving, vital signs, charting, and patient interaction. Students rotate through various departments in order to gain an understanding of the roles of auxiliary services. A course fee is required. *Enrollment is restricted to students in the Respiratory Therapist AS program. Prerequisite: CHEM 100 with a grade of C or higher. Majors need the American Heart Association Basic Life Support (BLS) Certification. RESP 100 must be successfully completed within 24 months of taking this class.*

**RESP 140 - Oxygen Administration 4:3:3**

Covers basic respiratory care equipment and procedures with and introduction to medical gas therapy, humidification and nebulization devices, and oxygen analyzers. This course emphasizes humidity/aerosol therapy and oxygen delivery systems and includes discussion of the rationale for use, proper administration, and theory of operation and maintenance. Arterial blood gas sampling and Sustained Maximal Inspiration (SMI/ISB) are also covered. A course fee is required. *Enrollment is restricted to students in the Respiratory Therapist AS program. Prerequisite: RESP 120, 130, 160, and 200 with a grade of C or higher.*

**RESP 150 - Pharmacology 3:3:0**

Covers the safe use of therapeutic drugs. This course emphasizes drug actions, routes of administration, dosage

calculation, and adverse reactions. A course fee is required. *Enrollment is restricted to students in the Respiratory Therapist AS program. Prerequisite: RESP 120, 130, 160 and 200 with a grade of C or higher.*

**RESP 160 - Patient Assessment 3:3:0**

Covers patient chest assessment, auscultation of breath sounds, principles of chest x-ray and interpretation, and ECG interpretation. *Enrollment is restricted to students in the Respiratory Therapist AS program. Prerequisite: CHEM 100 with a grade of C or higher.*

**RESP 170 - Therapeutics 4:3:3**

Covers procedures such as airway insertion, airway care, airway removal, manual resuscitators, and bronchopulmonary drainage therapy. This course also covers indications, contraindications, and objectives for administration of these modalities to include weaning parameters and medication administration. This is a web-enhanced course. A course fee is required. *Enrollment is restricted to students in the Respiratory Therapist AS program. Prerequisite: RESP 140, 150, and 175 with grades of C or higher.*

**RESP 175 - Clinical Practice I 2:0:16**

Allows students to gain experience under the direct supervision of a clinical instructor for an average of sixteen hours per week. This course focuses on oxygen administration, humidity/aerosol therapy, patient assessment, and electrocardiograms (ECG's). Clinical experience includes observation, patient rounds, clinical simulation, and practical work situations. Case studies are assigned. A course fee is required. *Enrollment is restricted to students in the Respiratory Therapist AS program. Prerequisite: RESP 120, 130, 160, and 200 with a grade of C or higher. Co-requisite: RESP 140.*

**RESP 200 - Cardiopulmonary Diseases 3:3:0**

Covers the pathophysiology, clinical signs and symptoms, treatment, and prognosis of cardiopulmonary disorders. *Enrollment is restricted to students in the Respiratory Therapist AS program. Non-majors need permission of the Program Director. Prerequisite: CHEM 100 with a grade of C or higher. RESP 100 must be successfully completed within 24 months of taking this class.*

**RESP 205 - Clinical Practice II 2:0:16**

Allows students to gain practical experience under the direct supervision of a clinical instructor for an average of sixteen hours per week. This course focuses on therapeutic modalities that include positive pressure adjuncts, therapeutic gases, bronchopulmonary drainage, manual resuscitation, and exercise therapy. Airway care is emphasized and indications, contraindications, and objectives for administration are

stressed. Clinical experience includes observation, patient rounds, clinical simulation, and practical work situations. Case study presentations are assigned. A course fee is required. *Enrollment is restricted to students in the Respiratory Therapist AS program. Prerequisite: RESP 175 with a grade of C or higher.*

**RESP 210 - Critical Care 6:5:4**  
Covers patient management, weaning techniques, monitoring, and a comprehensive study of ventilators commonly used in hospitals. This course also discusses hemodynamics, chest drainage, nutrition, arterial blood gas (ABG) analysis, bronchopulmonary drainage, home care ventilation, pulmonary rehabilitation, and exercise therapy. A course fee is required. *Enrollment is restricted to students in the Respiratory Therapist AS program. Prerequisites: RESP 170 and 205 with a grade of C or higher.*

**RESP 230 - Cardiopulmonary Laboratory Procedures 2:2:1**  
Covers theory, application, and interpretation of pulmonary laboratory studies. This course also includes an introduction to pulmonary stress testing and sleep studies. A course fee is required. *Enrollment is restricted to students in the Respiratory Therapist AS program. Prerequisite: RESP 140, 150 and 175 with grades of C or higher.*

**RESP 235 - Clinical Practice III 2:0:16**  
Allows students to gain experience under the direct supervision of a clinical instructor. This course addresses mechanical ventilation, arterial blood gas sampling, analysis and interpretation, and hemodynamic monitoring. The clinical experience involves observation, patient rounds, clinical simulation, and practical work situations. Case studies are also assigned. A course fee is required. *Enrollment is restricted to students in the Respiratory Therapist AS program. Prerequisite: RESP 205 with a grade of C or higher, and current American Heart Association Advanced Cardiac Life Support Certification. Co-requisite: RESP 210.*

**RESP 245 - Clinical Practice IV 2:0:16**  
Allows students to obtain clinical experience under the direct supervision of a clinical instructor. Students gain exposure to neonatal and pediatric respiratory care, critical care, and adult respiratory care review. The actual clinical experience includes observation, patient rounds, clinical simulation, and practical work situations. Case studies are assigned. Students are required to pass comprehensive written, laboratory, simulation, and oral examinations in all aspects of respiratory care to complete this course as well as having to complete assigned professional development credits. A course fee is required. *Enrollment is restricted to students in the*

*Respiratory Therapist AS program. Prerequisite: RESP 235 with a grade of C or higher. Co-requisite: RESP 270.*

**RESP 270 - Neonatal/Pediatric Respiratory Care 4:3:3**  
Discusses fetal development, assessment of the newborn, and pathophysiology of cardiopulmonary diseases common to neonates and pediatric patients. This course emphasizes treatments that are commonly used. A course fee is required. *Enrollment is restricted to students in the Respiratory Therapist AS program. Prerequisite: RESP 210 and 235 with grades of C or higher. Co-requisite: RESP 245.*

## SCIENCE

**SCI 100 - Science First-Year Seminar 1:1:0**  
Provides an overview of science in the college environment for students pursuing a science degree. In addition, students are taught about academic tools for success, educational technology, professional expectations, scientific literacy, goal-setting, self-management, self-awareness, occupational research, transfer schools and life planning. (FYS)

## SOCIOLOGY

**SOCI 201 - Introduction to Sociology 3:3:0**  
Focuses on the relations between people and their social institutions, including problems that derive from these relations. Topics include culture, society, groups, social change, institutions (family, education, religion, etc.). *Prerequisite: Completion of all developmental reading and writing courses required as a result of the College Testing and Placement program. (S&BS)*

**SOCI 201H - Honors Introduction to Sociology 3:3:0**  
Focuses on the relations between people and their social institutions, including problems that derive from these relations. Topics include culture, society, groups, social change, institutions (family, education, religion, etc.). Using a seminar or discussion-based approach, this course encourages independent, creative and critical inquiry and prepares students for the practical application of information by emphasizing effective research strategies and technologies congruent with the field of study. *Prerequisite: Completion of all developmental reading and writing courses required, as a result of the College Testing and Placement Program. (S&BS)*

**SOCI 202 - Social Problems 3:3:0**  
Problems of society considered in the context of such concepts as social change, social disorganization, conflict, and deviant behavior. Emphasis on the need to develop strategies for confronting problems such as poverty, racial discrimination, sexual discrimination, and crime. *Prerequisite: Completion of all developmental reading and*

writing courses required as a result of the College Testing and Placement program. Recommended: SOCI 201 (S&BS)

**SOCI 203 - Marriage and Family 3:3:0**  
A comparative study of the family as a social institution, including a functional approach to questions related to both premarital and post marital aspects of married and family life. *Prerequisite: Completion of developmental reading and writing courses required as a result of the College Testing and Placement program. Recommended: SOCI 201 (S&BS)*

**SOCI 205 - Race and Cultural Relations 3:3:0**  
The nature and dynamics of the relationship between minority and majority groups and the relation of these groups to social stratification, economics, political and educational institutions in the culture. *Prerequisite: Completion of all developmental reading and writing courses required, as a result of the College Testing and Placement program. Recommended: SOCI 201. (S&BS)*

**SOCI 211 - Group Dynamics 3:3:0**  
Introduction to dynamics of small-group functioning, with emphasis on developmental stages of group life. Examination of leadership processes in the context of interpersonal relations. Students learn group dynamics by functioning as a small group. *Prerequisite: Completion of all developmental reading and writing courses required as a result of the College Testing and Placement program.*

**SOCI 226 - Perspectives on Aging 3:3:0**  
Designed to provide students with basic knowledge of the concepts, theories, and problems in the study of aging. Emphasis on social problems of aging and the impact aging has on the individual. Topics include the scope of gerontology, retirement, health, leisure, independence, and primary relationships, as well as larger issues of aging in relation to economics, government, and community programs. *Prerequisite: Completion of all developmental reading and writing courses required as a result of the College Testing and Placement program.*

## **SPANISH**

**SPAN 100 - Conversational Spanish for the Workforce 1:1:0**  
Introduces the basics of conversational Spanish for the workplace. This course is designed to provide students with the fundamentals of the Spanish language through use of grammar, drill-in structure, and pronunciation development of the vocabulary. Students learn target language commands through field scenario simulations and develop an awareness of the Hispanic culture. *Prerequisite: Eligibility for enrollment into ENGL 101.*

**SPAN 101 - Elementary Spanish I 4:4:0**  
Covers the fundamentals of Spanish grammar, drill-in structure and pronunciation and the development of vocabulary. Aural-oral and reading skills are also introduced. *Prerequisite: Eligibility for enrollment into ENGL 101. (H&A)*

**SPAN 102 - Elementary Spanish II 4:4:0**  
Continuation of SPAN 101 with increased emphasis on speaking and reading. *Prerequisite: SPAN 101 or equivalent with a grade of C or higher. (H&A)*

**SPAN 104 - Spanish for Healthcare 3:3:0**  
Focuses on the use of the Spanish language within the healthcare setting. This course addresses the fundamentals of Spanish grammar, drill-in structure and pronunciation, and the development of vocabulary. Aural-oral and reading skills are also introduced. *Enrollment is restricted to students in the following programs: Cardiovascular Technology AS; Dental Assisting Certificate; Dental Hygiene AS; Diagnostic Medical Sonography AAS; Human Services AA; Medical Assisting Certificate; Medical Laboratory Technician AS; Nursing AS; Practical Nursing Certificate; Radiologic Technology AS; Radiologic Informatics AAS; Respiratory Therapist AS; Social Services AA; and Surgical Technology AAS. Prerequisite: Eligibility for enrollment into ENGL 101. Or, permission of the Instructor. (H&A)*

**SPAN 201 - Intermediate Spanish I 4:4:0**  
Review of the fundamentals of Spanish grammar; practice in conversation and composition; extensive reading and analysis of works of acknowledged literary and cultural merit. *Prerequisite: SPAN 102 or equivalent with a grade of C or higher. (H&A)*

**SPAN 202 - Intermediate Spanish II 4:4:0**  
Continuation of SPAN 201. Further practice in oral and written skills; continued reading of works of literary and cultural merit. *Prerequisite: SPAN 201, or equivalent with a grade of C or higher. (H&A)*

## **STRUCTURAL ENGINEERING TECHNOLOGY**

**SET 201 - Introduction to Structural Engineering Technology 3:2:3**  
Introduces basic information and design concepts in the area of structural engineering. This course covers the history of structural engineering including the evolution of design- load selection; the major types of structures encountered within the industry including the major building codes - both trade and professional - that apply to their design; and the identification of structural components through the interpretation of shop and contract drawings. Preparing quantity takeoff calculations

and preliminary cost estimates are also covered. Students work in teams on small design projects. A course fee is required. *Prerequisite: MATH 033, 044, & 055 (or MATH 051) or MATH 161 or higher, ARCH 130 or ENGR 102 with grades of C or higher; or, permission of the Instructor.*

### **SET 202 - Structural Design Fundamentals and Concepts 3:1:6**

Continues the topics covered in SET 201 by providing a more in-depth study of the major structural systems used in buildings, bridges, and other structures. The course emphasizes basic structural design and utilization of resources such as codes, design aids and software, and trade design manuals. Designs using wood, concrete, steel, and masonry are reviewed. Students participate in three team based projects allowing them to complete basic designs for commercial buildings and other structures. These projects cover such specifics as calculating design loads and stresses, drawing free-body diagrams, and sizing components such as beams, columns, and joists. A course fee is required. *Prerequisite: CVTE 208 and SET 201 with grades of C or higher; or permission of the Instructor.*

## **SURGICAL TECHNOLOGY**

### **SURG 101 - Concepts in Surgical Technology 3:3:0**

Introduces students to theories and concepts in the role of a surgical technologist. This course covers professionalism, communication, computer technology in the operating room, biomedical science, biopsychosocial needs of the surgical patient, ethical/legal issues specific to the perioperative setting, patient, and work place safety. *Enrollment is restricted to students in the Surgical Technology AAS program. Prerequisite: BIOL 105 with a grade of C or higher. Pre/Co-requisite: BIOL 121 with a grade of C or higher. Co-requisite: BIOL 221.*

### **SURG 105 - Pharmacology 1:1:0**

Introduces pharmacology for the surgical technologist. This course emphasizes pharmacologic principles in surgery, medications commonly utilized in the perioperative setting, and basic anesthesia concepts. *Enrollment is restricted to students enrolled in the Surgical Technology AAS program. Prerequisite: MATH 055 (or MATH 051) or equivalent; BIOL 105 and 221 with grades of C or higher. Pre/Co-requisite: BIOL 122 with a grade of C or higher.*

### **SURG 110 - Introduction to Surgical Technology 5:4:3**

Introduces students to the fundamentals of operating room techniques. This course emphasizes the principles and practices of asepsis and sterilization. Roles and responsibilities of the surgical technologist, and other surgical team members, are covered. Other topics include

identification of common equipment, instruments and supplies; scrubbing; gowning; gloving; draping, and creating a sterile field. A course fee is required. *Enrollment is restricted to students in the Surgical Technology AAS program. Prerequisite: BIOL 105, 122, 221, and SURG 101 with grades of C or higher. Co-requisite: SURG 105.*

### **SURG 111 - Surgical Procedures I 5:4:3**

Develops the concepts learned in SURG 101, 105, and 110. This is a lecture/laboratory course that covers the theory and practice for general, endoscopic, gynecological, obstetrical, genitourinary, otorhinolaryngology, maxillofacial and plastic surgical procedures with an emphasis on the steps of the procedure and instrumentation used for these interventions. A course fee is required. *Enrollment is restricted to students in the Surgical Technology AAS program. Prerequisite: SURG 105 and 110 with grades of C or higher. Co-requisite: SURG 210.*

### **SURG 112 - Surgical Procedures II 5:4:3**

Expands the student's knowledge of surgical specialties and clinical practice. This lecture/laboratory course specifically addresses cardiovascular, thoracic, neurological, ophthalmic and orthopedic surgical procedures. Considerations for pediatric and geriatric procedures are also discussed. A course fee is required. *Enrollment is restricted to students in the Surgical Technology AAS program. Prerequisite: SURG 111 and 210 with grades of C or higher. Co-requisite: SURG 220.*

### **SURG 150 - Clinical Preparation Lab 1:0:3**

Aids students who have had an interruption in their clinical education, are recently readmitted to the program, require further clinical skill reinforcement, or have scored less than 80 points on the final progress report in SURG 210. This course reinforces aseptic technique, instrumentation, procedural planning, pharmacology, and patient safety. A course fee is required. *Enrollment is restricted to students in the Surgical Technology AAS program. Prerequisite: SURG 111 and 210 with a grade of C or higher.*

### **SURG 210 - Surgical Clinical Externship I 3:0:24**

Develops the concepts learned in SURG 101, 105, and 110. Students are assigned to affiliated health care organizations where they practice skills related to surgical techniques and principles. In addition, they participate actively as members of the surgical team and develop the skills necessary to scrub during surgical procedures under supervision. A course fee is required. *Enrollment is restricted to students in the Surgical Technology AAS program. Prerequisite: SURG 105 and 110 with grades of C or higher.*

**SURG 220 - Surgical Clinical Externship II 4:0:32**  
Develops further clinical proficiency. Students are assigned to affiliated healthcare organizations where they practice skills related to surgical techniques and principles with the goal of scrubbing independently for common surgical procedures under supervision. They participate as members of the surgical team, building on the skills developed in SURG 111 and 210. A course fee is required. *Enrollment is restricted to students in the Surgical Technology AAS program. Prerequisite: SURG 111 and 210 with grades of C or higher. Co-requisite: SURG 112.*

**SURG 230 - Surgical Clinical Externship III 3:1:16**  
Develops further clinical proficiency with progress into surgical specialties of cardiothoracic, ophthalmology and endoscopy. Students are assigned to affiliated healthcare organizations where they are exposed and participate in surgical specialties under supervision. This course prepares the student for entry-level independent practice and certificate as a surgical technologist. A course fee is required. *Enrollment is restricted to students in the Surgical Technology AAS program. Prerequisite: SURG 112 and 220 with grades of C or higher.*

## **THEATRE**

**THTR 101 - Introduction to Theatre 3:3:0**  
The role of the performing arts in society from primitive times to the present. Students explore the functions of actors, directors, researchers, designers, playwrights, and audiences. *Prerequisite: Eligibility for enrollment into ENGL 101 with completion of all reading courses required by the College Testing and Placement Program. (H&A)*

**THTR 110 - Introduction to Acting 3:2:3**  
Introduces students to the theory and techniques of the actor's art through exercises, improvisations, basic script analysis, and exposure to live theatre. A course fee is required. *Prerequisite: Eligibility for enrollment into ENGL 101. Co-requisite: THTR 120 and 130 for Theatre majors only. (H&A)*

**THTR 111 - Acting II 3:2:3**  
Covers the transition between exercises involving student actors' portrayal of self and their subsequent portrayal of characters. A course fee is required. *Prerequisite: THTR 110, 120, and 130. Co-requisite: THTR 121 and 131*

**THTR 120 - Theatre Voice I 1:1:1**  
Introduction of techniques that allow actors to develop a natural on-stage speaking voice and to interpret written materials effectively. A course fee is required. *Co-requisite: THTR 110 and 130.*

**THTR 121 - Theatre Voice II 2:1:3**  
Introduces students to the International Phonetic Alphabet and Standard English dialects specifically intended for stage use. A course fee is required. *Prerequisite: THTR 110 and 120 with grades of C or higher. Co-requisite: THTR 111.*

**THTR 122 - Theatre Voice III 2:1:3**  
Provides students with an in-depth study of advanced dialects specifically intended for stage use. This study also includes the necessary preparation for auditions, improvisational work, and character study. A course fee is required. *Prerequisite: THTR 121 with a grade of C or higher.*

**THTR 130 - Theatre Movement I 1:1:1**  
Basic stage movement for the actor, emphasizing motion and alignment. A course fee is required. *Co-requisite: THTR 110 and 120.*

**THTR 131 - Theatre Movement II 2:1:3**  
Presents the development of a character through whole-body movement. This course also includes an introduction to the basic skills of stage combat. A course fee is required. *Prerequisite: THTR 120 and 130 with grades of C or higher. Co-requisite: THTR 111.*

**THTR 134 - Acting for the Camera 3:2:3**  
Introduces students to the basic differences between the acting styles used in film versus those in theatre. This course presents the fundamentals for auditioning and performing on-camera with specific focus on sight reading, and vocal quality, physical preparation, commercial presentation, and scene work. A course fee is required. *Prerequisite: THTR 110, 111 or 210 with a grade of B or higher.*

**THTR 142 - Scenic Design 3:2:3**  
Explores the aesthetics of scene design. Students learn the fundamentals of construction, painting, rigging, and mounting of a theatrical production. A course fee is required.

**THTR 143 - Theatre Makeup 3:2:3**  
Studies the application of makeup including straight, corrective and prosthetic types based on character analysis. The course emphasizes the design and implementation of special effects makeup including life masks and casting of prosthetics. A course fee is required.

**THTR 144 - Costuming for the Theatre 3:2:3**  
Introduces the study and practical application of costume construction techniques. The course covers fabric study, patterning, draping, fitting, and script analysis. A course fee is required.

**THTR 145 - Introduction to Musical Theatre 3:3:0**  
Covers the history of the American musical stage from early forms to contemporary Broadway successes. This course emphasizes the analysis of libretto and the development of performing skills culminating in the presentation of student work. *Prerequisite: Eligibility for enrollment into ENGL 101; THTR 101 or 110 with a grade of C or higher.*

**THTR 146 - Theatre Lighting 3:3:0**  
How and why lighting is used in the theatrical environment. Students are introduced to both the theory and practice of theatrical lighting technology and design.

**THTR 147 - Theatre Practicum A 1:1:2**  
Introduces students to theatre production through practical, hands-on experiences. This course is the first of three practicum experiences in which students must participate in a HACC theatre production working within one of the following areas: acting, technical, and/or front of house. Each of the three theatre practicum courses allows students to work in different areas within each production. But, students may not duplicate areas and must secure approval by a supervising faculty member of their individualized practicum experience within the second week of the semester. This course is open to all HACC students who meet the course prerequisite: *Prerequisite: THTR 101 with a grade of C or higher.*

**THTR 148 - Theatre Practicum B 1:2:1**  
Introduces students to theatre production through practical, hands-on experiences. This course is the second of three practicum experiences in which students must participate in a HACC theatre production working within one of the following areas: acting, technical, and/or front of house. Each of the three theatre practicum courses allows students to work in different areas within each production. But, students may not duplicate areas and must secure approval of supervising faculty member individualized practicum experience within the second week of the semester. This course is open to all HACC students who meet the course prerequisite. *Prerequisite: THTR 147 with a grade of C or higher.*

**THTR 149 - Theatre Practicum C 1:1:2**  
Introduces students to theatre production through practical, hands-on experiences. This course is the third of three practicum experiences in which students must participate in a HACC theatre production working within one of the following areas: acting, technical, and/or front of house. Each of the three theatre practicum courses allows students to work in different areas within each production. But, students may not duplicate areas and must secure approval of supervising faculty member of their individualized practicum experience within the second week of the semester. This course is open

to all HACC students who meet the course prerequisite. *Prerequisite: THTR 148 with a grade of C or higher.*

**THTR 210 - Acting III 3:2:3**  
Uses the Meisner Technique to prepare students by means of exercise and projects to analyze plays, to develop characterizations, and to discuss pivotal scenes. This course also covers resumes, headshots, auditions, and interviews. A course fee is required. *Prerequisite: THTR 110, 111, 121, and 131 with grades of C or higher.*

**THTR 211 - Directing 3:2:3**  
The role of the director and the director/actor relationship discussed in three units. The first unit considers the historical role of the director, the criteria for selection of a play, and the principles of audition and casting. Unit two covers the techniques of blocking, ground plans, composition, and picturization. The final unit emphasizes the individual and collaborative efforts of actor and director through the student's preparation of scene projects. A course fee is required. *Prerequisite: THTR 142, 144, and 210 with a grade of C or higher; or permission of the Instructor.*

**THTR 216 - Acting IV 3:2:3**  
A course of study in the histrionic theories, techniques, and performance practices of Period Acting. A course fee is required. *Prerequisite: THTR 210 with a grade of B or higher.*

**THTR 217 - Theatre Improvisation 3:2:3**  
Builds upon the skills acquired in previous acting courses. This course allows students to enhance their improvisational abilities through spontaneous action. A course fee is required. *Prerequisite: THTR 110 with a grade of C or higher.*

**THTR 220 - Introduction to Modern Dance 3:2:3**  
Provides a basis for comprehending the principles and techniques of modern dance and the development of personal creativity through movement. The course addresses the awareness of the body as an instrument of expression; the philosophies of modern dance pioneers; and the development of specific technical dance skills, concepts, and theories of choreography as they apply to dance in the postmodern era. A course fee is required. *Prerequisite: Eligibility for enrollment into ENGL 101.*

**THTR 224 - Modern American Theatre 3:3:0**  
Studies six socially and culturally diverse plays by major American playwrights. Students examine the social, historical, and cultural fabric of the theatrical voice of America through three main units: Theatre of Identity, Theatre of Protest, and Cross Cultural Theatre. *Prerequisite: ENGL 101; and THTR 101 or 110 with grades of C or higher.*

**THTR 229 - Theatre in London & Dublin 3:3:0**

Immerses students into the vibrant theatre cities of London, England and Dublin, Ireland. This course explores the significance of each city's contribution to history and its corresponding development of theatre by attending professional performances, taking backstage tours and exploring historical sites. Highlights in England include Stratford-upon-Avon, Warwick Castle, Stonehenge, the British Museum, Westminster Abbey, the Globe Theatre, and the Tower of London. Ireland highlights include the Trim Castle, St. Patrick's Cathedral, and Smock Alley Theatre. Students are allotted time to explore the cities on their own to pursue individual interests. A course fee is required.

**THTR 230 - Theatre in London 3:3:0**

Highlights the best of London - one of the epicenters of theatre. Students attend five performances and participate in the backstage tours of some of London's most prominent theaters. Students visit Stratford-upon-Avon (Shakespeare's birthplace), the reconstructed Globe Theatre, Westminster Abbey, St. Paul's Cathedral, the Tower of London, Stonehenge, the City of Bath, Warwick Castle, the British Museum, The British Library, and the Victoria and Albert Museums. Students are allotted time to explore the city on their own to pursue individual interests.

**THTR 243 - Special Effects Makeup for Film and Television 3:2:3**

Studies the application of special effects makeup and emphasizes its design and implementation for film and television productions. This course specifically covers character renderings, script breakdown, hand-laying facial hair, tattoos, bald caps, and prosthetic application based upon character analysis. A course fee is required. *Prerequisite: THTR 143 with a grade of C or higher.*

**THTR 291 - Theatre Internship 3:0:15**

Provides an opportunity for students to work in all aspects of theatre production outside the periphery of HACC's Theatre program. This internship course is in partnership with approved industry establishments and allows students to apply the knowledge and skills taught in HACC theatre courses directly to their desired area of specialization for a total 225 hours per semester. Students are to submit a final comprehensive reflective report that documents the main achievements of their internship experience. Permission and signature of the Instructor are required.

**UNITED BROTHERS CARPENTRY/MILLWORK****UBCM 105 - Introduction to Millwright Trade/Safety 2:1:2**

Introduces the fundamental knowledge and skills of the Millwright Trade including terms and definitions. An introduction to safety practices is also discussed. *Enrollment restricted to major: 4271.*

**UBCM 115 - Introduction to Construction Millwrighting 2:1:2**

Introduces Construction Millwrighting. This course covers the knowledge and skills needed to properly use common hand and power tools and precision measuring instruments. In addition, essential math principles and information on commonly used standard fasteners and structural shapes are also covered. *Enrollment restricted to major: 4271.*

**UBCM 125 - Installation and Maintenance of Machinery 2:1:2**

Provides the essential knowledge and skill needed to handle, install, and maintain machinery. *Enrollment is restricted to major: 4271.*

**UBCM 205 - Precision Optical Instruments 2:1:2**

Introduces precision optical instruments. Students are exposed to a wide variety of topics including, but not limited to, optical principles, proper use of equipment such as levels, jig transits, and laser tools, safety, and machine setup. Relevant lab work is an intrinsic part of this course and students perform actual hands-on applications. *Enrollment restricted to major: 4271.*

**UBCM 215 - Machinery Alignment I 1:1:1**

Introduces the alignment of machinery. *Prerequisite: UBCM 205 with a grade of C or higher. Enrollment restricted to major: 4271.*

**UBCM 225 - Machinery Alignment II 1:1:1**

Provides an in-depth study of the alignment of machinery including Laser Shaft Alignment and Reverse Double Dial Alignment systems. *Prerequisite: UBCM 215 with a grade of C or higher. Enrollment restricted to major: 4271.*

**UBCM 235 - GE Gas Turbine Familiarization and HYTORC Bolting 2:1:2**

Introduces GE gas turbine installations, setups and maintenance procedures. The course also familiarizes students with HYTORC bolting equipment and bolting techniques. Students learn to properly torque common industrial fasteners when used with various components, such as gaskets, lock wiring, and specialty washers. *Enrollment restricted to major: 4271.*

**UBCM 245 - Welding II** 2:1:2  
Introduces Shielded Metal Arc Welding (SMAW), Metal Identification, and Welding Metallurgy. *Prerequisite: WELD 101 with a grade of C or higher. Enrollment restricted to major: 4271.*

**UBCM 255 - Welding III - Qualification** 2:1:2  
Prepares students for welding qualification as per AWS D1.1 & D1.5. *Prerequisite: UBCM 245 with a grade of C or higher. Enrollment restricted to major: 4271.*

**UBCM 256 - Welding IV** 2:1:2  
Introduces Gas Metal Arc Welding (GMAW) and Flux Cored Arc Welding (FCAW) procedures and applications. *Prerequisite: UBCM 255 with a grade of C or higher. Enrollment restricted to major: 4271.*

**UBCM 265 - Advanced Layout and Alignment** 2:1:2  
In-depth study of layout tasks specifically Geometric layouts and Turbine, Generator, and Reactor Installations. *Prerequisite: UBCM 225 with a grade of C or higher. Enrollment restricted to major: 4271.*

**UBC 110 - Introduction to Carpentry** 2:1:2  
Provides introductory knowledge and skill for the carpentry trade. Students learn basic hand tools, hand tool use, blueprint reading, tool sharpening, safety, and simple applied mathematics. Simple projects are constructed to specifications. *Enrollment is restricted to students in the UBC program.*

**UBC 120 - Carpentry Power Tools** 2:1:2  
Introduces basic power tools, both portable and stationary. These include power saws, electric drills, miter saws, power planes, routers, radial arm saws, drill presses, jointers, table saws, and related tools. Students demonstrate proficiency before moving to other tools and machines. Classroom/laboratory activities also include safety, blueprint reading, and applied mathematics. Simple projects are constructed to specifications. *Enrollment is restricted to students in the UBC program. Prerequisite: UBC 110 with a grade of C or higher.*

**UBC 130 - Footer Construction** 2:1:2  
Provides instruction on footers and foundations in construction. Students learn the various types of footers and their application in construction. Laboratory activities include the forming and construction of footers to meet specific specifications. Students also learn the techniques of rigging, moving, and installing cast objects on the job site. *Enrollment is restricted to students in the UBC program. Prerequisite: UBC 110 with a grade of C or higher.*

**UBC 140 - Wall Forms** 2:1:2  
Provides instruction in wall fabrication for light and heavy construction. Students explore various types of building materials and their use in the construction of walls. Using common and engineered materials, students build wall sections to specification. *Enrollment is restricted to students in the UBC program. Prerequisite: UBC 110 with a grade of C or higher.*

**UBC 150 - Stair Forms** 2:1:2  
Provides the knowledge and skills to layout, form, and create concrete cast stairs for residential and commercial construction. Students construct stairs according to specifications. *Enrollment is restricted to students in the UBC program. Prerequisite: UBC 110 with a grade of C or higher.*

**UBC 160 - Construction Layout** 2:1:2  
Provides the knowledge and skills to layout foundations and property boundaries at the construction job site. Students use equipment to layout sites to specifications. Students also learn about hazardous materials which are commonly found in the construction of buildings and their surroundings. *Enrollment is restricted to students in the UBC program. Prerequisite: UBC 110 with a grade of C or higher.*

**UBC 170 - Scaffolds and Fall Protection** 2:1:2  
Introduces the knowledge and skills required to safely use scaffolds and ladders. Students construct various types of scaffolds to meet given job requirements. In addition, students learn and apply knowledge of fall protection devices and procedures. Students also complete a scaffolding qualification program developed by the construction industry. *Enrollment is restricted to students in the UBC program. Prerequisite: UBC 110 with a grade of C or higher.*

**UBC 180 - Construction Framing** 2:1:2  
Provides the knowledge and skills to layout, solve problems, and construct framing in residential/commercial buildings. Specifically, the student builds floor, wall, and ceiling framing to meet specifications. Electrical installation and safety are also explored. *Enrollment is restricted to students in the UBC program. Prerequisite: UBC 110 with a grade of C or higher.*

**UBC 210 - Rafters and Trusses** 2:1:2  
Provides the skills and knowledge to design, layout, and construct rafters and trusses to specifications. Students study the various types of roof designs and applications as well as solve problems of their construction. A lab activity includes the construction of a roof to meet specifications. *Enrollment is restricted to students in the UBC program. Prerequisite: UBC 110 with a grade of C or higher.*

**UBC 220 - Interior Systems** 2:1:2  
Provides the knowledge and skills to construct and finish interior wall and ceiling systems commonly found in construction. Students use industry grade tools and equipment to construct and finish drywall, firestops, wallboard, and similar systems. *Enrollment is restricted to students in the UBC program. Prerequisite: UBC 110 with a grade of C or higher.*

**UBC 230 - Rigging** 2:1:2  
Provides the knowledge and skills required for rigging and moving large, heavy objects at the construction site. Students calculate loads for lifting with a variety of slings and hoists. Objects are rigged and moved according to plans and specifications. *Enrollment is restricted to students in the UBC program. Prerequisite: UBC 110 with a grade of C or higher.*

**UBC 240 - Stair and Trim Finishing** 2:1:2  
Provides the knowledge and skills to layout and construct finished stairs. Students read blueprints, calculate tread and risers, determine construction requirements, and build stairs. In addition, students also install typical trim and molding as found in the construction industry. *Enrollment is restricted to students in the UBC program. Prerequisite: UBC 110 with a grade of C or higher.*

**UBC 250 - Welding** 2:1:2  
Provides the knowledge and skills to cut and weld metals commonly found at the construction site. Students set up and operate oxy-fuel torches to cut metal to shape and dimension. Students also use shielded metal arc welding equipment to fuse metal for fabrication. *Enrollment is restricted to students in the UBC program. Prerequisite: UBC 110 with a grade of C or higher.*

**UBC 260 - Solid Surface Systems** 2:1:2  
Provides the knowledge and skills needed to specify, install, and repair counter tops and similar surfaces. Students layout and install a counter top, with drop edge and back splash, to specifications. *Enrollment is restricted to students in the UBC program. Prerequisite: UBC 110 with a grade of C or higher.*

**UBC 270 - Doors, Windows, and Hardware** 2:1:2  
Provides the knowledge and skills to install doors and windows. Students read blueprints, identify door and window specifications, and describe installation procedures. Various types of doors and windows are installed in the laboratory environment. *Enrollment is restricted to students in the UBC program. Prerequisite: UBC 110 with a grade of C or higher.*

**UBC 280 - Aerial Lift Operation** 2:1:2  
Provides the knowledge and skills for the student to work above ground level and on elevated surfaces at construction

sites. Students learn the use and operation of aerial lifts, elevated platforms, and forklifts. Safety considerations and the use of fall protection devices are emphasized. *Enrollment is restricted to students in the UBC program. Prerequisite: UBC 110 with a grade of C or higher.*

## **WEB DEVELOPMENT**

**WEB 101 - WEB Program Introduction** 3:3:0  
Introduces students to the WEB Development and Design programs including faculty members and facilities, tools of the profession, and the resources and study habits needed to succeed in this curriculum. This course covers Web authoring tools in conjunction with operating systems, file management, and office application skills needed for a successful career in the field. *Prerequisite: ENGL 057 or a combination of ENGL 003, or 007 and ENGL 051 with a grade of C or higher; Eligibility for enrollment into ENGL 101.*

**WEB 102 - Web Exploration & Design** 3:3:0  
Explores the uses of the Internet and the World Wide Web in business. Students learn to accomplish tasks with common Web tools and services. An introduction to Web page design and development is included using HyperText Markup Language (HTML) and free editors. Students develop an online portfolio site that may be used through-out their college career. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of ENGL 057 or a combination of ENGL 003, or 007 and 051 with a grade of C or higher (if required by the College Placement and Testing program). Word processing skills and the ability to receive and send email attachments is recommended.*

**WEB 110 - Web Site Publishing** 3:3:0  
Covers the creation of Web sites using popular Web editing software and content management systems (CMS). This course specifically addresses the various concepts and technologies used for Web site design and the development for both desktop and mobile platforms.

**WEB 125 - HyperText Markup Language (HTML) & Cascading Style Sheets (CSS)** 3:3:0  
Covers the development of Web pages using well-designed HyperText Markup Language (HTML) and Cascading Style Sheets (CSS) code. This course also covers associated topics including the purpose and structure of markup languages, validation, eXtensible Markup Language (XML), and multimedia elements.

**WEB 126 - eXtensible Markup Language (XML)** 3:3:0  
Uses eXtensible Markup Language (XML) in Web pages, databases, computer applications. This course covers XML concepts, standards, creating documents, validation, display

methods, associated technologies, custom markup languages, software tools and application development, and integration with databases. *Prerequisite: CIS 105 or 110, or WEB 101 with grades of C or higher.*

**WEB 130 - Multimedia Fundamentals 3:3:0**

Introduces the creation, optimization, and integration of multimedia design elements into Web pages. This course covers media file formats and codecs, linking and embedding, basic still graphics, rollovers, audio, video, 2-Dimensional animation, and conversion issues.

**WEB 133 - Design Fundamentals 3:3:0**

Explores graphic design principles for creating web pages, layouts, and graphic elements. Topics include web typography, color theory, layout, two-dimensional Cartesian geometry, grids, site harmony, graphic identity, template design, CCS color and typography control, and accessibility.

**WEB 135 - Raster Imaging and Photography 3:3:0**

Introduces raster-based techniques using Adobe Photoshop to create Web graphics and edit photographs for Web use. This course covers such topics as digital painting and editing tools, layer management, filters, special effects, vector-raster conversions, animation, and optimization for the Web. Basic digital photography techniques such as composition, lighting, and camera control are also introduced.

**WEB 138 - Vector Imaging & SVG 3:3:0**

Introduces the creation and editing of Web vector graphics and page layouts using Adobe Illustrator software. This course focuses on digital drawing tools, manipulating points and curves, layer management, text-on-curve, filters, special effects, Web file formats, vector-raster conversions, and exporting to animation programs. Scalable Vector Graphics (SVG) are also featured in this course as an industry-standard format capable of adapting to responsive Web sites.

**WEB 143 - Development Fundamentals 3:3:0**

Covers the development of applications for current computer platforms. This course addresses concepts and skills for programming in various languages, using contemporary software development tools, developing different types of applications, and working with databases. This course provides the development foundations and programming skills needed to take more advanced application development and programming courses. *Prerequisite: CIS 110; or WEB 101 or 102 with a grade of C or higher. Co-requisite: WEB 125.*

**WEB 144 - Introduction to JAVA Development 3:3:0**

Introduces Internet programming fundamentals, using JAVA, and object-oriented programming language. Students are

taught the skills required to develop complex JAVA code such as classes, exceptions, libraries, and threads as applied to Web applications. This course also covers integration with databases and applet development. *Prerequisite: WEB 143 with a grade of C or higher.*

**WEB 225 - Responsive Design and Typography 3:3:0**

Explores Cascading Style Sheet (CSS) standards and flexible grid systems for Web page layout and typography. Responsive web design automatically adapts to various screen sizes. This course specifically addresses the history, design, and selection of typefaces, fonts and letterforms, rapid prototyping of Web sites, and the creation of comprehensive Web page layouts (comps) for conversion to CSS, HyperText Markup Language (HTML), scalable design, and media elements. *Prerequisite: WEB 125 and 133 with grades of C or higher.*

**WEB 227 - eBooks, eDocs, & ePublishing 3:3:0**

Features industry-leading applications: Adobe InDesign and Adobe Acrobat. This course enables the Web Designer to create new electronic publications and/or convert traditional print documents for publication to the Web. Students also create files appropriate for mobile devices, such as the Apple iPad, the Amazon Kindle, and the Barnes & Noble Nook. *Prerequisite: WEB 133 with a grade of C or higher.*

**WEB 230 - 2-Dimensional Animation for the Web 3:3:0**

Covers Web animation techniques using 2-Dimensional and 2-1/2 Dimensional animation software including Adobe Flash, Adobe After Effects, Adobe Edge Animate, as well as HyperText Markup Language 5 (HTML5) capabilities. This course focuses on creating 2-D and 2-1/2D vector objects. Students learn to animate those objects through space and over time, integrate audio and video, apply fills, textures, light sources and specific effects, and then optimize the animated objects for the Web. *Prerequisite: WEB 130 with a grade of C or above.*

**WEB 231 - 3-Dimensional Animation for the Web 3:3:0**

Features the industry-leading applications, Autodesk Maya. This course covers 3-Dimensional modeling, texturing, animating, dynamics, lighting, visualization, and special effects. Methods of passing graphic information in to and out of Maya are addressed, as well as optimization of animations for the Web. Other topics include motion capture, 3-Dimensional digitizing, 3-Dimensional printing, Google Sketch-Up, Google Earth, Web3D, Web Graphics Library (WebGL), and X3-D. Students should note that these applications require computers that have significant processing power, graphics ability, memory, and disc space. The College has computers that are able to handle these software applications available for students in the Web labs at

HACC's Midtown II building. Please consult the instructor for specifications. *Prerequisite: WEB 130 with a grade of C or higher.*

**WEB 233 - Audio/Video Studio for the Web 3:3:0**

Focuses on the workflow and team-based implementation of advanced audio/video production. The course explains how studio-and field-based audio and video recording is used to capture high-resolution audio and high-definition video and that pre-production planning and scripting tools begin the process. Students gain experience using Adobe Audition (audio editing), Adobe Premiere Pro (video editing), Adobe After Effects (post-production enhancements), and ChromaKey (greenscreen) techniques through participation in several team projects. *Prerequisite: WEB 130 with a grade of C or higher.*

**WEB 240 - JavaScript Programming 3:3:0**

Covers programming with JavaScript to build client-side Web pages with eXtensible Markup Language (XML) and Hyper Text Markup Language (HTML). This course also addresses programming constructs, logic, debugging, dynamic effects, user interaction, form validation, rich media, security, and remote scripting with Asynchronous JavaScript and XML (AJAX). jQuery and JSON are also discussed. *Prerequisite: WEB 125 with a grade of C or higher. Co-requisite: WEB 143.*

**WEB 245 - Advanced Development 3:3:0**

Covers intermediate and advanced topics in software development for current computer platforms. This course extends to introductory skills learned in WEB 143 to give students a mastery of programming with different types of applications using various data sources. Additional topics and terminology are discussed to illustrate current technologies used in the industry. *Prerequisite: WEB 143 with a grade of C or higher.*

**WEB 253 - Introduction to Windows Development 3:3:0**

Covers Web application development using current technologies available for Microsoft Windows. The course discusses eXtensible Markup Language (XML) and current online database technologies, as well as the creation of data-driven Web and mobile applications, the latest application architectures, XML, on-line data services, Web services, and supporting Windows technologies. *Prerequisite: WEB 143 with a grade of C or higher.*

**WEB 255 - Introduction to PHP Development 3:3:0**

Covers Web application development using PHP programming and Web databases. This course focuses on the creation of database-driven Web pages, PHP programming, HyperText Markup Language (HTML) tags, client/server

applications, eXtensible Markup Language (XML) Web services, security issues, and database administration using MySQL, Web databases, and the Apache Web server. *Prerequisite: WEB 143 with a grade of C or higher.*

**WEB 257 - Advanced ASP.NET: Active Server Pages 3:3:0**

Covers web application development using Active Server Pages (ASP.NET) programming, XML, and databases. Topics include creating data-driven web pages, ASP.NET programming, HTML tags, client/server applications, XML web services, configuring web servers, security, Silverlight and Multimedia Integration, and common databases such as the Microsoft SQL Server. *Prerequisite: WEB 253 with a grade of C or higher or application development experience.*

**WEB 268 - Web Program Capstone 3:3:0**

Provides a capstone experience in which students are able to use the skills taught in the Web Development and Design programs to complete a Web site through its life cycle. Projects involve job application, interviewing, and working as a developer, designer, or producer on an individual basis and within a group. *This course is restricted to students enrolled in the Web Development and Design programs. Prerequisite: WEB 133 and WEB 143 with grades of C or higher; An Instructor's signature is required for registration.*

**WEB 270 - Cooperative Work Experience in Web 3:0:15**

Allows student to engage in a Faculty-monitored employment experience. Students spend a total of 225-hours, over the course of a term, working in an approved cooperative business where they can apply the knowledge and skills acquired in the Web curriculum to real-world situations. Students are required to submit written documentation of their work experience activities. *The course is restricted to students enrolled in the Web Development and Design program. Prerequisite: Completion of at least 30 credits in WEB-discipline courses with a GPA of 3.0 or higher. An Instructor's signature is required for registration. Instructor approval of internship situation and Work Plan is also required.*

**WELDING TECHNOLOGY**

**WELD 101 - Print Reading Analysis for Welders 3:3:0**

Introduces students to basic welding skills that includes the interpretation of typical welding drawings and symbols, orthographic projection, tolerancing, fitting, and dimensioning systems, and math concepts including whole numbers, common fractions, and basic math formulas.

**WELD 102 - Oxy-Fuel Welding and Cutting 3:2:3**

Provides students with technical information and hands-on experience in flat, horizontal, vertical, and overhead position using the oxygen-fuel welding and cutting. Carbon-arc cutting is also covered. In addition, other topics include rod sizes, common flaws, and types of welds and joints. Finally, this course emphasizes the personal safety and proper use of shop equipment and tools. A course fee is required.

**WELD 103 - Shielded Metal Arc Welding 3:2:3**

Provides students with technical information and hands-on experience in flat and horizontal position shielded metal-arc welding. This course covers electrode sizes, common flaws, and types of welds and joints and emphasizes personal safety and proper use of shop equipment and tools. A course fee is required.

**WELD 105 - Shielded Metal-Arc Welding – Vertical and Overhead 3:2:3**

Provides students with technical information and hands-on experience in vertical and overhead position shielded metal-arc welding. This course covers the identification of common flaws, the analysis of operating principles, and the principles of non-fusion welding. In addition, the course emphasizes the personal safety and proper use of shop equipment. A course fee is required.

**WELD 107 - SMAW - Plate Test 3:2:3**

Develops students' skills in shielded metal arc welding (SMAW), through the use of hands-on experience in welding test plates in all positions as well as with and without use of backup material on steel. This course emphasizes the personal safety and proper use of shop equipment and tools. Lastly, students prepare for required testing for the American Welding Society (AWS) D1.1 certification test. A course fee is required. *Prerequisite: WELD 103 & 105 with grades of C or higher.*

**WELD 111 - Welding Applications 3:2:3**

Provides students with technical information and hands-on experience in electric arc, oxygen-acetylene (MIG), and (TIG) welding and covers other welding techniques, as well. In addition, this course emphasizes the personal safety and proper use of shop equipment and tools. A course fee is required.

**WELD 120 - Gas Metal Arc Welding I 3:1.5:4.5**

Covers gas metal arc welding, as this course is the first in a series of courses that teaches students the operation and application of gas metal arc welding (GMAW). The student sets up, operates, and maintains a gas metal arc welder. The student makes satisfactory welds on steel in a variety of positions. A course fee is required.

**WELD 130 - Gas Tungsten Arc Welding I 3:1.5:4.5**

Covers gas tungsten arc welding (GTAW), as this course is the first in a series of courses that teaches students the operation and application of gas tungsten arc welding. The student selects proper current, prepares metal, and makes satisfactory welds on ferrous metals. This course includes fillet and groove welds in a variety of positions. A course fee is required. *Prerequisite: WELD 101 and 102 with grades of C or higher; or permission of the Instructor or Discipline Lead.*

**WELD 240 - Pipe Welding 3:1.5:4.5**

Covers the welding skills of piping or tubing. This course allows students to develop skills in the welding of pipe or tubing using shielded metal arc (SMAW), gas metal arc (GMAW), gas tungsten arc (GTAW), and other welding processes. Weldments are done on pressure-piping in rotated and non-related positions in accordance with industry standards. Lastly, students prepare for required testing for American Society of Mechanical Engineers (ASME) certification. A course fee is required. *Prerequisite: WELD 103 with a grade of C or higher. Co-requisite: WELD 105 and 130; or permission of the Instructor or Discipline Lead.*

**WELLNESS & HEALTH PROMOTION****WHP 101 - Introduction to Wellness and Health Promotion 3:3:0**

Introduces students to the field of wellness and health promotion. This course explores the basic concepts, models, theories, literature, and health-related sources of information and examines the various wellness and health promotion settings and potential career paths of the wellness professional. In addition, students create comprehensive career development plan to help guide them in their pursuit of professional and education goals.

**WHP 102 - Approaches to Weight Management 3:3:0**

Examines the factors that influence weight management such as, individuals, families, society, and the environment. This course explores the multifaceted role that nutrition, physical activity, exercise, and behavior change play in weight management and the prevention of obesity.

**WHP 103 - Approaches to Stress Management 3:3:0**

Examines the science and theories of stress and its impact on both life and health. This course explores common approaches to the prevention, coping, and management of stress, as well as various relaxation techniques and lifestyle factors that contribute to a balanced life and wellness.

**WHP 201 - Health Behavior Change and Interventions 3:3:0**

Explores the theoretical underpinning of behavior change and the challenges that are faced with lifestyle modification. Furthermore, the course examines the various strategies and interventions that are used for chronic disease prevention and management. *This course is restricted to students enrolled in the Wellness and Health Promotion AAS program. Prerequisite: WHP 101, 102, and 103 with grades of C or higher. Co-requisite: WHP 202.*

**WHP 202 - Foundations of Health Coaching 3:3:0**

Provides students with the foundation for health coaching through the exploration of the theoretical concepts, core competencies, and skills that are used to evoke behavior change and lifestyle modifications in individuals. Students are able to demonstrate the coaching approach through active listening, effective communication and questioning, motivational interviewing, visioning and goal setting. *This course is enrollment restricted to students in the Wellness and Health Promotion AAS program. Prerequisite: WHP 101, 102, and 103 with grades of C or higher. Co-requisite: WHP 201.*

**WHP 203 - Concepts of Community Health 3:3:0**

Introduces students to the foundations of community and public health through the examination of organizations and agencies, epidemiology, disease prevention, community organizing, health promotion programming, and school health. Health across the human lifespan, racial/ethnic populations, and health care delivery in the United States are addressed as well as key community concerns such as mental health, alcohol, tobacco, and drugs, and environmental health. Students gain field experience by working in an approved community health setting. In addition, they are able to design a community building/organizing plan that addresses a specific health concern. *This course is enrollment restricted to students in the Wellness and Health Promotion AAS program. Prerequisite: WHP 101 with a grade of C or higher.*

**WHP 204 - Concepts of Workplace Wellness 3:3:0**

Introduces students to the theory, research, and application of workplace wellness concepts and the impact that programming may have on employee health and productivity, healthcare costs, and the economy. This course explores workplace culture, employee diversity, health literacy and disparities along with the challenge of workplace size. Students gain field experience in an approved workplace setting and examine effective program planning, implementation, and evaluation. In addition, they design an integrated Workplace Wellness Program. *This course is restricted to students enrolled in the Wellness and Health*

*Promotion AAS program. Prerequisite: WHP 101 with a grade of C or higher.*

**WHP 205 - Wellness Program Planning, Implementation, and Evaluation 3:3:0**

Explores the theoretical and practical aspects of planning, assessing, and evaluating health promotion programs across various settings. This course helps students to develop the skills necessary to plan and implement a program, collect and analyze data, and present an evaluation report. *This course is restricted to students enrolled in the Wellness and Health Promotion AAS program. Prerequisite: WHP 201, 202 and MATH 202 with grades of C or higher. Co-requisite: WHP 206 and MGMT 227.*

**WHP 206 - Wellness and Health Promotion Capstone 3:3:0**

Provides students with the opportunity to demonstrate the knowledge and skills obtained throughout the Wellness and Health Promotion program in a capstone experience. During this course students develop and implement a Workplace Wellness or Community Health project. In addition, this course helps prepare them for employment in the field by participating in career counseling, creating an electronic portfolio for professional use, and submitting a post-graduation plan. *This course is restricted to students enrolled in the Wellness and Health Promotion AAS program. Prerequisite: WHP 201, 202, 203, 204 & MATH 202 with grades of C or higher. Co-requisite: WHP 205 and MGMT 227.*



# College Leadership

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## Delegate Body, Honorary D.P.S. Recipients

### **The Delegate Body**

Each of the sponsoring school districts of the College selects a member of its school board as a delegate. The Delegate Body elects trustees of the College.

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Cumberland Valley School District, Frederick Withum  
Derry Township School District, Joseph McFarland  
East Pennsboro Area School District, Gregory Milbrand  
Greenwood School District, Nicholas Guarente  
Halifax Area School District, Michele Orner  
Harrisburg School District, Sybil Knight-Burney  
Lower Dauphin School District, Robert Schultz  
Mechanicsburg Area School District, Mark Leidy  
Middletown Area School District, Lori Suski  
Millersburg Area School District, Thomas Haupt  
Newport School District, Ryan Neuhard  
South Middleton School District, Alan Moyer  
Steelton-Highspire School District, Travis Waters  
Susquehanna Township School District, Tamara Willis  
Susquenita School District, Kent Smith  
Upper Dauphin School District, Evan Williams  
West Perry School District, Michael O'Brien  
West Shore School District, Todd Stoltz  
Williams Valley School District, Diane Niederriter

### **Honorary Doctor of Public Service**

The honorary degree of Doctor of Public Service is awarded to outstanding individuals in recognition of distinguished leadership and service.

Hon. K. Leroy Irvis, 1988  
William J. King, 1989  
Gov. William W. Scranton, 1990  
Genevieve Blatt, 1991  
William H. Alexander, 1992  
Margarita M. Kearns, 1993  
Bruce E. Cooper, 1994  
James W. Evans, 1994  
Sen. John J. Shumaker, 1995  
C. Ted Lick, 1996  
Hon. Stephen R. Reed, 1997  
Mary Sachs, 1998  
Rev. William M. Gray, 2000  
Gov. George M. Leader, 2001  
Frank J. Dixon, 2002  
Ronald Hankey, 2003  
Robert L. Rubendall, 2005  
Grace Milliman Pollock, 2005  
Robert A. Ortenzio, 2006  
Velma A. Redmond, 2007  
Benjamin David James, Ph.D., 2007  
Marion C. Alexander, 2008  
Benjamin Olewine, III, 2008  
Hon. LeRoy S. Zimmerman, 2009  
Hasu P. Shah, 2010  
James I. Scheiner, 2010  
Donald B. Freedman, M.D., 2011  
Sen. Jeffrey E. Piccola, 2012  
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