



# Course Catalog 2015-16



*Academically*  
**YOURS.**

HACC  
CENTRAL PENNSYLVANIA'S COMMUNITY COLLEGE

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# About HACC

# Inquiries and College Mission

## 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.

### Harrisburg Area 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  
717-221-1310  
[virtual@hacc.edu](mailto:virtual@hacc.edu)

### York Campus

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

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 Assistant to the President/College Diversity Officer, One HACC Drive, Harrisburg, PA 17110, telephone 717-736-4100.

## 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 one of the largest undergraduate colleges in Pennsylvania, with nearly over 20,000 students enrolling in credit programs and courses each semester.

Over the past 50 years HACC has grown and expanded its mission to include four more campuses: Gettysburg, Lancaster, Lebanon, York, as well as a robust online education program and two Midtown Harrisburg locations to house the college's expanding technology and trade programs. HACC now has approximately 160 associate degree, certificate and diploma programs. Study abroad opportunities provide alternatives to classroom instruction.

Noncredit programming includes courses in professional development, public safety and workforce development training for employees, business, industry, healthcare and human services.

Today, as Central Pennsylvania's Community College, HACC 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 communities and students it serves.

## Accreditation

Harrisburg Area Community College is accredited by the Middle States Commission on Higher Education. The Middle States Commission on Higher Education is an institutional accrediting agency recognized by the U.S. secretary of education and the Council for Higher Education Accreditation. Middle States Commission on Higher Education granted initial accreditation in April 1967 and reaffirmed that accreditation most recently in June 2007. 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.

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, 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. More than 2000 students are enrolled in credit courses at the Gettysburg Campus, which also offers a comprehensive selection of noncredit courses and customized employee training programs for business and industry.

The Gettysburg Campus has 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.

A 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 health care learning center houses HACC's Associate Degree Nursing program. 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 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 Internet courses for 28 associate degree, certificate and diploma programs. The campus also offers day and evening courses in Hanover. 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, established in 1967, was HACC's first campus. The Harrisburg Campus enrolls nearly 8,000 students every semester in credit courses in over 150 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-Grow 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 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.

# HACC Locations



**Lancaster Campus**

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

Serving the community for more than 20 years at its impressive educational complex on Old Philadelphia Pike, HACC's Lancaster Campus educates nearly 5,000 credit students per semester in more than 80 associate degree, certificate and diploma programs. Nearly 1,000 Lancaster area high school students receive college credits while still enrolled in high school through 20 HACC partnerships in the community. In addition, the Lancaster Campus' articulation agreements with more than a dozen colleges and universities allow transfer students to continue their education to gain a four-year degree.

As a leader in the region's economic and workforce development training, HACC's Lancaster Campus responds quickly and effectively to critical training and job needs. The College also plays an active role assisting regional business and industry partners with recruiting and retaining the highly skilled workforce required to compete in increasingly competitive markets.

Through HACC's Lancaster Campus' connection with businesses, industries and institutions in the community, thousands of Lancaster County residents and workers engage in new career or career-enhancing coursework, as well as in workforce development training.



**Lebanon Campus**

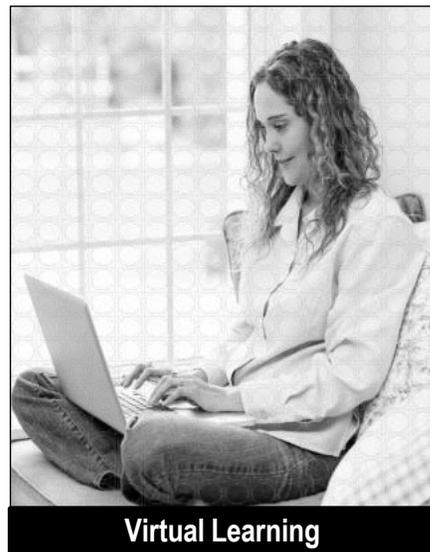
735 Cumberland Street  
Lebanon, PA 17042  
717-270-4222  
[lebadmit@hacc.edu](mailto:lebadmit@hacc.edu)

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 Lebanon Campus announced an innovative partnership with HACC's Virtual Learning unit. The goal of this partnership is to improve degree completion pathways at the Lebanon location and to expand the number of blended course offerings (combining of online and classroom instruction). This partnership will promote a modernized campus with collaborative learning spaces for faculty and students.

Serving the Lebanon Valley for more than 20 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 a Subway restaurant, 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 noncredit courses. Much of the general education course work for HACC's other programs can also be completed at the Lebanon Campus. Sixty percent of Lebanon students are enrolled in transfer programs which enable students to begin their college education locally and transfer to earn a baccalaureate degree. The remaining 40 percent are enrolled in career programs which enhance skills and knowledge to immediately enter the job market.

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)

HACC's Virtual Campus, now Virtual Learning, opened in July of 2004- as an extension of the college's successful distance learning program. Virtual Learning currently offers over 180 unique online classes in a wide variety of subject areas. In addition, students can major in one of thirteen fully online associate degree programs.

Busy adults who are challenged with travel concerns or personal and/or professional time constraints may find

# HACC Locations

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 their 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.

Successful online students are self-directed, motivated learners who login at the start of the class, actively participate, and complete assignments and assessments by the due dates. Good reading, writing, and study skills are also important. Online classes are academically the same as on-campus classes. The major difference is the flexibility provided by the delivery mode. Online classes can be accessed anywhere at any time using a computer with an Internet connection. Students should have experience accessing and navigating the Internet. They should also have basic computer skills, including the ability to create and manage word processing files and file folders, as well as the ability to send and receive emails, including those with attachments. 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 print materials. Visits to one of HACC's campuses for proctored exams or labs may be required. 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.

Online classes adhere to the same tuition, admission, and registration procedures as on-campus classes and follow the standard HACC fall, spring, and summer semester schedules. Classes are available in six-week, eight-week, late start, and full-term (15-week) sessions. 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. Please also 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, press 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 Ave. 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 3000 students are enrolled in classes making the York Campus the fastest-growing and third-largest campus of HACC.

The York Campus offers over 60 associate degree, certificate, and diploma programs as well as noncredit 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. A full-service bookstore, library, allied health and science labs, computer labs, an art studio, computer graphics lab, classrooms, a fitness classroom and wireless internet access in all buildings are part of our campus learning environment. The Office for Academic Success 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. Evening classes are also offered at Dallastown Area High School. 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.

# Continuing Education

**HACC's Workforce and Economic Development 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. Noncredit certificate programs are designed to be completed in less than 18 months. For more information, call 717-221-1337 or 717-221-1358.

**Computer Training** provides customized and public subscription computer training in a comprehensive assortment of software packages. HACC is nationally recognized as a CompTIA training provider. Certification training is available for A+, Network+, and Security+, and for Microsoft IT Academy. For information, call 717-780-1148.

**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, lean manufacturing, waste water treatment plant operator and more. For information, call 717-221-1337.

**Logistics** provides training for Warehouse/Logistics operations, CDL class A and B truck driver training, refresher classes and customized driver training. For more information, call 717-221-1357.

**Transportation (AUTO)** 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.

**Professional Development and Management Training** creates bottom line results for stronger organizational performance. HACC's Workforce staff works with organizations to customize training for companies to match their strategic directions. Training is provided for competency development for anyone from the plant floor through supervisors, managers, and all other professionals within an organization. Also available are classes in management, leadership,

communications, team building, and interpersonal skills. For more information, call 717-221-1337.

In **Healthcare**, HACC offers an ever-expanding variety of noncredit training programs, including Medical Billing, Medical Coding, Nurse Aide, Massage Therapy, Cardiology Technician, Pharmacy Technician, Medical Office Technician, Physician's Office Assistant, and Healthcare IT Specialist. 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 noncredit healthcare programs, call 717-221-1352.

## Community Education Department

The **Community Education Department** provides adult learning in various subjects, including culinary certificate training, ServSafe certification, RAMP certification, retirement planning, programs for youth, fitness classes, languages and entrepreneurship. Special events include Living and Learning Seminars and Civil War Seminars. For more information call 717-221-1309.

The **Adult Education Pathways Department** offers programs in Adult Literacy, Basic & Secondary Education (ALBSE); English as a Second Language (ESL); Workplace Education; College & Career Readiness; and PA KEYS Early Childhood Education. ALBSE classes develop content knowledge in the areas of writing, reading, science, social studies and mathematics. The program targets individuals who need to strengthen their academic skills or who need to obtain the secondary education diploma (GED). ESL programs focus on language

acquisition in academic, workforce and real-life contexts, citizenship and life skills.

Workplace Education programs are designed to improve basic employability and computer skills and can lead to National Career Readiness Certificate and WorkCertified® credential. The College & Career Readiness program prepares students academically for college level coursework and workforce training programs. PA KEYS provides professional development opportunities for practitioners working in Early Childhood Education (ECE). For more details, call 717-780-3256.

## Public Safety

At HACC's Senator John J. Shumaker Public Safety Training Center, HACC provides 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.

The **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.



## Continuing Education/Foundation

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 Pennsylvania 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 and EMS** 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 certification 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. 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 value of investing for the future. Since the Foundation's founding, its mission has been to raise private and corporate revenues in support of scholarships, facilities, and academic programs at HACC. In fact, the HACC Foundation provides more than \$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 learning more about gift opportunities at HACC are invited to contact the HACC Foundation. For more information, please visit [www.hacc.edu](http://www.hacc.edu).

### HACC Alumni Association

Former students of the College who have graduated from a degree, certificate, or diploma credit program or have earned 30 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 all HACC campuses.

The Alumni College Card (\$25 annual fee) enables alumni to use HACC facilities and services, including discounts at all HACC bookstores and selected restaurants, library privileges, discounts on events held at the Rose Lehrman Arts Center, access to HACC's career services and use of the gym, tennis courts and swimming pool at the Harrisburg Campus and the fitness facilities at the Lancaster Campus. For more information, contact [alumniassociation@hacc.edu](mailto:alumniassociation@hacc.edu)





# HACC



## Student Affairs

# Applying for Admissions



## Application Information

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

- Has earned a high school diploma or received a General Education Development (GED) Diploma.
- Satisfies the conditions for a specific high school program offered to high school students.
- Is eighteen years of age or older and has the ability, in the judgment of the college, to benefit from the educational program to be pursued.

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

- Anyone who has never applied previously for credit courses at HACC.
- Anyone who has applied to HACC previously for credit courses, but has never completed classes.
- Any former student who has not taken classes at HACC for five or more years.

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

1. 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.
2. 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.

Submit an official college transcript if you are:

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

3. Other documents may be required for the following admission types:

- **College Pathways 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 in the Center for Global Education 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.

4. 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 1800-ABC-HACC or meet your admissions recruiter 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 1-800-ABC-HACC.

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

HACC  
Central Enrollment Office  
C214  
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 a satisfactory score from the SAT (480 or above on the SAT Reading) or ACT (18 or higher on the ACT Reading) may be exempt from the Reading placement test. Students who present evidence of successful completion of prerequisite, college-level courses or the equivalent are exempt from the test. 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.

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 first test is free. Any subsequent retest costs \$25.00

Once placement tests have been completed, students 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.

# Applying for Admissions

## SPECIAL MAJOR CODES

General Studies ..... 7660  
(Pursuing a General Studies degree)

General Studies/Undecided ..... 7661  
(Undecided about degree program choice)

Guest Student ..... GTST  
(Currently enrolled in good standing at another college but taking course(s) at HACC to fulfill that institution's degree requirements)

Non-Degree/Personal Enrichment ..... NDGR  
(Seeking non-degree personal enrichment. Not eligible for financial aid.)

## TRANSFER 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.

Architecture .....	4010
Art .....	2130
Biology .....	3091
Business Administration.....	1020
Chemistry .....	3020
Communications.....	2030
• Human Communication.....	HCOM
• Public Relations .....	PREL
• Journalism .....	JOUR
Computer Information Security .....	1030
Criminal Justice.....	6050
• Law Enforcement .....	LWEN
• General Transfer .....	GNRL
Criminal Justice (PASSHE).....	6051
Pre-Dietetics .....	3050
Pre-Health Professions .....	3150
Early Childhood – Elementary Education .....	5070
Engineering .....	4120
Environmental Science.....	3040
Humanities, Languages and the Arts.....	2091
International Studies.....	5030
Math/Computer Science.....	4030
Mathematics.....	4070
Philosophy.....	2050
Physical Education/Exercise Science.....	3121
Physical Science.....	3070
Physical Science Education.....	3130
Psychology.....	5150
Social Sciences.....	5090
Social Services.....	5060
Theatre Arts – Performing Arts.....	2080

## CAREER CURRICULA

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

Accounting.....	1460
Administrative Office Management .....	1921
Architectural Technology .....	4470
<b>Automotive Technology – GM ASEP*</b> .....	<b>4570</b>
<b>Automotive Technology*</b> .....	<b>4480</b>
Banking and Financial Services.....	1491
Building Construction Technology.....	4510
Business Management.....	1510
Business Studies.....	1500
Civil Technology.....	4720
Computer Information Systems .....	1792
Business Intelligence Application Developer.....	BIAD
Computer Support Specialist .....	SUPP
• Database Analyst .....	DATA
Computer Networking Tech .....	4590
Culinary Arts.....	1581
<b>Pre-CVT-Invasive Cardiovascular Technology**</b> .....	<b>351P</b>
<b>Pre-CVT-Cardiac Sonography**</b> .....	<b>353P</b>
<b>Pre-Dental Hygiene**</b> .....	<b>349P</b>
<b>Pre-Diagnostic Medical Sonography**</b> .....	<b>354P</b>
Early Care and Education.....	5501
Electronic Engineering Technology.....	4580
Electrical Technology .....	4750

Enology & Viticulture Technology.....	1865
<b>Environmental Specialist*</b> .....	<b>3570</b>
• Environmental Assessment.....	ENAS
• Sustainable Resources .....	SURE
Fire Science Technology .....	6630
Geospatial Technology .....	4760
Gerontology.....	3470
<b>Graphic &amp; Interactive Design*</b> .....	<b>2841</b>
<b>Pre-Health Science*</b> .....	<b>359P</b>
Healthcare Management.....	3600
Heating, Ventilation, Air Conditioning (HVAC).....	4780
Home Building and Remodeling .....	4790
Hospitality and Tourism Management .....	1901
• REST – Restaurant/Food Service Management	
• HTLM – Hotel and Lodging Management	
• TOUR – Tourism, Convention & Event Management	
Human Services .....	5550
Marketing.....	1640
Mechanical Engineering Technology .....	4700
Mechatronics.....	4711
Photography.....	2850
<b>Pre-Medical Assisting**</b> .....	<b>352P</b>
<b>Pre-Medical Laboratory Technician**</b> .....	<b>358P</b>
Music Industry .....	1801
Nanofabrication Manufacturing.....	4690
<b>Pre-Nuclear Medicine Technology**</b> .....	<b>363P</b>
<b>Pre-Nursing**</b> .....	<b>368P</b>
Paralegal Studies.....	5701
<b>Pre-Paramedic**</b> .....	<b>369P</b>
Police Science.....	6800
<b>Pre-Radiologic Technology** (College Based)</b> .....	<b>376P</b>
<b>Pre-Respiratory Therapist**</b> .....	<b>392P</b>
<b>Pre-Surgical Technology**</b> .....	<b>362P</b>
<b>Radiology Informatics</b> .....	<b>3780</b>
Real Estate Marketing.....	1720
Structural Engineering Technology .....	4850
Technology Studies.....	4680
Web Development and Design.....	1810

## CERTIFICATE CURRICULA

Certificate curricula are concentrated programs in specific skill areas. They are designed to provide skills for employment. Students may continue to study for the associate degree in most curricula.

Administrative Office Management.....	1371
Architectural Technology .....	4170
<b>Automotive Technology*</b> .....	<b>4200</b>
Baking and Pastry Arts.....	1321
Banking and Financial Services.....	1251
Building Construction Technology .....	4250
Civil Technology.....	4220
Computer Information Systems .....	1312
• Business Intelligence Application Developer..	BIAD-C
• Computer Support Specialist.....	SS-C
• Database Analyst.....	DA-C
Computer Networking Tech .....	4230
<b>Culinary Arts</b> .....	<b>1261</b>
<b>Pre-Dental Assisting**</b> .....	<b>320P</b>
Early Childhood Care and Education .....	5170
Electrical Technology .....	4370
Electronic Technology.....	4310
Enology and Viticulture Technology.....	1303
Fire Science Technology .....	6260
Geospatial Technology .....	4410
Gerontology.....	3300
<b>Graphic &amp; Interactive Design*</b> .....	<b>2200</b>
Heating, Ventilation, Air Conditioning (HVAC).....	4280
Home Building and Remodeling .....	4430
Hospitality and Tourism Management .....	1101
• RM_C – Restaurant/Food Service Management	
• HM_C – Hotel and Lodging Management	
• TM_C – Tourism, Convention & Event Management	
Human Services .....	5430
Mechanical Technology .....	4350
Mechatronics.....	4261
Medical Laboratory Technician/Clinical	
Laboratory Technician.....	3260
Photography.....	2400
<b>Pre-Medical Assisting**</b> .....	<b>321P</b>
Paralegal Studies.....	5301
<b>Pre-Paramedic**</b> .....	<b>333P</b>
<b>Pre-Practical Nursing*</b> .....	<b>327P</b>

<b>Pre-Surgical Technology**</b> .....	<b>322P</b>
<b>Structural Engineering Technology</b> .....	<b>4581</b>
Technology Studies .....	4400
Web Development and Design .....	1450
Welding Technology.....	4161

## DIPLOMA PROGRAMS

Diploma programs are less than one year in length and are designed to provide essential entry-level skills for immediate employment. In some programs some diploma credits may not apply to the certificate and associate degree. Ask your advisor for specific information.

Auctioneering.....	0100
Carpentry Technology .....	0590
CIS – Software Specialist.....	0220
Construction Estimating .....	0520
Construction Field Supervision.....	0530
Construction Project Management .....	0540
<b>Culinary Arts – Catering</b> .....	<b>0121</b>
Electrical Technology.....	0300
Geospatial Technology .....	0580
Gerontology .....	0231
Heating, Ventilation, Air Conditioning (HVAC).....	0280
Home Building and Remodeling.....	0290
Mechatronics.....	0461
Music Audio and Recording Technology .....	0161
<b>Pre-Phlebotomy Technician**</b> .....	<b>039P</b>
Professional Bookkeeping .....	0360
Technology Studies .....	0640
Welding .....	0500

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

\*\*Pre-clinical students: Clinical programs are selective and competitive. Admission to the college does not guarantee acceptance into the clinical program.

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

# Applying for Admissions

## 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).



## Registration

Registration includes the selection of classes, the entry of the class selection into the computer, and 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 Books

Textbooks are available before the beginning of the term in the campus bookstores, as well as online at [www.hacc.edu](http://www.hacc.edu). It is recommended that students purchase books before the term begins.

## Policies Governing Courses

### 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 required to enroll in English or reading courses may not enroll in 100 or 200-level courses (except for Foundational Studies courses) until they have successfully completed ENGL 002. Students placing into two or more developmental areas may also be 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 who speak other languages. ESL students will be screened prior to class assignment and registration to determine second language needs and appropriate placement. College regulations mandate ESL coursework prior to any college work in writing or speech. In addition, reading courses may be scheduled only after an ESL student completes ENGL 027 with a grade of C or higher.

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).

### 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 advisor. 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. 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.

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 a college administrator. 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.

# Applying for Admissions/Tuition and Fees

## 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 grade 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 grade but will be responsible for the published percentage of tuition and fees. Students who do not plan to attend a class or classes must initiate a drop or withdrawal to avoid possible charges and failing grades. Details about assigning grades are in the Policies section of this catalog. 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.

## 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.

## 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, HACCWeb, Student Records. Applications are also available in Records and at the Welcome Center at each HACC location.

## Tuition and Fees

### 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

approximately \$138 million in aid. 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). Depending upon the sponsoring district, the amount of support may not exceed the amount the district pays to HACC in support of students attending HACC. Interested 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).

## Tuition and Fees

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.

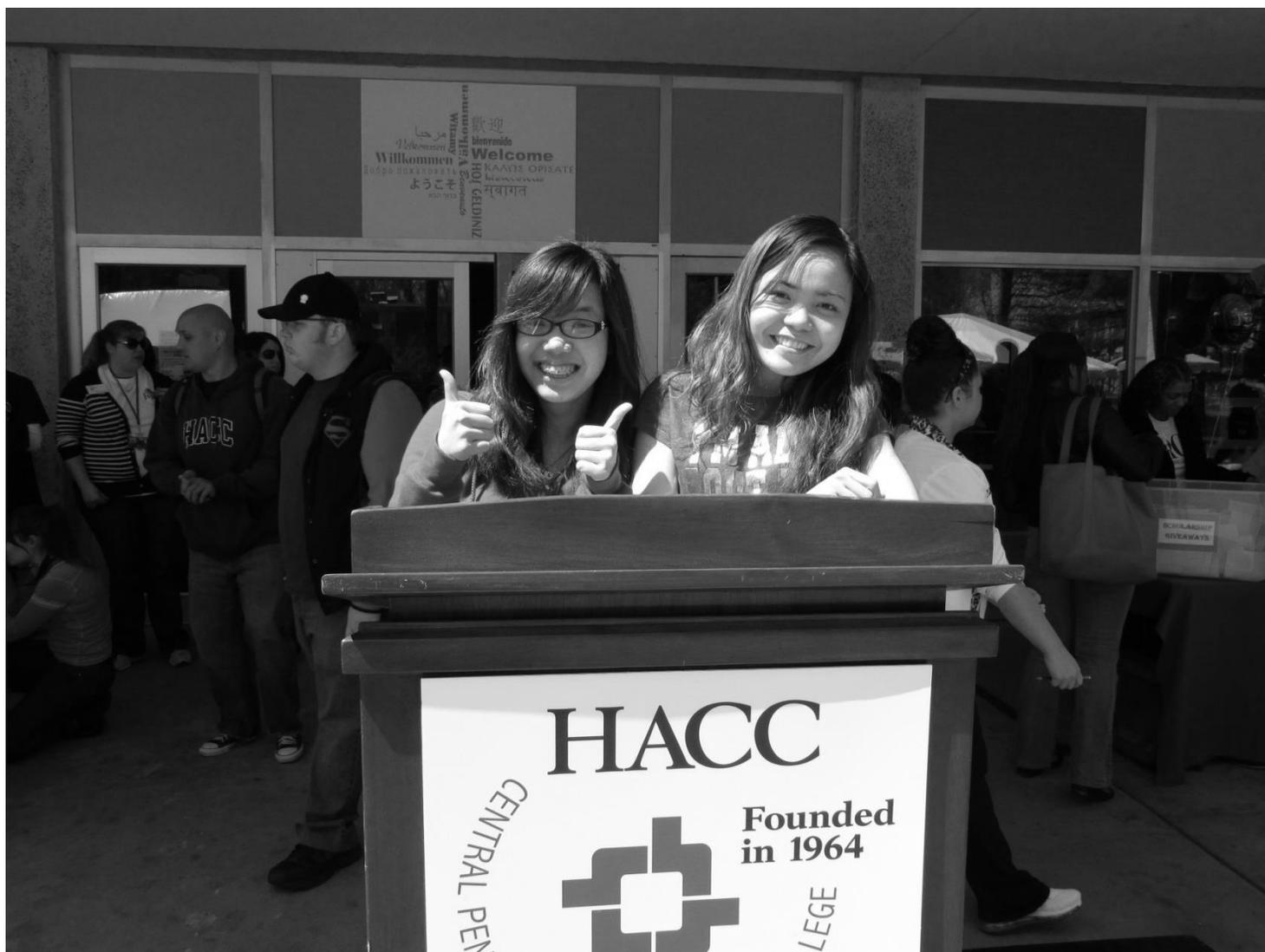
The College may refuse to issue grades or transcripts and deny registration or readmission to students who owe money to the College or who have failed to return college books or equipment.

### 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 terms) parts-of-term, refund of one half of tuition charges up through the third week of classes (or the equivalent).

Refund dates are published on the reverse side of the Schedule/Bill and at [www.hacc.edu](http://www.hacc.edu).

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. 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.



# Paying for College

Tuition and Fees are subject to change at the discretion of the college.  
**Academic Year 2015-16**  
 (includes Summer II and Fall 2015 and Spring and Summer I 2016)

**In-State Resident, [Sponsored](#)** (Summer II and Fall 2015 and Spring and Summer I 2016):

Credits	Tuition	Activity Fee	Campus Revitalization Fee	Capital Outlay Fee	Institutional Fee	Technology Fee	Total Cost
1	\$162.50	\$3.50	\$0.50	\$0	\$12.00	\$22.00	\$200.50
3	\$487.50	\$10.50	\$1.50	\$0	\$36.00	\$66.00	\$601.50
6	\$975.00	\$21.00	\$3.00	\$0	\$72.00	\$132.00	\$1,203.00
9	\$1,462.50	\$31.50	\$4.50	\$0	\$108.00	\$198.00	\$1,804.50
12	\$1,950.00	\$42.00	\$6.00	\$0	\$144.00	\$264.00	\$2,406.00

To calculate tuition for credits not listed, multiply \$200.50 by the total number of credits.

**In-State Resident, Non-Sponsored** (Summer II and Fall 2015 and Spring and Summer I 2016):

Credits	Tuition	Activity Fee	Campus Revitalization Fee	Capital Outlay Fee	Institutional Fee	Technology Fee	Total Cost
1	\$207.00	\$3.50	\$0.50	\$5.00	\$12.00	\$22.00	\$250.00
3	\$621.00	\$10.50	\$1.50	\$15.00	\$36.00	\$66.00	\$750.00
6	\$1,242.00	\$21.00	\$3.00	\$30.00	\$72.00	\$132.00	\$1,500.00
9	\$1,863.00	\$31.50	\$4.50	\$45.00	\$108.00	\$198.00	\$2,250.00
12	\$2,484.00	\$42.00	\$6.00	\$60.00	\$144.00	\$264.00	\$3,000.00

To calculate tuition for credits not listed, multiply \$250.00 by the total number of credits.

**Out-of-State Resident** (Summer II and Fall 2015 and Spring and Summer I 2016):

Credits	Tuition	Activity Fee	Campus Revitalization Fee	Capital Outlay Fee	Institutional Fee	Technology Fee	Total Cost
1	\$250.00	\$3.50	\$0.50	\$10.00	\$12.00	\$22.00	\$298.00
3	\$750.00	\$10.50	\$1.50	\$30.00	\$36.00	\$66.00	\$894.00
6	\$1,500.00	\$21.00	\$3.00	\$60.00	\$72.00	\$132.00	\$1,788.00
9	\$2,250.00	\$31.50	\$4.50	\$90.00	\$108.00	\$198.00	\$2,682.50
12	\$3,000.00	\$42.00	\$6.00	\$120.00	\$144.00	\$264.00	\$3,576.00

To calculate tuition for credits not listed, multiply \$298.00 by the total number of credits.

## Additional Fees

- Independent Study Fee
- 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 check, 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.

# Financial Aid

## 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:

1. Applying for Financial Aid
2. Determining Aid Eligibility
3. Awarding Financial Aid
4. Disbursing Financial Aid
5. 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

### Applying for Financial Aid

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

The recommended filing date is April 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 April 15<sup>th</sup> receive maximum consideration for aid eligibility.

After completing the FAFSA online, student 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. Student 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 in 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) are considered to be the primary source of financial support for postsecondary education. Financial aid is intended to supplement, not replace, family resources.

#### Formula for determining financial need:

$$\begin{aligned} & - \text{Cost of Attendance} \\ & - \text{Expected Family Contribution} \\ & = \text{Financial Need} \end{aligned}$$

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 (living, 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's 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 2015-16 academic year:

COMMUTER - Students who reside with their parents.		
Commuter Expenses	Full Time	Part Time
Tuition and Fees	\$6,000	\$3,500
Living Expenses	\$2,178	\$2,178
Books and Supplies	\$1,728	\$1,008
Miscellaneous Expenses	\$1,602	\$1,602
Transportation	\$2,242	\$1,300
<b>TOTAL</b>	<b>\$13,750</b>	<b>\$9,588</b>

OFF-CAMPUS - Students not residing with their parents.		
Off-Campus Expenses	Full Time	Part Time
Tuition and Fees	\$6,000	\$3,500
Living Expenses	\$7,308	\$7,308
Books and Supplies	\$1,728	\$1,008
Miscellaneous Expenses	\$1,602	\$1,602
Transportation	\$2,242	\$1,300
<b>TOTAL</b>	<b>\$18,880</b>	<b>\$14,178</b>



Non-Pennsylvania Residents – attending full time will pay approximately \$7,152 for tuition and fees and approximately \$4,172 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 mail, 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 borrowed in excess of annual or aggregate loan limit.

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)

Federal regulations require HACC to review the academic progress of students who apply for and/or receive financial assistance, including scholarships, grants, loans and employment programs.

# Financial Aid

Satisfactory Academic Progress (SAP is reviewed at the end of each term. Students who fail to maintain satisfactory academic progress will lose their financial aid eligibility. Progress must be maintained in three ways.

1. Students must complete at least 67 percent of all credits they attempt. Grades of F, I, or W do not count as successfully completed coursework. Repeating classes affects the completion rate. Transfer credits are used in this calculation. In addition, students can only receive federal aid for one repeat of a previously passed course.

PHEAA State Grant recipients must ensure that they complete at least six credits toward their degree for each part-time grant and twelve credits towards their degree for each full-time grant they receive.

2. Students must maintain a minimum cumulative 2.0 Grade Point Average (GPA).
3. Students must graduate within 150 percent of the number of credit hours required for the program of study. For example, a student in a 61 credit program should be able to earn the degree taking no more than 91.5 credits (61 x 1.5).

Students not making progress due to an extenuating circumstance may appeal the loss of their aid to the Appeals Committee. Additional information on the appeal process and complete SAP guidelines is available in HACC's Administrative Procedure #531.

## 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 in accurate, 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. Student loans are disbursed twice a 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 Higher One, a third-party servicer. Refunds are sent based on the student's refund preference through Higher One.

## 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 April 15<sup>th</sup>. 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 institution 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 <https://hacc.academicworks.com/>. For a list of outside scholarships, please visit HACC's website: [www.hacc.edu](http://www.hacc.edu).

*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

# Financial Aid/Academic Support Services

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 borrowers* – 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 a 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 G.I. Bill ® benefits for veterans, eligible dependents of veterans, members of the National Guard, Selected Reserves and Active Duty service persons. 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 x113034  
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](http://www.hacc.edu). Information and current benefit rates can be found at <http://www.benefits.va.gov/gibill/>. The major benefit programs are:

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

**Application:** Veterans must complete an initial application for benefits. A Veterans Benefits Request Form (Yellow Sheet) must be completed each semester to continue to receive benefits. The Yellow Sheet is found in MyHACC under the student tab.

**Advance pay:** Veterans may request an Advance Pay 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 should contact a VA Vocational Rehabilitation Counselor at 717-221-4445.

**Eligibility:** Most programs offered for credit by HACC are approved for VA Education Benefits. Many noncredit programs are approved. Please contact HACC's MVAO-Central for additional details. HACC is also 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 ¾ time or more and receiving G. I. Bill ® benefits may apply for VA Work-Study to work in the Military and Veteran Affairs Offices on the 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.

## Academic Support Services

### The Office for Academic Success

The Office for Academic Success at each of the campuses serves HACC students by providing guided support that contributes to and enhances the total college experience.

Two major areas are sponsored by the Office for Academic Success:

- The Learning Center, including the Carl D. Perkins Vocational and Technical Education
- The Test Center

### The Learning Center

The Learning Center provides free tutorial assistance and workshops in academic skills development on a walk-in or referral basis. The center 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

# Academic Support Services/ Student Life

tutoring), should be directed to the Office for Academic Success at your location. The Harrisburg Campus Learning Center is located chiefly in Whitaker Hall and includes an Accounting/CIS Center (W121), Writing Center (W122), Mathematics/Science Center (W117), ESL Center (W114), and Speech Center (W119). The Lancaster Learning Center is located in Main room 232. The Lebanon Learning Center is located in room D220. The Gettysburg Learning Center is located in the Learning Commons. The York Learning Center is located YL103 and the York Writing Center is in YG136. Hours for the campus centers are posted at the beginning of each term.

## 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 (available at all campuses except York)
- HS ACT, PearsonVUE, NBCC and MOS Testing at Harrisburg only
- Proctoring for other institutions on a pre-arranged basis.

For additional information regarding Test Center services, contact the Office for Academic Success at your 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.

## 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 of Disability Services at the student's primary campus. Additional information is available online at [www.hacc.edu](http://www.hacc.edu).

## Advising and Transfer Center

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 a counselor, academic advisor or a faculty advisor.

HACC has formed articulation agreements 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.

There are many other transfer options available for students. Transfer representatives from many colleges and universities visit the HACC Campuses each semester. This and other important

information can be found online at [www.hacc.edu](http://www.hacc.edu).

## KEYS Program

A 10 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) and also some receiving 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 Assistant offices for those who are already enrolled or wish to enroll (high school diploma or GED required). For more information contact a County Case Manager or visit the KEYS office at any HACC campus or call 717-221-1796.



## Career Services

An integral part of any college student's educational experience should be his or her 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 utilize 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

## Student Life

Services staff can help him/her design a career development plan and explore in-field experience options. As students begin to move toward completion of their programs, the 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 Life

Students who participate in college activities are more satisfied with their college experience. They feel more a part of the College, and they enjoy meeting other students and developing their leadership abilities. 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, college newspapers, and HAWKmail e-mail updates are good sources of information.

The funds collected as activity fees support student groups. Students will find clubs based on shared interests in recreational activities, intramural sports, career or special interests. Students may access Student Life 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, cultural dances, ethnic food festivals, arts and crafts and poetry readings. For more information on multicultural programs, contact your campus Student Life Office, or online at [www.hacc.edu](http://www.hacc.edu), *Student Life*



## Athletics and Recreation

The HACC Athletics program is composed of six varsity intercollegiate teams and one club team. The varsity intercollegiate sports offered are: men’s and women’s basketball, golf, soccer, team tennis, 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 is 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 [www.hacc.edu](http://www.hacc.edu) *Student Life*.

## Student Government and Publications

Among HACC’s well-established activities are student government and publications. 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 Life 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.

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 Life office of your campus.

## Honor Societies

### 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).

### Kappa Beta Delta National Honor Society

Kappa Beta Delta, established by the Association of Collegiate Business Schools and Programs through the Federation of Business Honor Societies is comprised of associate degree-seeking students of business, management, administration, and other business programs who have accumulated 15 or more college-level credits with a cumulative grade point average of 3.0 or higher. HACC was the first community college in Pennsylvania and the second community college in the nation to establish a chapter of Kappa Beta Delta National Honor Society, established by the Association of Collegiate Business Schools.

### 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

# Student Life/College Policies

faculty, have completed college algebra, and have at least a 3.0 GPA overall and in mathematics. The HACC Chapter was established in 2000.

## 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, dance, and family events. The center's facilities include the Auditorium Theatre, the Studio Theatre, 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**, an on-campus theatre ensemble, produces diverse theatre offerings. **Theatre for Young People**, a specialty theatre group, annually produces and tours children's theatre. Auditions for plays 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 Wildwood Singers, a faculty-led student choral group, presents annual winter and spring concerts; and faculty and students often combine talents in special recitals and music programs. The **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, 11 a.m. – 3 p.m., and Tuesdays and Thursdays from 5-7 p.m. For more information call 717-780-2435. Student tickets are available at a substantial discount for most 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. 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 Life Office at each HACC campus.

## Housing

HACC has no dormitories and does not recommend, 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:

1. To learn, teach, study and search for truth without interference or harassment.
2. To move about the campus and in campus buildings freely and without interference or harassment of any kind.
3. 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.
4. To be treated at all times with the courtesy and respect due to all human beings, regardless of ethnic origin, cultural background, sex, 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

# College Policies

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.

1. Physical obstruction or interference with College classes or activities or approved activities of External Entities:
  - a. Any person participating in such activities
  - b. Any person going to or from such activities
2. 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.
3. Violating College harassment policy (College Policy 871, Harassment).
4. 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.
5. Theft of or damage to College-owned or controlled property or that of any person lawfully on the campus.
6. Threatening other individuals with physical harm.
7. Committing any act likely to create an imminent safety or health hazard.
8. 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.
9. Engaging in speech that includes fighting words, which are those words that by their very utterance tend to incite an immediate breach of peace.
10. Interfering with, impeding or causing blockage of the flow of vehicular or pedestrian traffic.
11. 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.

12. 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.
13. Failure to comply with the lawful directions of College personnel acting in performance of their duties.
14. 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.
15. 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.
16. 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.
17. Violations of law on College-owned or controlled property, or at any off-campus College-sponsored or supervised activities.
18. Violation of College policies or procedures not already noted above.

A complete copy of the College's student disciplinary regulation and procedures may be obtained from the Dean of Student Affairs. The regulation is 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 (AP592). 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

### Administrative Procedure 591 Student Grievances

#### I. Purpose

Provides internal procedures for the handling of student grievances concerning decisions, or actions by the College not covered under other Administrative Procedures listed below.

- AP 663: Appeal of Academic Decisions
- AP 513: Financial Aid Satisfactory Academic Progress
- AP 592: Student Disciplinary Action
- AP 641: Refund Procedure - Credit and Non-Credit Courses
- AP 875: Harassment
- AP 879: Bullying

#### II. Definition

Business day – a day when the administrative offices of the College are open.

Student – An individual enrolled in at least one credit or noncredit course.

#### III. Procedures

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 will also observe confidentiality throughout its processes.

#### A. Student Grievance Committee (SGC) Composition

1. SGC shall consist of the Student Judicial Affairs Leader (SJAL) or designee, two (2) administrators appointed by the Administrative and Professional Organization (APO), three (3) faculty appointed by Faculty Senate, and three (3) 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.
2. The SJAL or designee will serve as the Ex-Officio Chair of the SGC and will be responsible for communicating the rules of order to

\* 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.

# College Policies

all parties and documenting proceedings. The SJAL is a voting member of the committee. 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 that a member be removed and the SJAL or designee will make the determination if a conflict of interest does exist. In the event that any party requests the SJAL or designee be removed due to a conflict of interest, the CSAO will make the determination if a conflict of interest does exist. The appropriate organizational body shall replace the member.

## B. Informal Phase

1. Within five\* (5) 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 is available, a College Ombudsperson (Administrative Procedure 121, Ombudspersons) must be contacted in an effort to obtain an informal resolution to the problem. The ALS will maintain notes on any action taken on student complaints according to HACC documentation retention guidelines. Administrative Procedure (AP) 139, Records Management.

## C. Formal Phase

1. 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 SJAL 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.
  2. The SJAL 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.
  3. The SJAL or designee, in consultation with the participants, will determine the meeting site.
  4. The SJAL 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.
  5. 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 SJAL or designee at least three (3) business days before the meeting and the SJAL 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 SJAL or designee.
6. Recordings or verbatim records may be maintained only upon agreement of all parties concerned. The records are to be maintained per AP 139.
  7. After hearing all available evidence, the SGC shall recommend an outcome using the standard of preponderance of evidence (more likely than not) and provide all documentation to the CSAO.
  8. The CSAO will carefully consider the recommendation of the SGC and will render a decision within five (5) business days.
  9. 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.)
  10. 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.
  11. The decision of the CSAO ends the formal grievance process.







# Academic Affairs

# Academic Affairs

## Program Requirements

The College awards Associate in Arts (AA), Associate in Science (AS), an Associate of Fine Arts (AFA) and an Associate in Applied Science (AAS) degrees, Certificates of Proficiency, and Diplomas. Program Guide sheets 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 the campuses in Gettysburg, Lancaster, Lebanon and York, as well as through Virtual Learning. Program descriptions provide information about their availability.

### AA, AFA, AS, or AAS Degrees

The College awards a degree to students who complete an approved Program of Study of a least 61 credits with a Cumulative and Program grade point average of at least a 2.0. Coursework for a degree must include a least 16 credits earned under HACC faculty instruction and at least six of those credits must be in the student's area of concentration.

- **Transfer Degrees** Transfer degrees are designed to facilitate transfer to a four-year institution upon completion of the associate degree. The minimum of 61 credits in an approved Program of Study includes a minimum of 31 credits of General Education Core courses beyond the program-specific for concentration in an area of study bearing the program's name.
- **Career Degrees** Career Degrees are designed for student who wish to enter the workforce upon completion of the associate degree and do not intend to transfer to a four-year institution. The minimum of 61 credits in an approved Program of Study includes a minimum of 22 credits in General Education Core courses beyond the program-specific required courses for concentration in an area of study bearing the program's name. Six credits in the area of the concentration must be taken at HACC.

### Certificates of Proficiency

Certificate programs require two or more terms for completion, and all of the required courses focus on an occupational skill and 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.



### 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 two or more terms for completion. A diploma is awarded to a student who completed an approved Program of Study of at least 16 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.

### Associate Degree – General Education Core Requirements

#### Transfer Programs

- 6 credits – Written Communication
- 3 credits – Oral Communication
- 3 credits – Core A
- 6 credits – Core B
- 9 credits – Core C
  - 3 credits – Math
  - 3 credits – Science
  - 3 credits – Math or Science
- 3 credits – General Education Transfer Elective
- 0 credits – Diversity Requirement\*
- 1 credit – Physical Education and Wellness

#### Career Programs

- 6 credits – Written Communication
- 3 credits – Oral Communication
- 3 credits – Core A
- 3 credits – Core B
- 3 credits – Core C
- 0 credits – Diversity Requirement\*
- 1 credit – Physical Education and Wellness

#### Elective Requirements

Electives should be chosen with the help of an Advisor for the purpose of meeting career, transfer, or employment objectives. There are a few limitations on courses that may be used to meet degree requirements.

- **No course numbered below the 100 level (e.g. Math 020, 051, English 051 and others) or courses numbered above 200 level may be used on an AA or AS degree. An AAS degree program may specify certain other courses.**
- No more than three credit hours of Physical Education may be used to meet Associate Degree requirements.

- No more than three credit hours of cooperative work experience may be used unless a program specifies otherwise.

### First Year Seminar

Starting Fall 2015, degree-seeking students are required to complete a first-year seminar course prior to the completion of their 13<sup>th</sup> credit hour. FS 100 and 102 currently meet this requirement. The FYS 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. Students should speak with an advisor about registering for this course.

### General Education Core Courses and Outcomes

The General Education Outcomes provide the foundation for a common body of essential knowledge and skills. These outcomes are taught and reinforced through Core Courses selected in the knowledge areas of written communication, oral communication, humanities and arts, social and behavior sciences, mathematics, natural and physical science, diversity and physical education and wellness. In addition, Core Abilities integrate with content areas to provide students with the skills they need to be successful in a complex and changing world and to provide a foundation for life-long learning. Core Abilities are information literacy and computer literacy.

### General Education Outcomes:

- **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:** Demonstrate the ability to communicate, create, and collaborate effectively using technologies in multiple modalities.
- **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.

# Academic Affairs

## GENERAL EDUCATION CORE Effective Fall 2014

### HUMANITIES and ARTS

#### (Core A)

##### (D) - Course also meets Diversity Course Requirement

Arabic 101, 102  
Art 181(D), 182(D), 188  
Chinese 101(D)  
English 201, 202, 203, 204, 205, 206(D), 207,  
207H, 217  
French 101(D), 102(D), 201(D), 202(D)  
German 101(D), 102(D), 201, 202  
Spanish 101(D), 102(D), 201(D), 202(D)  
Humanities 101(D), 101H(D), 115, 201(D),  
201H(D), 202, 202H  
Music 102, 102H, 104(D)  
Philosophy 101, 101H, 102, 200(D), 225,  
225H  
Theatre 101

### SOCIAL and BEHAVIORAL

#### SCIENCES (Core B)

##### (D) – Course also meets Diversity Course Requirement

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

### MATHEMATICS, NATURAL and PHYSICAL SCIENCES (Core C)

Astronomy 103, 104  
Biology 101, 103, 103H, 108, 111, 221  
Biotechnology 101  
Chemistry 100, 101, 102, 113, 203  
Environmental Science 201  
Geology 101, 101H, 102, 201  
Mathematics 100, 103, 104, 110, 111, 111H,  
119, 121, 122, 202  
Meteorology 101  
Physical Science 113, 114  
Physics 105, 201, 202, 211

### DIVERSITY COURSES (D)

Administrative Office Specialist 225  
Anthropology 101, 205, 210  
Art 181, 182, 192  
Business 230  
Communication 253, 253H  
Chinese 101  
Criminal Justice 240  
Culinary 153, 209, 210, 211  
Education 180  
English 206, 265, 269  
French 101, 102, 201, 202  
Geography 201, 230  
German 101, 102  
History 101, 101H, 102  
Human Services 206  
Humanities 101, 101H, 116, 201, 201H  
Music 104  
Philosophy 200  
Psychology 216, 229  
Sociology 201, 201H, 202, 203, 205, 211  
Spanish 101, 102, 201, 202

*\*All new students must complete a Diversity course as part of their degree requirements. This requirement must be selected from the list that appears above.*

### PHYSICAL EDUCATION AND WELLNESS COURSES (W)

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

### GENERAL EDUCATION

#### TRANSFER ELECTIVES

##### (D) – Course also meets Diversity Course Requirement

Anthropology 101(D), 201, 205(D), 210(D),  
212, 220  
Arabic 101, 102  
Art 105, 107, 111, 121, 131, 151, 181(D),  
182(D), 183, 184, 185, 187, 188  
Astronomy 103, 104  
Biology 101, 102, 103, 103H, 108, 111, 121,  
122, 130, 212, 221  
Biotechnology 101  
Chemistry 100, 101, 102, 113, 203, 204  
Chinese 101(D)  
Communication 101, 101H, 110, 120, 203,  
251, 253(D), 253H(D)  
Computer Information Systems 105, 110  
Computer Science 113, 135, 161  
Criminal Justice 101, 108, 211  
Economics 201, 202

English 104, 106, 107, 108, 201, 202, 203,  
204, 205, 206(D), 207, 207H, 246, 247,  
265(D), 267, 269(D), 278, 279  
Environmental Science 201  
French 101(D), 102(D), 201(D), 202(D)  
Geography 101, 201(D), 230(D)  
Geology 101, 101H, 102, 201  
German 101(D), 102(D), 201, 202  
Government and Politics 201, 202, 205, 208  
Health 101  
History 101(D), 101H(D), 102(D), 103, 103H,  
104, 107, 110, 111, 120, 161, 201, 202, 205,  
210, 218, 219, 220, 221  
Honors 101H, 250H  
Humanities 101(D), 101H(D), 113, 114, 115,  
201(D), 201H(D)  
Mathematics 103, 104, 110, 111, 111H, 113,  
114, 119, 121, 122, 125, 202, 210, 220, 221,  
222  
Meteorology 101  
Music 102, 102H, 104(D), 119, 120  
Philosophy 101, 101H, 102, 200(D), 215, 225,  
225H  
Physical Education (All)  
Physical Science 113, 114  
Physics 201, 202, 211, 212, 215  
Psychology 101, 201, 209, 211, 212, 213,  
216(D), 221, 229 (D), Sociology 201(D),  
201H(D), 202(D), 203(D), 205(D), 211(D), 226  
Spanish 101(D), 102(D), 201(D), 202(D)  
Theatre 101, 110

# Academic Affairs

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

**Please Note there are different Core requirements for students who began Fall 2009 and before, for students who began Fall 2010, for students who began Fall 2011, and students beginning Fall 2012.**

## 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.

## Credit Courses at HACC

Students earn credits for successful completion of courses under faculty instruction at the College, including independent study.

## 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 College Administrative Procedure 665). Upon successful completion of an examination and proper notification to the Records 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 Records 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 in the College Level Examination Program. 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.cfasttrack.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) to submit credentials or a portfolio for evaluation. Upon assessment of the credentials and/or portfolio, the Department Chair may recommend awarding credit. A fee is required.

The College also awards credit for certain certifications from professional bodies, agencies, and institutions. Please contact the Records 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 Records Office.

HACC allows up to 30 credits to be awarded by examination and/or Life Experience.

## Credit by Transfer

Students admitted to HACC seeking to earn a degree, certificate or diploma and who are currently taking or have completed one or more courses at another post-secondary school, may request to have official transcripts from other schools officially evaluated for transfer of credits (see Administrative Procedure 652). 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 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 Records 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.

## Academic Affairs

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 Records Office. An official transcript is one that is officially authorized by the Records official at the institution and sent directly to the HACC Records Office.

Questions regarding transfer of credit requirements should be directed to the Records 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 College Pathways at 717-736-4111.

### 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 College Pathways by calling 717-736-4111 or email [collegepathways@hacc.edu](mailto:collegepathways@hacc.edu). Additional information can be found at [www.hacc.edu/collegepathway.com](http://www.hacc.edu/collegepathway.com)



### The Honors Program

The Honors Program is designed to meet the academic 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 serve to further promote student excellence by encouraging 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 where students do independent research. The classes are discussion based, 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, incoming student should submit the single page application, available online, along with any required support materials to the Admissions Office at their primary campus. All pertinent transcripts and test scores will be independently verified by the Admissions Office. Currently enrolled HACC students should submit the single page application, available online, to the Honors Co-Directors. A letter of acceptance will be sent to all qualifying Honors students from the Honors Co-Directors.

To be admitted to the Honor 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, or have a combined 1150 SAT

score (Reading and Math). Current HACC students must have at least a 3.5 GPA. Students with GPA below 3.5 may submit a recommendation letter from a HACC faculty member together with an application essay to apply to the program.

All English developmental course requirements (writing and reading) must be satisfied prior to enrollment in the program. Also required is eligibility for MATH 020 or higher at the time of enrollment.

Any interested and motivated student may sign up for one Honors course with the permission of the instructor 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 Program designation, students must complete 15 credit hours of Honors (including HONS 101 H: Honors Foundation Seminar) and maintain at least a 3.25 overall GPA. The Honors Foundation Seminar should be taken preferably during the first year in the program.

For the list of currently offered Honors courses please go to <http://www.hacc.edu/programsandcourses/programs/honors/honors-credit-classes.cfm>.

The transcript of graduating Honors students will have the Honors Program seal; also, all Honors courses taken by the student will be listed in a prominent category on the transcript. As part of the student's regalia, a distinctive purple Honors cord will symbolize successful completion of the program.

### Honors Program Co-Directors

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

Iva Balic  
Associate Professor, English  
[ibalic@hacc.edu](mailto:ibalic@hacc.edu)  
(717) 7802557

### Honors Program Counselor

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

# Academic Affairs

## 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.

### 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 will 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.

## International Education • Study Abroad

### International Students

Each year, HACC welcomes over 200 international students from more than 50 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, monitoring academic progress, 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 including faculty led programs, languages abroad, and semesters abroad.

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. HACC Study Abroad-Starts Here, Go Anywhere. Our study abroad programs range from one class to full time, with travel from one week to a semester overseas, and are offered in many locations around the world. Courses are offered in many academic disciplines and can be used to fulfill major and general education requirements. Scholarships are available and financial aid can be used to cover program fees and expenses.

For more information, contact the Center for Global Education at 717-780-1100 or online at [www.hacc.edu](http://www.hacc.edu).

## Library and Information Services

The Library at HACC is here to support our students with access to a wide range of resources and services. The library has five physical locations and a web presence to support all students and faculty across the college.

Library faculty are available to provide assistance to students face-to-face in campus libraries and via online chat. Librarians work with students to 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.

In addition to chatting with HACC librarians, students have access to librarian support 24/7 through Ask Here PA when no HACC librarian is online. Students are automatically referred to Ask Here PA when they click the HACC chat link if no HACC librarian is available.

HACC Library resources include physical books, magazines, journals, and DVDs. The Library's online resources include

databases of magazine, journal, and newspaper articles, streaming video, and ebooks. These online materials are available both on and off campus. Student will need their HACC ID and PIN to access these materials when off campus.

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/Students/Library>) to find all the resources available, contact information, and hours of operation.



## Academic Policies

### Academic Achievement Policies

Board of Trustees policies and administrative procedures may be examined by any member of the College community. A file of Administrative Procedures 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 Administrative Procedure 663. 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.

# Academic Affairs

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	1.00
F	Failure	0.00
IF	Incomplete Work, Not Completed	0.00
YF	Work In Progress, Not Repeated	0.00
W	Withdrawal	0.00
I	Incomplete	0.00
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. A W grade will be granted by the instructor upon request of the student from the end of the refund period until the midpoint of the course as defined in the College calendar. The student must be attending class in a manner consistent with the instructor's attendance policy, have completed the required graded material, and have not been dishonest in completing the work in order to be eligible for the W grade. From the midpoint of the course through the conclusion of the course, which is the last class period, the student will receive a grade of W or F, depending upon the instructor's assessment of the student's performance, which may take into account extenuating circumstances. Students must be aware of their instructors' policies concerning attendance and dropping a class.



**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. On the recommendation of the instructor and subject to the department chairs' approval, the eight week period may be extended. An incomplete grade is computed as an F in the student's cumulative grade point average when not completed within the allotted period.

**The Y (work in progress) grade** is restricted to 0-level courses, unless otherwise approved by an academic department and the Provost 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

Students may repeat a course for which they have received a D, F, I, Y, or W grade. In all repeats, the last grade received for the course will be the grade employed to calculate the grade point average (except I, Y, and W grades); however, all grades will be recorded on the student's transcript. If a course is no longer offered, a student may request permission to substitute another course. Unless more strictly limited in a special or selective admissions program, the number of repeats will be limited to two. (Complete information is found in Administrative Procedures 667 and 668.)

### 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 continuation. 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 Administrative Procedure #513.

- 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: Environmental Studies (Environmental Associate, Environmental Specialist), Nursing, and other programs within Health Careers (for specific programs and their standards, refer online to [www.hacc.edu](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



# Academic Affairs



## 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 no 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;

# Academic Affairs/Computer Usage

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:

1. To insure the security and operating performance of its systems and networks
2. 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 files 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

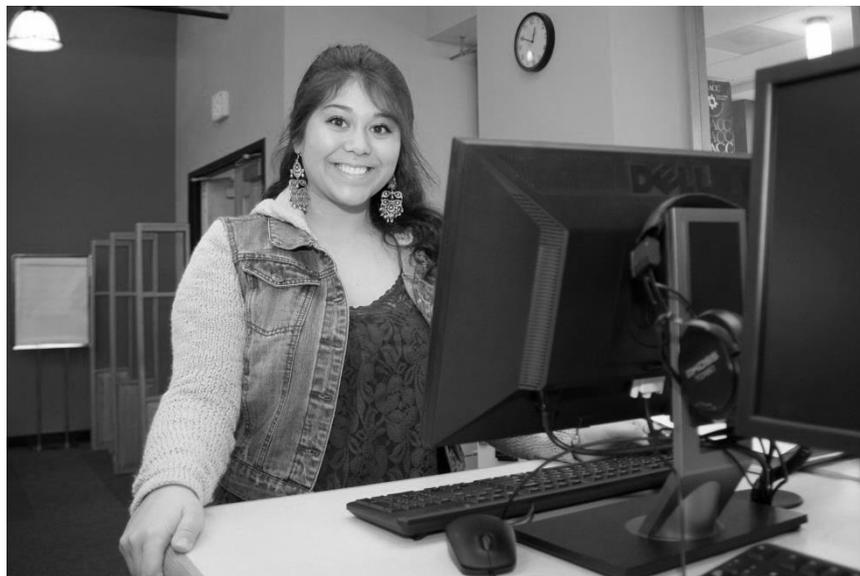
Any and all records generated by the College, including but not limited to personnel records, payroll records, business and other related records are considered to be confidential. Willful or intentional unauthorized disclosure of such information violates College policy.

### 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

1. 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.
2. 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



# Computer Usage

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.
3. 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, an any communications sent through College Internet connections.

## Email Privacy, Distribution and Usage

### 1. 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.")

### 2. 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.

### 3. 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.

### 4. 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

# Academic Programs

## ACCOUNTING, Associate in Arts Career Degree - 1460

*Business Studies Department*

The Accounting AA program prepares students with the specialty skills and knowledge necessary to gain employment as trainees in the following entry-level positions: accounts payable and receivable, bookkeeping, and general accounting. Courses in this program may also be taken in preparation for the Pennsylvania Certified Public Accountant (CPA) exam. The Accounting AA 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 program is available at the Harrisburg and Lancaster campuses. Some courses may be taken at Gettysburg, Lebanon, and York campuses as well as through Virtual Learning.

### *Career Opportunities*

Graduates of this program find employment in accounting firms, banks, private industry, and government service.

### *Competency Profile*

This curriculum is designed to prepare students to:

- Provide written and oral analyses to accounting issues and financial reporting data obtained through professional research and case studies
- Examine accounting rules and standards and provide businesses and organizations with interpretative analyses
- Prepare the financial statements of a business or organization outlining its financial health
- Recognize the scope of ethical choices within the accounting field and, within an appropriate professional framework, apply them in practice
- Demonstrate how accounting information supports and influences decisions made by business leaders
- Discuss all the components – management strategy, financial structure, marketing plans, and laws – that influence the financial reporting of an organization
- Conduct a “break even” analysis to determine the viability of a new business venture
- Apply fundamental accounting principles to business and reporting issues
- Develop a budget and demonstrate its use as a planning and evaluation tool
- Interpret the financial statements of publicly traded companies using the footnotes and financial ratios
- Develop team building skills through simulated accounting situations that businesses and organizations routinely encounter
- Use the latest technology tools to solve common accounting problems, facilitate transaction recordings, and help with financial reporting

### **PROGRAM REQUIREMENTS (TOTAL CREDITS = 63)**

<b>General Education</b>		<b>Major Requirements</b>		<b>Other Required Courses</b>	
ENGL 101 English Composition I	3	ACCT 101 Principles of Accounting I	4	CIS 105 Intro to Software for Business	3
ENGL 102 English Composition II (or)	3	ACCT 200 Principles of Accounting II	4	CIS 108 Intro to Power Point	1
ENGL 104 Technical Writing (or)	(3)	ACCT 201 Intermediate Accounting I	4	*MATH 103 College Algebra	3
ENGL 106 Business Writing	(3)	ACCT 203 Income Tax Accounting	4	MGMT 201 Principles of Management	3
COMM 101 Effective Speaking	3	ACCT 204 Managerial Cost Accounting	3	MKTG 201 Principles of Marketing	3
Core A Elective	3	ACCT 215 Microcomputer Accounting Applications	3		13
Core B Elective	3	ACCT 275 Accounting Capstone (or)	3		
Core C Elective	3	BUSI 291 Business Studies Internship	(3)		
Free Elective	3	BUSI 201 Business Law I	3		
Physical Education & Wellness	1		28		
	22				

\* May be replaced with MATH 104, 110, 119, 121, 122, 125, or 202.

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

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

<b>Fall Semester</b>	<b>Spring Semester</b>	<b>Fall Semester</b>	<b>Spring Semester</b>
ACCT 101	4	ACCT 200	4
CIS 105	3	COMM 101	3
CIS 108	1	Core B Elective	3
ENGL 101	3	Core C Elective	3
MATH 103 or higher	3	ENGL 102, 104 or 106	3
PE & Wellness	1		
		ACCT 201	4
		ACCT 203	4
		ACCT 215	3
		MKTG 201	3
		ACCT 204	3
		ACCT 275 or BUSI 201	3
		BUSI 201	3
		Free Elective	3
		MGMT 201	3

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## ADMINISTRATIVE OFFICE MANAGEMENT, Associate in Arts Career Degree - 1921

*Engineering & Technology Department*

The Administrative Office Management AA 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. Some of the required courses are available at Lancaster, Lebanon, and York campuses, as well as through Virtual Learning.

### *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
- Write and speak effectively
- Appreciate accomplishments in the arts and sciences

### **PROGRAM REQUIREMENTS (TOTAL CREDITS = 68)**

<b>General Education</b>		<b>Major Requirements</b>		<b>Other Required Courses</b>	
ENGL 101 English Composition I	3	AOS 101 Document Processing	3	BUSI 101 Introduction to Business	3
ENGL 106 Business Writing	3	AOS 110 Microsoft Word	3	CIS 105 Introduction to Software for Business	3
COMM 101 Effective Speaking (or)	3	AOS 111 Grammar & Punctuation Essen.	3	CIS 108 Introduction to Power Point	1
COMM 203 Interpersonal Communication	(3)	AOS 160 Office Accounting (or)	3	CIS 135 Intermediate Spreadsheet Applica	3
Core A Elective	3	ACCT 101 Principles of Accounting I	(4)	CIS 145 Using Mobile Technologies	3
Core B Elective	3	AOS 203 Records & Imaging Management	3	CIS 207 Desktop Publishing	3
Free Elective	3	AOS 224 Office Applications	3	MATH 100 College Math for Bus (Core C)	3
Physical Education & Wellness	1	AOS 225 Office Procedures (D)	3	MGMT 202 Office Management	3
	19	AOS 226 Office Transcription	3	WEB 102 Web Exploration & Design	3
			24		25

*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.

<b>Fall Semester</b>	<b>Spring Semester</b>	<b>Summer Session</b>	<b>Fall Semester</b>	<b>Spring Semester</b>
AOS 101	3 AOS 110	3 CIS 108	1 AOS 203	3 AOS 160 or ACCT 101
AOS 111	3 BUSI 101	3 COMM 101 or 203	3 AOS 224	3 AOS 225
CIS 105	3 CIS 135	3 ENGL 106	3 CIS 145	3 AOS 226
Core A Elective	3 ENGL 101	3	3 CIS 207	3 Free Elective
MATH 100 (Core C)	3 WEB 102	3	3 Core B Elective	3 MGMT 202
				3 PE Wellness
				1

*Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.*

# Academic Programs

## ADMINISTRATIVE OFFICE MANAGEMENT, Certificate Program - 1371

Engineering & Technology Department

CIP Code: 52.0401

The Administrative Office Management certificate 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 integration of various software applications. The complete program is available at the Harrisburg Campus. Some of the required courses are available at the York Campus, as well as through Virtual Learning.

### 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
- Research using the Internet
- Manage records manually and electronically
- Perform basic accounting functions
- Create effective presentations
- Implement up-to-date office technologies and procedures

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 37)

#### General Education

#### Major Requirements

#### Other Required Courses

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 145 Using Mobile Technologies	3
AOS 203 Records Management	3	CIS 207 Desktop Publishing	3
AOS 225 Office Procedures	3	CIS Elective ( Any CIS except CIS 100)	3
AOS 226 Machine Transcription	3	MATH 100 College Math for Business	3
	18	WEB 102 Web Exploration & Design	3
			19

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

# Academic Programs

## ARCHITECTURE, Associate in Arts Transfer Degree - 4010

Engineering & Technology Department

The Architecture AA Transfer program prepares students to enter a 4-year institution and obtain a Bachelor's degree. The minimum educational requirement to become a Registered Architect in the Commonwealth of Pennsylvania is a Bachelor's of Architecture degree. Since the requirement 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. This program transfers into the Facilities Management BS degree at Temple University. Students interested in pursuing this option are encouraged to apply for Dual Admission. The complete program is only available at the Harrisburg Campus. Some of the required courses are available at the Lancaster, Lebanon, Gettysburg, and York campuses.

### Career or 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 prepares students to:

- Transfer into an architectural or facilities management program at a four-year institution
- Develop their own philosophy and process for preparing architectural designs
- Prepare an architectural portfolio that comprises of the graphical solutions to common architectural design problems
- Utilize industry terminology in preparing architectural drawings and communicate design solutions to outside individuals
- Resolve complex architectural programs within contextual issues

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 66)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	ARCH 101 Architectural Design I	3	GTEC 110 Construction Print Reading	3
ENGL 102 English Composition II	3	ARCH 102 Architectural Design II	3		
COMM 101 Effective Speaking	3	ARCH 111 Architectural Graphics I	3		
Core A Elective (Recommend: HUM 115)	3	ARCH 121 History of Architecture I	3		
Core B Electives	6	ARCH 201 Architectural Design III	4		
Core C Elective (MATH)	3	ARCH 202 Architectural Design IV	4		
*Core C Elective (Science)	3	ARCH 211 Architectural Graphics	3		
Core C Elective (MATH or Science: Rec: MATH 121)	3	ARCH 214 Site Planning	3		
**General Education Transfer Elective	3	ARCH 221 History of Architecture II	3		
Physical Education & Wellness	1	ARCH 241 Architectural Sketching	3		
	31		32		

\*Select courses from the following subjects: ASTR, BIOL, CHEM, GEOL, METR, PHSC, or PHYS.

\*\*Suggested General Education Transfer Elective: MATH 119, 121, or 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		Spring Semester		Summer		Fall Semester		Spring Semester	
ARCH 101	3	ARCH 102	3	Core B Elective	3	ARCH 201	4	ARCH 202	4
ARCH 111	3	ARCH 121	3	PE & Wellness	1	ARCH 221	3	ARCH 214	3
Core A Elective	3	ARCH 211	3			ARCH 241	3	COMM 101	3
ENGL 101	3	ENGL 102	3			Core B Elective	3	Core C Elect (Sci)	3
GTEC 110	3	Core C Elect (Math)	3			Core C Elect Math/Science	3	GE Transfer Elect	3

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## ARCHITECTURAL TECHNOLOGY, Associate in Applied Science Career Degree - 4470

*Engineering & Technology Department*

The Architectural Technology AAS degree prepares students for employment in architectural firms and related settings. This program emphasizes Building Information Modeling (BIM) and the application of codes in the preparation of architectural construction documents. Structural, mechanical, and electrical construction documents, as well as architectural presentation drawings, are also explored. The complete program is only available at the Harrisburg Campus. Some of the required courses can be completed at the Lancaster 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, as well as code researchers, 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, design development and working drawings using CAD and BIM software
- Explain mechanical, electrical, and structural systems and their integration into the building process
- Explain construction materials, systems, and methods used in architectural construction
- Use a computer in an architectural office or related setting
- Assist in building code research
- Write and speak effectively
- Appreciate accomplishments in the arts and sciences

### **PROGRAM REQUIREMENTS (TOTAL CREDITS = 66)**

<b>General Education</b>		<b>Major Requirements</b>	
ENGL 101 English Composition I	3	ARCH 101 Architectural Design	3
ENGL 104 Technical Writing	3	ARCH 111 Architectural Graphics I	3
COMM 203 Interpersonal Communication	3	ARCH 112 Architectural Working Drawings I	3
Core A Elective (Recommend: HUM 115)	3	ARCH 130 Construction Materials & Methods	3
Core B Elective (Recommend: GIS 141)	3	ARCH 135 Codes & Specifications	3
Core C Elective (Recommend: ENVS 201)	3	ARCH 211 Architectural Graphics II	3
Free Elective	3	ARCH 212 Architectural Working Drawings II	4
Physical Education & Wellness	1	ARCH 214 Site Planning	3
	22	ARCH 233 Renovation/Detailing	4
		ARCH 241 Architectural Sketching	3
		ARCH 251 Environmental Control Systems for Bldgs.	3
		ARCH 253 Sustainable Architecture	3
		BCT 211 Construction Design Methods	3
		GTEC 110 Construction Print Reading	3
			44

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

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

<b>Semester I</b>		<b>Semester II</b>		<b>Summer I</b>		<b>Semester III</b>		<b>Semester IV</b>	
ARCH 101	3	ARCH 112	3	Core B Elective	3	ARCH 212	4	ARCH 214	3
ARCH 111	3	ARCH 130	3	PE & Wellness	1	ARCH 241	3	ARCH 233	4
Core A Elective	3	ARCH 135	3			BCT 211	3	ARCH 251	3
GTEC 110	3	ARCH 211	3			COMM 203	3	ARCH 253	3
ENGL 101	3	ENGL 104	3			Core C Elective	3	Free Elective	3

*Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.*

# Academic Programs

## ARCHITECTURAL TECHNOLOGY, Certificate Program - 4170

Engineering & Technology Department

CIP Code: 15.0101

The Architectural Technology certificate prepares students for employment in architectural firms and related settings. The certificate emphasizes Building Information Modeling and the application of codes in the preparation of architectural construction documents. In addition, this curriculum explores structural, mechanical, and electrical construction documents, as well as architectural presentation drawings. The complete program is only available at the Harrisburg Campus.

### Career Opportunities

Graduates may secure positions as CAD/BIM operators preparing 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:

- Conceptualize the technical requirements of an architectural project and prepare preliminary, design development, and working drawings using CAD and BIM software
- Prepare all required general construction drawings
- Explain mechanical, electrical, and structural systems and their integration into the building process
- Explain construction materials, systems, and methods used in architectural construction
- Use a computer in an architectural office or related setting

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 32)

#### General Education

#### Major Requirements

ARCH 101 Architectural Design I	3
ARCH 111 Architectural Graphics I	3
ARCH 112 Architectural Working Drawings I	3
ARCH 130 Construction Materials & Methods	3
ARCH 212 Architectural Working Drawings II	4
ARCH 233 Renovations/Detailing	4
BCT 211 Construction Design Methods	3
GTEC 110 Construction Print Reading	3
*Program Specific Electives	6
	32

\*Select program specific electives from the following: ARCH 214, 251, 253, 291; GIS 141.

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

## ART, Associate in Arts Transfer 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 ceramic, 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 by 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. Some of the required courses are available at the Gettysburg, Lancaster, and Lebanon campuses.

### *Career or 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 = 65)**

<b>General Education</b>		<b>Major Requirements</b>		<b>Other Required Courses</b>	
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 176 Digital Photo Imaging (or)	3		
Core B Elective	3	ART 108 Fundamentals of Computer Art	(3)		
Core B Elective	3	ART 115 Beginning Digital Photography	3		
Core C Elective	3	ART 121 Drawing I	3		
Core C Elective (Math)	3	ART 122 Drawing II	3		
Core C Elective (Science)	3	ART 131 Painting I	3		
General Education Transfer Elective*	3	ART 133 Introduction to MAC	1		
Physical Education & Wellness	1	ART 151 Ceramics I (or)	3		
	28	ART 171 Jewelry and Metal Design	(3)		
		ART 181 Art Through the Ages I (Core A) (D)	3		
		ART 182 Art through the Ages II (D)	3		
			3		
			31		

\*Choose general education 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.

<b>Fall Semester</b>		<b>Spring Semester</b>		<b>Fall Semester</b>		<b>Spring Semester</b>	
ART 105	3	ART 107	3	ART 131	3	ART 115	3
ART 121	3	ART 122	3	ART 181 (Core A) (D)	3	ART 182 (D)	3
ART 133	1	ART 176 or 108	3	COMM 101	3	Core B Elective	3
ART 151 or 171	3	Core C Elective (MATH)	3	Core C Elective (Science)	3	Core C Elective	3
Core B Elective	3	ENGL 102	3	Transfer Elective	3	Transfer Elective	3
ENGL 101	3						
Gen. Ed. Transfer Elective	3						
PE & Wellness	1						

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

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

*Communication, Humanities and the Arts Department*

The Graphic and Interactive Design AAS program trains students to use industry-standard equipment and graphic/web software. Students assemble a print and web portfolio for job interviews that serve to demonstrate their skills in digital imaging, layout, design, web, and interactive media. 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. All Graphic and Interactive Design major courses are only available at the Harrisburg Campus. Some general education and foundation courses are available at the Gettysburg, Lancaster, Lebanon, and York campuses.

### **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 - 2841**

*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
- Appreciate accomplishments in the arts and sciences

# Academic Programs

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 67)

General Education		Major Requirements	
ENGL 101 English Composition I	3	*ART 105 Fundamentals of Two-Dimensional Design	3
ENGL 102 English Composition II (or)	3	*ART 109 Computer Graphics	3
ENGL 106 Business Writing	(3)	*ART 114 Interactive Media & Design	3
COMM 101 Effective Speaking	3	*ART 121 Drawing I	3
Core B Elective	3	*ART 125 Visual Thinking	3
Core C Elective	3	*ART 140 Web Design	3
Free Elective (Highly Recommend: ART 148)	3	*ART 143 Typography	3
Physical Education & Wellness	1	*ART 144 Graphic Design I	3
	19	*ART 145 Graphic Design II	3
		*ART 146 Graphic Design III	3
		*ART 147 Portfolio Development	3
		*ART 149 Design Practice	3
		*ART 176 Digital Photo Imaging	3
		**ART 182 Art Through the Ages II (Core A & D)	3
		ART 183 Twentieth-Century Art	3
		ART 190 History of Graphic Design	3
			48

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

\*\*ART 182 is recommended for the Diversity requirement.

## 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.*

Fall Semester (Graphic & Interactive Design Foundations #2831)	Spring Semester (Graphic & Interactive Design #2841)	Summer (Graphic & Interactive Design #2841)
ART 105	3 ART 109	3 COMM 101
ART 121	3 ART 143	3 Core B Elective
ART 176	3 ART 190	
ART 125	3 ART 144	
ENGL 101	3 ENGL 102 or 106	
Fall Semester (Graphic & Interactive Design #2841)	Spring Semester (Graphic & Interactive Design #2841)	Summer (Graphic & Interactive Design #2841)
ART 140	3 ART 114	3 ART 182 (Core A)
ART 145	3 ART 146	3 Core C Elective
ART 183	3 ART 147	
ART 149	3 ART 148 or Free Elective	
PE & Wellness	1	

*Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.*

## **GRAPHIC & INTERACTIVE DESIGN, Certificate Program – 2200**

*Communication, Humanities and the Arts Department*

CIP Code: 50.0409

The Graphic and Interactive Design certificate trains students to use industry-standard equipment and graphic/web software. Students assemble a print and web portfolio for job interviews that serve to demonstrate their skills in digital imaging, layout, design, web, and interactive media. Students have the opportunity to take an internship course designed to provide them with real-world experience. 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. All Graphic and Interactive Design major courses are only available at the Harrisburg Campus. Some general education and foundation courses are available at the York Campus.

### **GRAPHIC & INTERACTIVE DESIGN, Foundations Program - 2190**

Students interested in entering Graphic and Interactive Design Certificate #2200 must first enroll in Foundations Program #2190. While in #2190, students complete art foundation courses, specific math, writing, and reading requirements, and then submit a portfolio as entry requirements for the certificate. Students must meet with their Academic Advisor to ensure that they meet entrance requirements. Please go to <http://www.hacc.edu/ProgramsandCourses/Courses-and-Programs-Details.cfm?prn=2200> and select the link entitled "Portfolio Example Pieces" for more information on portfolio requirements.

### **GRAPHIC & INTERACTIVE DESIGN, Certificate Program - 2200**

*Selective Program:* Any student who has passed the portfolio review and meets entry criteria is eligible to enroll in program #2200. Entry into program #2200 is not guaranteed with admission to the College or with admission into Foundations program #2190. Students should meet with their Academic Advisor to ensure that they meet entrance requirements. Please go to <http://www.hacc.edu/ProgramsandCourses/Courses-and-Programs-Details.cfm?prn=2200> and select the link entitled "Portfolio Example Pieces" for more information on portfolio 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.

(SOC Code: 27-1024 Graphic Designers)

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 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

# Academic Programs

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 42)

General Education	Major Requirements	
	*ART 105 Fundamentals of Two-Dimensional Design	3
	*ART 109 Computer Graphics	3
	*ART 114 Interactive Media & Design	3
	*ART 121 Drawing I	3
	*ART 125 Visual Thinking	3
	*ART 140 Web Design	3
	*ART 143 Typography	3
	*ART 144 Graphic Design I	3
	*ART 145 Graphic Design II	3
	*ART 146 Graphic Design III	3
	*ART 147 Portfolio Development	3
	*ART 148 Graphic Design Internship (or)	3
	Any Elective	(3)
	*ART 149 Design Practice	3
	*ART 176 Digital Photo Imaging	3
		42

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

NOTE: It is highly recommended that students take the ART 148 Graphic Design Internship course.

## 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.

Fall Semester (Graphic & Interactive Design Foundations #2190)	Spring Semester (Graphic & Interactive Design #2200)	Fall Semester (Graphic & Interactive Design #2200)	Spring Semester (Graphic & Interactive Design #2200)
ART 105 3	ART 109 3	ART 140 3	ART 114 3
ART 121 3	ART 143 3	ART 145 3	ART 146 3
ART 176 3	ART 144 3	ART 149 3	ART 147 3
ART 125 3			ART 148 (or)
			Any Elective (3)

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

## 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. Some courses in the program may be available at the Gettysburg, Lancaster, Lebanon, and York campuses.

### *Career 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
- Write and speak effectively

### **PROGRAM REQUIREMENTS (TOTAL CREDITS = 61)**

<b>General Education</b>		<b>Major Requirements</b>	
ENGL 101 English Composition I	3	ART 105 Fundamentals of Two-Dimensional Design	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 121 Drawing I	3
COMM 101 Effective Speaking	3	ART 182 Art Through the Ages II (Core A, D)	3
Core B Elective	3	ART 183 Modern Art	3
Core C Elective	3	ART 186 History and Aesthetics of Photography	3
Free Elective	3	ART 201 Color Photography	3
Physical Education & Wellness	1	ART 205 Color Digital Photography	3
	19	ART 206 Studio Photography	3
		ART 208 Advanced Digital Photography	3
		ART 209 Photography Seminar	3
		*ART 100-299 Art Electives	6
			42

*\*Recommend: ART 116 and 202.*

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

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

<b>Fall Semester</b>	<b>Spring Semester</b>	<b>Fall Semester</b>	<b>Spring Semester</b>
ART 115	3 ART 105	3 ART 201	3 ART 205
ART 117	3 ART Elective (Rec: ART 116)	3 ART 209	3 ART 206
ART 121	3 ART 183	3 Art Elective (Rec: ART 202)	3 ART 208
ART 182 (Core A, D)	3 ART 186	3 Core C Elective	3 COMM 101
ENGL 101	3 ENGL 102 or 104 or 106	3 Free Elective	3 Core B Elective
	PE & Wellness	1	

*Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.*

## PHOTOGRAPHY, Certificate Program – 2400

*Communication, Humanities and the Arts Department*

CIP Code: 50.0605

Students are prepared for entry-level employment in photography as they learn 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**

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>

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

# Academic Programs

## AUCTIONEERING, Diploma Program - 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) only during the Fall semester on the Harrisburg Campus.

### *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)**

<b>General Education</b>	<b>Major Requirements</b>	
	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
		20

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

# Academic Programs

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

Engineering & Technology Department

General Motors' Automotive Service Educational Program (ASEP) prepares students as state-of-the-art technicians for GM dealerships. A new generation of "high tech" automotive technology demands a new generation of automotive service technicians. Students are trained on all current General Motors products and components. The latest diagnostic and servicing procedures and equipment are used. This program is certified in the eight categories of automotive repair by the Automotive Service Excellence/National Automotive Technicians Education Foundation (ASE/NATEF). 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. Contact the program coordinator for specific program entry requirements.

### Career Opportunities

GM-ASEP training, along with practical work experience and guidance, enables graduates to become quality 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 service technicians in General Motors dealerships
- Perform all services and repairs on General Motors vehicles
- Complete the eight ASE examinations (with ASEP experience of two years)
- Complete the Pennsylvania Safety Inspection License examination
- Write and speak effectively
- Appreciate accomplishments in the arts and sciences

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 68)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	AGM 101 Automotive Fundamentals	3	MATH 172 Applied Math	3
ENGL 104 Technical Writing	3	AGM 103 Automotive Powerplants	3		
COMM 101 Effective Speaking (or)	3	AGM 105 Automatic Electrical Fundamentals/Electronics I	3		
COMM 203 Interpersonal Communication	(3)	AGM 107 Automotive Fuel Systems	3		
Core A (Recommend: HUM 101)	3	**AGM 191 Cooperative Work Experience I	1		
Core B (Recommend: SOCI 201 (D))	3	AGM 151 Automotive Braking Systems	3		
Core C (Recommend: PHSC 113)	3	AGM 153 Automotive Steering and Suspension Systems	3		
Free Elective (Recommend: BUSI 200)	3	AGM 157 Automotive Fuel Systems/ Engine Performance Testing	3		
*Physical Education & Wellness	<u>1</u>	AGM 159 Automotive Heating/ Air Conditioning Systems	3		
	22	***AGM 192 Cooperative Work Experience II	1		
		AGM 203 Manual transmissions/ Transaxels and Differentials	2		
		AGM 205 Automotive Electrical Fundamentals /Electronics II	3		
		AGM 207 Automotive Fuel Injection Systems	2		
		AGM 251 Dealership Operations	2		
		AGM 253 Automatic Transmissions/ Transaxels	3		
		AGM 255 Advanced Automotive Electronics	2		
		AGM 291A Cooperative Work Experience III	1		
		AGM 292A Cooperative Work Experience IV	1		
		AGM 293A Cooperative Work Experience V	<u>1</u>		
			43		

\*PE 139 recommended. \*\*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		Spring Semester		Summer		Fall Semester		Spring Semester	
AGM 101	3	AGM 151	3	AGM 205	3	AGM 203	2	AGM 251	2
AGM 103	3	AGM 153	3	AGM 291A	1	AGM 207	2	AGM 253	3
AGM 105	3	AGM 157	3	BUSI 200	3	AGM 255	2	AGM 293A	1
AGM 107	3	AGM 159	3	Core B Elective	3	AGM 292A	1	Core A Elective	3
AGM 191	1	AGM 192	1	PE & Wellness	1	COMM 101 or 203	3	ENGL 104	3
Core C Elective	3	MATH 172	3			ENGL 101	3		

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## AUTOMOTIVE TECHNOLOGY, Associate in Applied Science Career Degree - 4480

Engineering & Technology Department

The program serves the needs of high school and vocational-technical graduates as well as persons already employed in the industry. The program is operated in cooperation with the National Automotive Dealers' Association, local vocational-technical schools, the U.S. Department of Labor, and local dealer associations. Graduates of vocational-technical school auto-mechanics programs or applicants with substantial work experience may receive up to nine credits after submitting appropriate documentation. This program is certified in the eight categories of automotive repair by the Automotive Service Excellence/National Automotive Technicians Education Foundation (ASE/NATEF). The program is available at the Harrisburg and York campuses.

*Selective Program:* Entry into this program is not guaranteed with admission to the College; specific admissions criteria must be met. Contact the program coordinator for specific program entry requirements.

### Career Opportunities

Graduates of the program are prepared for employment as service technicians and future management personnel in the automotive industry.

### Competency Profile

This curriculum is designed to prepare students to:

- Complete the Pennsylvania Safety Inspection License examination
- Complete the eight examinations developed by the National Institute for Automotive Service Excellence (NIASE), with the ability to earn certification as General Automotive Technicians
- Work as service technicians in automotive shops or dealerships
- Write and speak effectively
- Appreciate accomplishments in the arts and sciences

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 65)

General Education		Major Requirements	
ENGL 101 English Composition I	3	AUTO 101 Automotive Fundamentals	3
ENGL 104 Technical Writing	3	AUTO 103 Automotive Powerplants	3
COMM 101 Effective Speaking (or)	3	AUTO 105 Fundamental of Electrical Electronics I	3
COMM 203 Interpersonal Communication	(3)	AUTO 107 Fuel and Emission Systems	3
Core A Elective	3	AUTO 151 Braking Systems	3
Core B Elective	3	AUTO 153 Suspension Systems	3
Core C Elective	3	AUTO 157 Engine Performance Testing	3
Free Elective	3	AUTO 159 Heating and Air Conditioning Systems	3
Physical Education & Wellness	1	*AUTO 191 Cooperative Work Experience	2
	22	AUTO 203 Manual Transmissions/ Transaxels and Differentials	3
		AUTO 205 Intermediate Electrical/Electronics	3
		AUTO 207 Computerized Powertrain Controls	3
		AUTO 251 Service Department Management	2
		AUTO 253 Automatic Transmissions/Transaxels	3
		AUTO 255 Advanced Electrical/ Electronics	3
			<u>43</u>

\*After completion of AUTO 101, 103, 105, 151, and 153.

### RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

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

Year I	Year II
AUTO 101	3 AUTO 107
AUTO 103	3 AUTO 157
AUTO 105	3 AUTO 191
AUTO 151	3 AUTO 203
AUTO 153	3 AUTO 205
AUTO 159	3 AUTO 207
COMM 101 or 203	3 AUTO 251
ENGL 101	3 AUTO 253
ENGL 104	3 AUTO 255
PE & Wellness	1 Core A Elective
	Core B Elective
	Core C Elective
	Free Elective

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## AUTOMOTIVE TECHNOLOGY, Certificate Program - 4200

Engineering & Technology Department

CIP Code: 47.0604

The program serves the needs of high school and vocational-technical graduates as well as persons already employed in the industry. The program is operated in cooperation with the National Automotive Dealers' Association, local vocational-technical schools, the U.S. Department of Labor, and local dealer associations. Graduates of vocational-technical school auto-mechanics programs or applicants with substantial work experience may receive up to nine credits after submitting appropriate documentation. This program is certified in the eight categories of automotive repair by the Automotive Service Excellence/National Automotive Technicians Education Foundation (ASE/NATEF). The program is available at the Harrisburg and York campuses.

*Selective Program:* Entry into this program is not guaranteed with admission to the College; specific admissions criteria must be met. Contact the program coordinator for specific program entry requirements.

### *Career Opportunities*

Graduates of the program are prepared for employment as service technicians and future management personnel in the automotive industry. (SOC Code: 49.3023 Automotive Service Technicians and 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:

- Complete the Pennsylvania Safety Inspection License examination
- Complete the eight examinations developed by the National Institute for Automotive Service Excellence (NIASE), with the ability to earn certification as General Automotive Technician
- Work as service technicians in automotive shops or dealerships

### **PROGRAM REQUIREMENTS (TOTAL CREDITS = 41)**

<b>General Education</b>	<b>Major Requirements</b>	
	AUTO 101 Automotive Fundamentals	3
	AUTO 103 Automotive Power plants	3
	AUTO 105 Fundamentals of Electrical/Electronics	3
	AUTO 107 Fuel & Emission Systems	3
	AUTO 151 Braking Systems	3
	AUTO 153 Suspension Systems	3
	AUTO 157 Engine Performance Testing	3
	AUTO 159 Heating & Air Conditioning Systems	3
	AUTO 191 Cooperative Work Experience*	2
	AUTO 203 Manual Transmissions/Transaxels & Differentials	3
	AUTO 205 Intermediate Electrical/Electronics	3
	AUTO 207 Computerized Powertrain Controls	3
	AUTO 253 Automatic Transmissions/Transaxels	3
	AUTO 255 Advanced Electrical/Electronics	3
		41

\*Enrollment after completion of AUTO 101, 103, 105, 151, and 153.

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

# Academic Programs

## BAKING AND PASTRY ARTS, Certificate Program - 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 pastry making, students study fundamentals of baking principles, sanitation, small business management, and visual merchandising. 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
- Follow the correct procedures and correctly prepare quickbreads, cookies, brownies, basic pies and tarts, and yeast enriched, and laminated doughs
- Follow the correct procedures and correctly prepare custards and curds, doughs, tarts and pies, meringues and frostings, mousses and bavarians, ice cream, cake baking, and decorating procedures
- Determine and apply the characteristics, properties and functions of the major baking and pastry ingredients
- Exhibit correct baking procedures for successful finished product
- Demonstrate multi-tasking skills for quantity production
- Apply industry sanitation and safety procedures

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 31)

#### General Education

#### Major Requirements

#### Other Required Courses

*BAKE 101 Baking I	4	CIS 105 Intro to Software for Business	3
*BAKE 103 Baking II	2	CULI 102 Applied Hospitality Math	2
*BAKE 111 Pastry Arts I	4	CULI 113 Sanitation & Safety	2
*BAKE 113 Pastry Arts II	2	HTMT 213 Marketing: Hospitality & Tourism	3
BAKE 291 Baking/Pastry Arts Internship	3	MGMT 221 Small Business Development & Management	3
	15	MKTG 205 Visual Merchandising	3
			16

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

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



# Academic Programs

## BANKING AND FINANCIAL SERVICES, Certificate Program - 1251

*Business Studies Department*

CIP Code: 52.0803

Graduates of the Professional Banking and Financial Services program will possess the required knowledge and skills to pursue opportunities in the financial services industry. This program works cooperatively with the Pennsylvania Bankers Association's Professional Development Network (PBA-PDN). The program is available at all of HACC's campus locations. All BANK courses are offered on-line through our affiliation with the PBA-PDN.

### *Career Opportunities*

Graduates of this program find employment at an entry level as tellers, clerks and trainees in specialty areas of banking. The program also prepares currently employed bank employees for upward mobility into supervisory and management positions. (SOC Code 43-3071 Tellers)

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:

- Understand basic financial accounting practices and statements
- Use financial data in making decisions
- Demonstrate a clear understanding of banking principles and related procedures
- Understand how specialized training fits into a larger context

### **PROGRAM REQUIREMENTS (TOTAL CREDITS = 32)**

<b>General Education</b>		<b>Major Requirements</b>		<b>Other Required Courses</b>	
ENGL 106 Business Writing	3	ACCT 101 Principles of Accounting	4	CIS 105 Introduction to Software for Business	3
		BANK 101 AIB Principles of Banking	3	CIS 108 Introduction to Power Point	1
		BANK 103 AIB Law & Banking Applications (or)	3	FIN 201 Principles of Finance	3
		BANK 105 AIB Law & Banking Principles	(3)	MGMT 201 Principles of Management	3
		BANK 107 AIB Marketing Financial Services	3	MKTG 212 Professional Selling	3
		BANK 133 AIB Consumer Lending	3		13
			16		

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

# Academic Programs

## BIOLOGY, Associate in Arts Transfer Degree – 3091

Science Department

The Biology AA degree prepares students who wish to transfer to a four-year institution that offers a bachelor's degree program in biology, pre-medicine, pre-veterinary, ecology, marine biology, physical therapy, or teaching. 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. Some of the required courses are available at the Gettysburg and Lebanon campuses, as well as through Virtual Learning.

### Career or Transfer Opportunities

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

### Competency Profile

- 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 = 64)

General Education		Major Requirements	
ENGL 101 English Composition I	3	BIOL 102 General Biology II	4
ENGL 102 English Composition II	3	CHEM 102 General Inorganic Chemistry & Qualitative Analysis	4
COMM 101 Effective Speaking	3	CHEM 203 Organic Chemistry I	4
Core A Elective	3	CHEM 204 Organic Chemistry II	4
Core B Elective	3	Biology Electives:	8-12
Core B Elective	3	Select two but not more than three from the following courses:	
Core C (BIOL 101 General Biology I)	4	BIOL 206 or 250, 212, 215, 221	
Core C (CHEM 101 Organic Inorganic I)	4	**Transfer Elective	<u>3</u>
*Core C MATH 104 Trigonometry	3		27
*Core C MATH 119 Pre-Calculus	4		
General Education Transfer Elective	3		
Physical Education & Wellness	<u>1</u>		
	37		

\*May be replaced by a higher level MATH

\*\*Select from the following: BTC 101; CHEM 221; ENVS 201; GEOL 101, 102, 201; MATH 121, 122, 202; 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		Spring Semester		Fall Semester		Spring Semester	
BIOL 101 (Core C)	4	BIOL 102	4	Biology Elective	4	Biology Elective	4
CHEM 101 (Core C)	4	CHEM 102	4	CHEM 203	4	CHEM 204	4
Core B Elective	3	ENGL 102	3	COMM 101	3	Core B Elective	3
ENGL 101	3	Gen. Ed. Transfer Elective	3	Core A Elective	3	Transfer Elective	3
MATH 104 (or higher)	3	MATH 119 (or higher)	4	PE & Wellness	1		

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## BUILDING CONSTRUCTION TECHNOLOGY, Associate in Applied Science Career Degree - 4510

Engineering & Technology Department

The Building Construction Technology AAS program prepares students for positions in the construction/contracting field as quantity take-off technicians and estimators, detailers, and construction inspectors. All graduates acquire general knowledge of the overall construction process. The Building Construction and General Technology courses are offered only in the evening. The complete program is only available at the Harrisburg. Some of the required courses are available at the York Campus.

### Career Opportunities

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

### Competency Profile

This curriculum is designed to prepare students to:

- Read and interpret general construction drawings and contract specifications
- Explain construction material, systems, and methods used in architectural construction
- Show a working knowledge of construction law
- Estimate material and labor requirements
- Lay out construction schedules
- Write and speak effectively
- Appreciate accomplishments in the arts and sciences

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 65)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	ARCH 111 Architectural Graphics I	3	CIS 105 Intro to Software for Business	3
ENGL 104 Technical Writing	3	ARCH 130 Construction Materials & Methods	3	*MATH 161 Technical Math for General Technology	<u>3</u>
COMM 203 Interpersonal Communication	3	ARCH 214 Site Planning	3		6
Core A Elective	3	ARCH 251 Environmental Control Systems for Bldgs.	3		
Core B Elective	3	BCT 211 Construction Design Methods	3		
Core C Elective	3	BCT 212 Construction Contracts & Related Law	3	*May be replaced with a higher level Math.	
Free Elective	3	BCT 213 Construction Supervision & Leadership	3		
Physical Education & Wellness	<u>1</u>	BCT 214 Project Management	3		
	22	BCT 215 Construction Estimating	3		
		BCT 216 Construction Planning & Scheduling	3		
		BCT 217 Construction Project Administration	3		
		BCT 218 Construction Documents for Technicians	1		
		GTEC 110 Construction Print Reading	<u>3</u>		
			37		

### 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	Summer	Fall Semester	Spring Semester	Summer
Core A Elective 3	ARCH 111 3	ARCH 214 3	ARCH 251 3	BCT 212 3	COMM 203 3
Core B Elective 3	ARCH 130 3	CIS 105 3	BCT 211 3	BCT 214 3	Free Elective 3
MATH 161 3	Core C Elective 3		BCT 213 3	BCT 216 3	PE & Wellness 1
ENGL 101 3	ENGL 104 3		BCT 215 3	BCT 217 3	
GTEC 110 3				BCT 218 1	

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## BUILDING CONSTRUCTION TECHNOLOGY, Certificate Program - 4250

Engineering & Technology Department

CIP Code: 15.1001

The Building Construction Technology certificate program prepares students for positions in the construction/contracting field as quantity take-off technicians and estimators, detailers, and construction inspectors. All graduates acquire a general knowledge of the overall construction process. The Building Construction and General Technology courses are offered only in the evening. The complete program is only available at the Harrisburg Campus.

### Career Opportunities

Graduates of the certificate are prepared for positions in the construction/contracting field as project managers, construction schedulers, construction inspectors, or construction estimators, detailers, 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:

- Read and interpret general construction drawings and contract specifications
- Explain construction materials, systems, and methods used in architectural construction
- Show a working knowledge of construction law
- Estimate material and labor requirements
- Lay out construction schedules

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 34)

General Education	Major Requirements	Other Required Courses
	ARCH 111 Architectural Graphics I	**MATH 161 Technical Math for Gen Tech 3
	ARCH 130 Construction Materials and Methods	
	BCT 212 Construction Contracts and Related Laws	
	BCT 213 Construction Supervision and Leadership	
	BCT 214 Project Management	
	BCT 215 Construction Estimating	
	BCT 216 Construction Planning and Scheduling	
	BCT 217 Construction Project Administration	
	BCT 218 Review/Construction Documents Technology	
	GTEC 110 Construction Print Reading	
	*Program Specific Elective	
		31

\*Select one of the following: ARCH 214, 251; CVTE 103.

\*\* May be replaced by a higher level Math.

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

# Academic Programs

## BUSINESS ADMINISTRATION, Associate in Arts Transfer Degree - 1020

*Business Studies Department*

The Business Administration AA degree is a general transfer program for the student who plans to pursue a bachelor's degree in accounting, finance, information systems, management, marketing, economics, business administration, or a related field. The Business Administration AA degree program is accredited by the Accreditation Council of 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. 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 Business Administration AA degree will be admitted at the Junior-level to any institution participating in Pennsylvania's statewide college credit transfer system. The complete program is available at all of HACC's campus locations, as well as through Virtual Learning.

### *Career or 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)**

<b>General Education</b>		<b>Major Requirements</b>	
ENGL 101 English Composition I	3	ACCT 101 Principles of Accounting I	4
ENGL 102 English Composition II (or)	3	ACCT 200 Principles of Accounting II	4
ENGL 106 Business Writing	(3)	BUSI 209 Legal Environment of Business	3
COMM 101 Effective Speaking	3	CIS 105 Introduction to Software for Business	3
Core A Elective	3	MGMT 201 Principles of Management	3
Core B ECON 201 Principles I: Macro	3	MKTG 201 Principles of Marketing	3
Core B ECON 202 Principles II: Micro	3	Transfer Electives	9
Core C MATH 110 & 202	8		29
Core C (Science)	3		
General Education Transfer Elective	3		
Physical Education & Wellness	$\frac{1}{33}$		

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

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

<b>Fall Semester</b>		<b>Spring Semester</b>		<b>Fall Semester</b>		<b>Spring Semester</b>	
ACCT 101	4	ACCT 200	4	BUSI 209	3	ECON 202 (Core B)	3
CIS 105	3	COMM 101	3	Core C Elective	3	General Education Transfer Elective	3
Core A Elective	3	ENGL 102 or 106	3	ECON 201 (Core B)	3	MKTG 201	3
ENGL 101	3	MATH 202	4	MGMT 201	3	Transfer Elective	3
MATH 110 (Core C)	4	Transfer Elective	3	Transfer Elective	3		
PE & Wellness	1						

*Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.*

# Academic Programs

## BUSINESS MANAGEMENT - Associate in Arts Career Degree - 1510

*Business Studies Department*

These programs incorporate specialty courses in accounting, management, marketing, finance, international business, and computer information systems. The courses provide students with the knowledge of management concepts, procedures, operations, and problem-solving techniques needed for employment or advancement. The Business Management AA degree 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 program is available at all of HACC's campus locations, as well as through Virtual Learning.

### *Career Opportunities*

Graduates prepare for entry-level positions in organizations with career paths that eventually lead to a position as an advertising coordinator, assistant manager, buyer coordinator, communications director, distribution manager, distribution supervisor, general manager, operations manager, office manager, public relations manager, purchasing agent, sales manager, sales assistant manager, service manager, and shipping manager. The programs also prepare currently employed individuals for upward mobility within their organizations.

### *Competency Profile*

This curriculum is designed to prepare students to:

- Communicate effectively and professionally in business management situations through physical or virtual presence, writing, speaking, listening, and electronic media
- Use quantitative and qualitative tools and methodologies to support business management and organizational decision making
- Describe economic, environmental, political, ethical, legal, and regulatory contexts of global organizational management policies
- Evaluate potential for business success and consider implementation issues including financial, legal, operational, and administrative procedures
- Identify business management problems and opportunities and formulate an action plan
- Manage by using team building skills and facilitate collaborative behaviors in the accomplishment of group goals and objectives
- Work effectively, respectfully, ethically, and professionally with people of diverse ethnic, cultural, gender, and other backgrounds, as well as with people with different organizational roles, social affiliations, and personalities
- Analyze the information content of organizational processes and use information technology
- Utilize research methods to collect and analyze information regarding management concepts

### **PROGRAM REQUIREMENTS (TOTAL CREDITS = 66)**

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	ACCT 200 Principles of Accounting II	4		
ENGL 106 Business Writing	(3)	BUSI 101 Introduction to Business	3		
COMM 101 Effective Speaking	3	BUSI 201 Business Law I	3		
Core A Elective	3	BUSI 230 Intro to International Business	3		
Core B Elective (Recommend: ECON 202)	3	CIS 105 Intro to Software for Business	3		
Core C Elective	3	ECON 201 Principles of Economics: Macro	3		
*Free Elective	3	MGMT 201 Principles of Management	3		
Physical Education & Wellness	1	MGMT 203 Human Resources Management	3		
	22	MGMT 226 Principles of Leadership	3		
		MKTG 201 Principles of Marketing	3		
		**Program Electives	6		
			<u>41</u>		

\*Recommend BUSI 291 for students without significant work experience.

\*\*Select two courses from the following courses: BUSI 245, 291; MGMT 204, 206, 221, and 227.

\*\*\*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		Spring Semester		Fall Semester		Spring Semester	
BUSI 101	3	ACCT 101	4	ACCT 200	4	BUSI 230	3
Core A Elective	3	BUSI 201	3	ECON 201	3	CIS 105	3
Core B Elective	3	COMM 101	3	MGMT 203	3	Free Elective	3
ENGL 101	3	Core C Elective	3	MGMT 226	3	PE & Wellness	1
MATH 100 or higher	3	ENGL 102 or 106	3	MKTG 201	3	Program Electives	6
		MGMT 201	3				

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## BUSINESS STUDIES, Associate in Arts Career Degree - 1500

*Business Studies Department*

The Business Studies AA degree offers business students an opportunity to pursue specifically-designed curricula that meets their specific career goals. This program offers three options of specialized study: General Business, Entrepreneurship, and Agribusiness. In addition, this program is accredited by the Association of Collegiate 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 program is available at the Gettysburg, Harrisburg, Lancaster (General Business Option only), Lebanon, and York campuses, as well as through Virtual Learning.

### *Career Opportunities*

Graduates prepare for entry-level positions in organizations with career paths in the graduate's area of study.

### *Competency Profile*

This curriculum is designed to prepare students to:

- Apply business skills including accounting, marketing, management, and business law
- Employ basic business theories and practices
- Apply a basic knowledge of computer applications in business
- Discuss fundamental concepts of business decision-making
- Deliver oral and written presentations on basic business concepts
- Find, evaluate, and use information from online and print sources

### **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	**MATH 100 College Math for Business or higher	3
ENGL 102 English Composition II (or)	3	BUSI 101 Introduction to Business	3		
ENGL 106 Business Writing	(3)	BUSI 201 Business Law I (or)	3		
COMM 101 Effective Speaking	3	BUSI 209 Legal Environment of Business	(3)		
Core A Elective	3	CIS 105 Intro to Software for Business	3		
Core B Elective	3	MGMT 201 Principles of Management	3		
Core C Elective	3	MKTG 201 Principles of Marketing	3		
Free Electives	12	Program Specific Electives*	9		
Physical Education & Wellness	1		28		
	31				

\*Select from the following: ACCT, BUSI, CULI, CIS, ENTR, ENVI, FIN, HORT, HTMT, MGMT, MKTG, MUSB, RE, or WEB.

\*\*May be replaced with 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.

#### **General Business Option**

Fall Semester	Spring Semester	Fall Semester	Spring Semester
BUSI 101 3	ACCT 101 4	BUSI 201 or 209 3	Free Electives 6
CIS 105 3	COMM 101 3	Free Electives 6	Program Spec Electives 9
Core A Elective 3	Core C Elective 3	MATH 100 or higher 3	
Core B Elective 3	ENGL 102 or 106 3	MKTG 201 3	
ENGL 101 3	MGMT 201 3	PE & W 1	

#### **Entrepreneurship Option**

Fall Semester	Spring Semester	Fall Semester	Spring Semester
BUSI 101 3	ACCT 101 4	BUSI 201 or 209 3	Core C Elective 3
CIS 105 3	COMM 101 3	ENTR 103 3	Free Electives 9
Core A Elective 3	ENGL 102 or 106 3	ENTR 203 3	MKTG 201 3
Core B Elective 3	ENTR 101 3	Free Elective 3	
ENGL 101 3	MGMT 201 3	MATH 100 or higher 3	
		PE & W 1	

#### **Agribusiness Option**

Fall Semester	Spring Semester	Fall Semester	Spring Semester
BUSI 101 3	ACCT 101 4	BUSI 201 or 209 3	Core C Elective 3
CIS 105 3	BUSI 150 3	BUSI 227 3	Free Electives 12
Core A Elective 3	COMM 101 3	BUSI 250 3	
Core B Elective 3	ENGL 102 or 106 3	MATH 100 or higher 3	
ENGL 101 3	MGMT 201 3	MKTG 201 3	
		PE & W 1	

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

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

Health & Public Service Department

The Diagnostic Cardiac Sonographer (also called Echo cardiographer) 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 different ultrasound modalities including M-mode, 2 Dimensional, Doppler and Color Doppler imaging. The program is accredited by the Commission on Accreditation of Allied Health Education Programs. The complete program is available at the Lancaster Campus. Some of the required courses are available at the Gettysburg, Harrisburg, Lebanon, and York campuses, as well as through Virtual Learning.

*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)), email [healthcareers@hacc.edu](mailto:healthcareers@hacc.edu) or call (717) 780-1988 or (800) 222-4222 extension 1988 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 are employed as cardiology technologists and 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
- Appreciate accomplishments in the arts and sciences
- Function effectively as a member of the healthcare team
- Understand how specialized training fits into the healthcare delivery system
- Demonstrate the entry-level competencies prescribed by the American Registry of Diagnostic Medical Sonographers (ARDMS)
- Take national entry-level credentialing examinations for cardiovascular principles and instrumentation, physics, and adult cardiography administered by the ARDMS

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 70)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	CVT 100 Foundations of Cardiovascular Medicine	3	BIOL 121 Anatomy & Physiology I	4
ENGL 102 English Composition II	3	CVT 101 Introduction to Cardiovascular Tech	3	BIOL 122 Anatomy & Physiology II	4
COMM 101 Effective Speaking (or)	3	CVT 102 Cardiovascular Tech. Lab	1	MATH 103 College Algebra (Core C)	3
COMM 203 Interpersonal Communication	(3)	CVT 103 Cardiovascular Clinical Experience	2		11
Core A Elective	3	CVT 200 Cardiac Pathophysiology	6		
Core B Elective	3	CVT 219 Intro to Ultrasound Imaging Systems	1		
Free Elective	3	CVT 220 Intro to Cardiac Sonography	4		
Physical Education & Wellness	1	CVT 222 Cardiac Sonography Phys & Instrumentation	3		
	19	CVT 223 Concepts in Cardiac Physiological Assessment	3		
		CVT 224 Cardiac Sonography Clinical I	4		
		CVT 226 Doppler Physics & Cardiac Hemodynamics	3		
		CVT 228 Cardiac Sonography Clinical II	5		
		CVT 230 Introduction to Pediatric Echocardiography	2		
			40		

Note: A grade of C or higher is required for BIOL 121 and 122; ENGL 101 and 102; COMM 101 or 203; MATH 103; 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.

Fall Semester	Spring Semester	Summer	Fall Semester	Spring Semester	Summer
BIOL 121 4	BIOL 122 4	CVT 200 6	CVT 220 4	COMM 101 or 203 3	Core A Elective 3
CVT 101 3	Core B Elective 3	CVT 222 3	CVT 219 1	CVT 224 4	CVT 228 5
CVT 102 1	CVT 103 2		CVT 223 3	CVT 226 3	CVT 230 2
CVT 100 3	ENGL 101 3		ENGL 102 3		Free Elective 3
PE & Wellness 1	MATH 103 3				

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

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

Health & Public Service Department

An Invasive Cardiovascular Technologist is a healthcare professional who, through the utilization of specialized equipment and under the direction of the physician, performs procedures on patients resulting in accurate diagnosis and/or optimal treatment of congenital and acquired heart disease. 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. Some of the required courses are available at the Gettysburg, Harrisburg, Lebanon, and York campuses, as well as through Virtual Learning.

*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)), email [healthcareers@hacc.edu](mailto:healthcareers@hacc.edu) or call (717) 780-1988 or (800) 222-4222 extension 1988 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 will be qualified to seek employment as cardiovascular technologists in both diagnostic and interventional facilities, specifically in a Cardiac Catheterization laboratory.

### 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
- Demonstrate the ability to 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
- Appreciate accomplishments in the arts and sciences

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 71)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	CVT 100 Foundations of Cardiovascular Med	3	BIOL 121 Anatomy and Physiology I	4
ENGL 102 English Composition II	3	CVT 101 Intro to Cardiovascular Tech	3	BIOL 122 Anatomy and Physiology I	4
COMM 101 Effective Speaking (or)	3	CVT 102 Cardiovascular Tech Lab	1	MATH 103 College Algebra	3
COMM 203 Interpersonal Communication	(3)	CVT 103 Cardiovascular Tech Clinical	2		11
Core A Elective	3	CVT 200 Cardiac Pathophysiology	6		
Core B Elective	3	CVT 210 Intro to Invasive Cardiovascular	3		
Free Elective	3	CVT 211 Radiation/Safety Invasive Instrumentation	2		
Physical Education & Wellness	1	CVT 212 Invasive Hemodynamic Assess.	3		
	19	CVT 213 Invasive Instrumentation Lab	2		
		CVT 214 Interventional Cardiac Practices	4		
		CVT 215 Invasive Cardiovascular Clinical. I	4		
		CVT 216 Congenital Heart Disease	1		
		CVT 217 Invasive Cardiovascular Clinical. II	5		
		CVT 218 Cardiovascular Pharmacology	2		
			41		

### 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	Summer	Fall Semester	Spring Semester	Summer
BIOL 121	4	BIOL 122	4	CVT 103	2
CVT 100	3	Core A Elective	3	CVT 200	6
ENGL 101	3	CVT 101	3	CVT 210	3
MATH 103	3	CVT 102	1	CVT 211	2
PE & Wellness	1	ENGL 102	3	CVT 212	3
				CVT 213	2
				Core B Elective	3
				CVT 214	4
				CVT 215	4
				CVT 216	1
				CVT 218	2
				Free Elective	3
				CVT 217	5

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## CARPENTRY, Diploma Program - 0590

Engineering & Technology Department

CIP Code: 46.0201

The Carpentry Diploma program provides comprehensive training in construction carpentry. Students, who aspire to become construction carpenters, are introduced to a wide variety of techniques and concepts to ensure their safety and success in the workplace. Areas of study include safety, hand power tools, blueprint reading, and a wide range of building materials in which emphasis is placed on their application. Interior and exterior construction, and finishes, including roofs, windows, doors, floors, and walls, are also covered. The complete program is only available at the Harrisburg Campus.

### Career Opportunities

Graduates are employed as Construction Carpenters, Form Carpenters, Millwrights, or an entry-level Foreman.

### Competency Profile

This curriculum is designed to prepare students to:

- Describe the construction trade and its diversity of disciplines, technologies, and employment opportunities
- Demonstrate a variety of technical skills in the carpentry field
- Apply safety standards and practices on-the-job
- Use trade-specific hand and power tools and equipment
- Read and interpret blueprints and construction specifications
- Perform basic cost estimating
- Utilize building materials appropriately
- Demonstrate techniques in building construction to include concrete, interior, and exterior applications

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 18)

General Education	Major		Other Required Courses	
	CARP 110 Carpentry Fundamentals	3	*Program Electives	3
	CARP 130 Floor, Wall, & Roof Framing	3		
	CARP 150 Interior Finishing I	3		
	GTEC 101 OSHA-30 & NFPA-70E	3		
	WOOD 102 Woodworking II	3		
		<hr/>		
		15		

\*Select from the following: ELOC 153; HBR 130; WELD 111.

Note: All courses require a grade of C or higher.

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

# Academic Programs

## CHEMISTRY, Associate in Arts Transfer Degree - 3020

Science Department

The Chemistry AA 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 pharmacy, medicine, dentistry, teaching, veterinary medicine, or other science curricula. 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 AA 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. Some of the required courses are available at the Gettysburg, Lebanon and York campuses, as well as through Virtual Learning.

### Career or 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, medicine, dentistry, pharmacy, teaching, veterinary science, or other science curricula.

### 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
- Appreciate accomplishments in the arts and sciences

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 61)

General Education		Major Requirements	
ENGL 101 English Composition I	3	CHEM 102 General Inorganic/Qual. Analysis	4
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
Core A Elective	3	PHYS 212 Physics for Engineers & Scientists II	4
Core B Elective	3	*Transfer Electives	7
Core B Elective	3		27
Core C (CHEM 101 General Inorganic I)	4		
Core C (MATH 121 Calculus I)	4		
Core C (MATH 122 Calculus II)	4		
General Education Transfer Elective	3		
Physical Education & Wellness	1		
	34		

\*Recommended Elective: BIOL 101, 102, 111, CPS 113 or higher, MATH 221, 222

### 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	
CHEM 101 (Core C)	4	CHEM 102	4	CHEM 203	4	CHEM 204	4
COMM 101	3	Core A Elective	3	Gen. Ed. Transfer Elective	3	Core B Elective	3
ENGL 101	3	Core B Elective	3	PHYS 211	4	PHYS 212	4
MATH 121 (Core C)	4	ENGL 102 or 104	3	Transfer Elective	3	Transfer Elective	3
PE & Wellness	1	MATH 122 (Core C)	4				

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## CIVIL TECHNOLOGY, Associate in Applied Science Career Degree - 4720

Engineering & Technology Department

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, 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 and CVTE courses are taught in 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 (or)	3	CVTE 105 Numerical Methods Civil Eng.	3	CAD 130 Civil Engineering Drawing	1
COMM 101 Effective Speaking	(3)	CVTE 110 Civil Engineering Graphics	2	*MATH 161 Technical Math for Gen Tech	<u>3</u>
Core A Elective	3	CVTE 111 Topographic Site Mapping	2		6
Core B Elective	3	CVTE 112 Topographic Highway Mapping	2		
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	<u>1</u>	CVTE 203 Surveying II	3		
	<u>22</u>	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	<u>3</u>		
			37		

\*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	Spring Semester	Summer	Fall Semester	Spring Semester	Summer						
CAD 130	1	Core A Elective	3	CVTE 103	3	Core B Elective	3	CAD 115	1	Free Elective	3
CVTE 105	3	CVTE 102	3	PE & Wellness	1	Core C Elective	3	CAD 125	1		
CVTE 110	2	CVTE 111	2			CVTE 203	3	COMM 203/101	3		
CVTE 120	1	CVTE 112	2			CVTE 205	3	CVTE 211	3		
ENGL 101	3	CVTE 132	1			CVTE 207	3	CVTE 209	3		
MATH 161	3	ENGL 104	3					CVTE 213	3		

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## CIVIL TECHNOLOGY, Certificate Program - 4220

Engineering & Technology Department

CIP Code: 15.0201

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 they 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 and CVTE courses are taught in 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.

# Academic Programs

## COMMUNICATIONS, Associate in Arts Transfer Degree – 2030

*Communication, Humanities and the Arts Department*

The Communications AA degree is designed to prepare students for transfer into a bachelor’s degree program in one of three focus areas: Human Communication, Public Relations, or Journalism. Students learn to think, act, and communicate effectively, ethically, critically, and creatively thereby, enriching their personal and professional lives within a diverse environment. Students select a specific area of concentration upon admission and then work closely with their transfer institution in coordinating their course selections. Those students who choose to complete the associate’s degree program have the basic skills necessary to enter the workforce in a variety of fields related to communication. The complete program is available at the Harrisburg Campus and through Virtual Learning. Some of the required courses are available at Lancaster, Lebanon, and York campuses.

### *Career or Transfer Opportunities*

Upon completion of a baccalaureate degree, students completing the Human Communication concentration may obtain entry-level positions in customer service, advertising sales, audience and market research, government, industry, and business. The Public Relations concentration prepares graduates for work in organizations, institutions, and companies where they are able to contribute to the planning, development, and execution of an array of communication venues (pamphlets, press releases, newsletters) for an organization. Graduates of the Journalism concentration may find opportunities as Writers, Reporters, Editors, Videographers and Photographers at newspapers, magazines, television, radio, and on-line publications.

### Competency Profile

This curriculum is designed to prepare students to:

- Transfer into four-year colleges and/or universities to earn a baccalaureate degree in one of three concentrated areas: Human Communication, Public Relations, and Journalism
- Employ the communication skills necessary to engage in diverse personal, professional, civic, and social relationships
- Express their ideas in oral and written messages that are coherent, persuasive, and ethical
- Analyze significant issues in the history, theory, and criticism of human and mass communication
- Apply appropriate technology to the creation and dissemination of messages
- Work with constituencies in ways that reflect an understanding of communication theory
- Employ professional behaviors within their respective fields of study
- Write and speak effectively
- Appreciate accomplishments in the arts and sciences

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 62)

General Education		Major Requirements	
ENGL 101 English Composition I	3	COMM 110 Introduction to Communication	3
ENGL 102 English Composition II (or)	3	COMM 120 Mass Media and Society	3
ENGL 104 Technical Writing (or)	(3)	COMM 201 Theories of Communication	3
ENGL 106 Business Writing	(3)	COMM 290 Communication Capstone	<u>1</u>
COMM 101 Effective Speaking	3		10
ENGL 207 Intro to Literature (Core A)	3		
MATH 202 Intro to Statistics (Core C)	4		
Core A Elective	3		
*Core B Elective	3		
*Core B Elective	3		
**Core C Elective (Math)	3		
***Core C Elective (Science)	3		
****Science with a Lab	3		
Gen. Ed. Transfer Elective (WEB 130)	3		
Physical Education & Wellness	<u>1</u>		
	38		

*\*Recommend GP 201 or 202; SOCI 201 (D); PSYC 101 or ECON 201*

*\*\*Recommend MATH 103 or 111*

*\*\*\*Recommend BIOL 101, 103, 108, or 111*

*\*\*\*\*Students must select from the following: ASTR 103, 104; BIOL 101, 102, 108, 111, 121, 122, 130, 201, 202, 212, 215, 221, 245, 250; CHEM 101, 102, 113, 203, 204; ENVS 201; GEOL 101, 102, 201; METR 101; PHSC 113, 114; PHYS 105, 151, 152, 153, 201, 202, 211, 212*

Students select one of the following options to complete the Communication Transfer degree requirements.

Human Communication Option (HCOM)		Public Relations Option (PREL)		Journalism Option (JOUR)	
COMM 202 Organization Communication	3	COMM 211 Public Relations	3	COMM 221 Media Writing	3
COMM 203 Interpersonal Communication	3	COMM 221 Media Writing	3	COMM 222 News Writing and Reporting	3
COMM 251 Small Group Communication	3	COMM 261 Public Relations Writing	3	Program Specific Electives	<u>8</u>
COMM 253 Intercultural Communications	3	Program Specific Electives	<u>5</u>		14
Program Specific Electives	<u>2</u>		14		
	14				

# Academic Programs

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Fall Semester I		Spring Semester II		Fall Semester III		Spring Semester IV	
COMM 110	3	COMM 101	3	COMM 201	3	COMM 290	1
Core A Elective	3	COMM 120	3	ENGL 207 (Core A)	3	*Core B Elective	3
*Core B Elective	3	***Core C Elective	3	GE. Transfer Elective (WEB 130)	3	Program Specific Electives	8
**Core C Elective	3	ENGL 102 or 104, or 106	3	PE & Wellness	1	****Science with a Lab	3
ENGL 101	3	MATH 202 (Core C)	4	Program Specific Electives	6		

*Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.*

# Academic Programs

## COMPUTER INFORMATION SECURITY, Associate in Science Transfer Degree - 1030

*Engineering & Technology Department*

Students prepare to continue study toward the 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; only students of high academic potential who have demonstrated excellence in mathematics are admitted. 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. Some of the required courses are available at the Gettysburg, Lebanon and York campuses, as well as through Virtual Learning.

### *Career or 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
- Write and speak effectively
- Appreciate accomplishments in the arts and sciences

### **PROGRAM REQUIREMENTS (TOTAL CREDITS = 68)**

<b>General Education</b>		<b>Major Requirements</b>	
ENGL 101 English Composition I	3	CIS 222 Introduction to Windows Servers	3
ENGL 102 English Composition II (or) ENGL 104 Technical Writing	3 (3)	CIS 264 Fundamentals of Linux Administration	3
COMM 101 Effective Speaking (or) COMM 203 Interpersonal Communication	3 (3)	CISE 200 Information Security Fundamentals	3
Core A Elective	3	CNT 120 Network Communication Technology I	3
Core B Elective	3	CNT 125 Network Communication Technology II	4
Core C Elective	3	CNT 220 Internetworking	5
Core C (MATH 103 College Algebra)	3	CPS 121 Java Programming	3
Core C (MATH 104 Trigonometry)	3	CPS 161 Computer Science I	3
General Education Transfer Elective	3	CPS 162 Computer Science II (or) CPS 230 Object Oriented Programming	3 (3)
Physical Education & Wellness	1	MATH 119 Pre-Calculus	4
	31	MATH 121 Calculus I (or) MATH 125 Discrete Mathematics	4 (3)
			37

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

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

<b>Fall Semester</b>		<b>Spring Semester</b>		<b>Summer</b>		<b>Fall Semester</b>		<b>Spring Semester</b>	
CNT 120	3	CIS 222	3	Core B Elective	3	CIS 264	3	CISE 200	3
COMM 101 or 203	3	CNT 125	4	Free Elective	3	CNT 220	5	CPS 162 or 230	3
Core A Elective	3	CPS 121	3			CPS 161	3	Core B Elective	3
ENGL 101	3	ENGL 102 or 104	3			MATH 119	4	Core C Elective	3
MATH 103	3	MATH 104	3			PE & Wellness	1	MATH 121 or 125	4 or 3

*Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.*

# Academic Programs

## COMPUTER INFORMATION SYSTEMS, Associate in Arts Career Degree - 1792

*Engineering & Technology Department*

The Computer Information Systems 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 options: 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 and Lancaster campuses. Some of the required courses are available at the Gettysburg, Lebanon and York campuses, as well as 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 = 66)**

<b>General Education</b>		<b>Major Requirements</b>		<b>Other Required Courses</b>	
ENGL 101 English Composition I	3	BUSI 101 Introduction to Business	3	*Computer-Related Elective	3
ENGL 102 English Composition II (or)	3	CIS 110 Introduction to Computer Information Systems	3		
ENGL 106 Business Writing (or)	(3)	CNT 120 Network Communication Technology I	<u>3</u>		
ENGL 104 Technical Writing	(3)		9		
COMM 101 Effective Speaking (or)	3				
COMM 203 Interpersonal Communication	(3)				
Core A Elective	3				
Core B Elective	3				
Free Elective	3				
Physical Education & Wellness	<u>1</u>				
	19				

\* Select any 3-credit computer-related elective from the following subjects: CIS (except CIS 100 & 105); CISE; CNT; GIS; and WEB.

# Academic Programs

## Support Specialist Option

Core C Elective	
CIS 127 MS Operating Systems	3
CIS 135 Intermediate Spreadsheet Applic.	3
CIS 140 Intermediate Database Mgmt.	3
CIS 222 Intro to Windows Servers	3
CIS 227 Technical Support	3
CIS 266 Support Specialist Capstone	3
CISE 200 Information Security Fund.	3
ELEC 125 Intro to PC Technology	3
ELEC 126 Installing & Troubleshooting PCs	4
WEB 102 Web Exploration & Design	4
**Computer-Programming Elective	<u>3</u>
	37

## Database Analyst Option

CIS 135 Intermediate Spreadsheet Applic.	3
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
MATH 202 Intro to Statistics (Core C)	4
***Database-Related Elective	<u>3</u>
	35

## Business Intelligence Application Developer Option

CIS 135 Intermediate Spreadsheet Applications	3
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
MATH 202 Intro to Statistics (Core C)	4
WEB 125 HTML & CSS	3
WEB 143 Development Fundamentals	3
WEB 240 JavaScript Programming	3
WEB 245 Advanced Development	<u>3</u>
	35

\*\* 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 Option

Semester I	Semester II	Summer	Semester III	Semester IV
CIS 110 3	BUSI 101 3	CIS 222 3	CISE 200 3	CIS 227 3
CIS 135 3	CIS 127 3	ELEC 125 3	Core A Elective 3	CIS 266 3
COMM 101 or 203 3	CIS 140 3		Core B Elective 3	Core C Elective 3
ENGL 101 3	CNT 120 3		ELEC 126 4	Computer Elective 3
WEB 102 3	ENGL 102, 104 or 106 3		Programming Elective 3	Free Elective 3
	PE & Wellness 1			

### Database Analyst Option

Semester I	Semester II	Summer	Semester III	Semester IV
CIS 110 3	BUSI 101 3	CIS 241 3	CIS 243 3	CIS 224 4
COMM 101 or 203 3	CIS 135 3		CIS 245 3	CIS 247 3
Core A Elective 3	CIS 140 3		CIS 257 3	CIS 278 3
ENGL 101 3	CNT 120 3		Computer Elective 3	Core B Elective 3
MATH 202 (Core C) 4	ENGL 102, 104 or 106 3		Database Elective 3	Free Elective 3
	PE & Wellness 1			

### Business Intelligence Application Developer Option

Semester I	Semester II	Summer	Semester III	Semester IV
CIS 110 3	BUSI 101 3	CIS 241 3	CIS 257 3	CIS 224 4
CIS 135 3	CNT 120 3	PE & Wellness 1	Core B Elective 3	CIS 258 3
COMM 101 or 203 3	ENGL 102, 104 or 106 3		Computer Elective 3	CIS 278 3
ENGL 101 3	MATH 202 (Core C) 4		WEB 240 3	Core A Elective 3
WEB 125 3	WEB 143 3		WEB 245 3	Free Elective 3

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.



# Academic Programs

## COMPUTER INFORMATION SYSTEMS- Software Specialist Diploma Program - 0220

Engineering & Technology Department

CIP Code: 11.0601

This diploma program 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. This program can be completed in two semesters. The complete program is available at the Harrisburg, Lancaster, Gettysburg, and York campuses. Some of the required courses are available at the Lebanon Campus, as well as 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: 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:

- 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 = 19)**

<b>General Education</b>	<b>Major Requirements</b>	
	AOS 110 Microsoft Word	3
	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
		19

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

# Academic Programs

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

Engineering & Technology Department

The Computer Networking AAS program is designed to lead directly to employment in the field of information technology in roles such as network technician, network administrator, systems administrator and customer support. Students are trained to design, install, configure, troubleshoot, and maintain networks. The program's coursework 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, Network Interface Controllers (NIC's), hubs, bridges, switches, and routers. Elective courses allow 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 complete program is only available at the Harrisburg Campus. Some of the required courses are available at the York Campus, as well as 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
- Employ effective oral and written technical communication

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 62)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	CIS 222 Introduction to Windows Servers	3	*Program Specific Electives	6
ENGL 104 Technical Writing	3	CIS 227 Technical Support	3		
COMM 101 Effective Speaking	3	CIS 264 Fundamentals of Linux Administration	3		
Core A Elective	3	CISE 200 Information Security Fundamentals	3		
Core B Elective	3	CNT 120 Network Communication Technology I	3		
Core C Elective (Rec: MATH 100 or higher)	3	CNT 125 Network Communication Technology II	4		
Free Elective	3	CNT 140 The Physical Network	3		
Physical Education & Wellness	1	CNT 220 Internetworking	5		
	22	ELEC 125 Introduction to PC Technology	3		
		ELEC 126 Installing & Troubleshooting PCs	4		
			34		

\* Select program specific electives from the following: CPS 121; CISE 210; CNT 230, 240, 250, 260, 291, or any CNT course.

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

### RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

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

Semester I	Semester II	Semester III	Semester IV
CNT 120	CNT 125	CIS 222	CIS 227
COMM 101	CNT 140	CIS 264	CISE 200
Core A, B, or C Elective	Core A, B, or C Elective	CNT 220	Core, A, B, or C Elective
ELEC 125	ELEC 126	PE & Wellness	Free Elective
ENGL 101	ENGL 104	Program Elective	Program Elective

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## COMPUTER NETWORKING TECHNOLOGY, Certificate Program - 4230

Engineering & Technology Department

CIP Code: 11.0901

The Computer Networking certificate is designed to provide students, who are already working in the field of information technology, with the necessary skills to advance in their current occupations. Students gain additional skills in designing, installing, configuring, troubleshooting, and maintaining 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, Network Interface Controllers (NIC's), hubs, bridges, switches, and routers. Elective courses allow 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 complete program is only available at the Harrisburg Campus. Some of the required courses are available at the York Campus, as well as 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
- Employ effective oral and written technical communication

### 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/index.cfm> for the most current Gainful Employment Information.

# Academic Programs

## CONSTRUCTION ESTIMATING, Diploma Program - 0520

Engineering & Technology Department

CIP Code: 15.1001

Students are prepared for positions in the construction/contracting field as quantity take-off technicians and estimators. The program is only available at the Harrisburg Campus during the evenings.

### Career Opportunities

Graduates secure positions in the construction/contracting field as project estimators. (SOC Code: 13-1051 Cost Estimators)

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:

- Display general knowledge of the construction process
- Understand construction drawings and contract specifications
- Understand construction materials, systems, and methods
- Show a working knowledge of construction law
- Estimate materials and labor requirements

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 21)

#### General Education

#### Major Requirements

#### Other Required Courses

ARCH 130 Construction Materials and Methods	3
ARCH 135 Codes & Specifications	3
BCT 212 Construction Contracts and Related Laws	3
BCT 214 Project Management	3
BCT 215 Construction Estimating	3
GTEC 110 Construction Print Reading	<u>3</u>
	18

\*MATH 161 Technical Math for General Technology 3

\*May be replaced with a higher level MATH offering.

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

# Academic Programs

## CONSTRUCTION FIELD SUPERVISION, Diploma Program - 0530

Engineering & Technology Department

CIP Code: 46.0412

Students are prepared for positions in the construction/contracting field as construction inspectors or supervisors. The program is only available at the Harrisburg Campus during the evenings.

### Career Opportunities

Graduates secure positions in the construction/contracting field as project supervisors.

(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:

- Display general knowledge of the construction process
- Understand construction drawings and contract specifications
- Show a working knowledge of construction administration
- Demonstrate skills in planning, scheduling, and general management

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 21)

General Education	Major Requirements	Other Required Courses	
	ARCH 135 Codes & Specifications	*MATH 161 Technical Math for General Tech	3
	ARCH 214 Site Planning (or)		3
	CVTE 103 Surveying I		(3)
	ARCH 251 Environmental Control Systems for Buildings		3
	BCT 213 Construction Supervision and Leadership		3
	BCT 217 Construction Project Administration		3
	GTEC 110 Construction Print Reading		<u>3</u>
			18

\*May be replaced with a higher level MATH offering.

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

# Academic Programs

## CONSTRUCTION PROJECT MANAGEMENT, Diploma Program - 0540

Engineering & Technology Department

CIP Code: 15.1001

Students are prepared for positions in the construction/contracting field as construction managers. The complete program is only available at the Harrisburg Campus.

### Career Opportunities

Graduates secure positions in the construction/contracting field as project managers.

(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:

- Display general knowledge of the construction process
- Understand construction drawings and contract specifications
- Understand construction materials, systems, and methods
- Demonstrate a working knowledge of construction law
- Demonstrate skills in planning, scheduling, labor relations, and general management

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 24)

#### General Education

#### Major Requirements

#### Other Required Courses

ARCH 130 Construction Materials & Methods	3
ARCH 135 Codes & Specifications	3
BCT 212 Construction Contracts & Related Laws	3
BCT 214 Project Management	3
BCT 216 Construction Planning & Scheduling	3
BCT 217 Construction Project Administration	3
GTEC 110 Construction Print Reading	3
	<u>21</u>

\*MATH 161 Technical Math for General Technology 3

\*May be replaced with a higher level MATH offering.

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

# Academic Programs

## CRIMINAL JUSTICE, Associate in Arts Transfer 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. 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 program may also be completed at the Gettysburg Campus by taking some online courses. Only the General option can be fully completed at the Lancaster Campus. Some of the required courses and option(s) are also available at the 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	
ENGL 101 English Composition I	3	CJ 101 Introduction to Criminal Justice	3
ENGL 102 English Composition II (or)	3	CJ 108 Criminology	3
ENGL 104 Technical Writing (or)	(3)	CJ 212 Criminal Law and Procedure	3
ENGL 106 Business Writing	(3)	CJ 240 Ethics and Diverse Cultures (D)	3
COMM 101 Effective Speaking	3	Law Enforcement or General Transfer Options	<u>18</u>
Core A Elective	3		30
Core B Elective	3		
Core B Elective	3		
Core C Elective Math	3		
Core C Elective Science	3		
Core C Elective	3		
General Education Transfer Elective	3		
Physical Education & Wellness	1		
	31		

### RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Fall Semester	Spring Semester	Fall Semester	Spring Semester
CJ 101	3 COMM 101	3 Core B Elective	3 CJ 240 (D)
CJ 108	3 Core A Elective	3 Core C Elective (Science)	3 Core C Elective
CJ 212	3 Core B Elective		3 Gen. Ed. Transfer Elective
Core C Elective (Math)	3 ENGL 102 or 104 or 06		
ENGL 101	3 PE & Wellness	1	

Select one of the following options to complete the Criminal Justice Transfer degree requirements.

#### Law Enforcement Option

CJ 104 Police Operations (Spring Only)	3
CJ 201 Criminal Investigation (Spring Only)	3
CJ 203 Criminal Evidence (Spring Only)	3
CJ 206 Criminalistics (Varied Offering)	4
CJ 215 CJ Organization (or) (Fall Only)	3
CJ 243 International & Domestic Terrorism (Spring/Summer I)	(3)
Transfer Elective	<u>3</u>
	19

#### General Transfer Option

CJ 104 Police Operations (or) (Spring Only)	3
CJ 106 Introduction to Corrections (Spring Only)	(3)
Any 200 level CJ course or Transfer Elective	6
Transfer Electives	<u>9</u>
	18-20

*Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.*

# Academic Programs

## CRIMINAL JUSTICE (PASSHE), Associate in Arts Transfer 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. The complete program is available at the Harrisburg, Lancaster, and York Campuses. Some of the required courses are available at the Gettysburg Campus.

### *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 = 64)

General Education		Major Requirements	
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
*Core A Elective	3	CJ 212 Criminal Law and Procedure	3
**Core B Elective	6	CJ 240 Ethics and Diverse Cultures (D)	3
***Core C Elective (Math)	6	****Transfer Electives	4-6
****Core C Elective Science	8		25-27
General Education Transfer Elective*	3		
Physical Education & Wellness	1		
	36		

\*Students are to select from the following courses: MUS 102; THTR 101; PHIL 101; ENGL 205, 207; SPAN 101, 102; GRMN 101, 102; FRCH 101, or 102.

\*\*Students are to select from the following courses: GP 201; ANTH 101; ECON 201, 202; HIST 101, 102, 103, 104; PSYC 101; or SOCI 201

\*\*\*Students are to select from the following courses: MATH 101, 111 or 111H, 119, 121, or 202

\*\*\*\*Students must take two lab science courses to fulfill the Core C requirement. They are to select from the following courses: BIOL 101, 102; CHEM 101, 102; PHYS 201, 202.

\*\*\*\*\*It is recommended that students take CIS 105 as one of their transfer electives.

### RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Fall Semester		Spring Semester		Fall Semester		Spring Semester	
CJ 101	3	CJ 104	3	CJ 211	3	CJ 106	3
CJ 108	3	COMM 101	3	CJ 212	3	CJ 240	3
Core B Elective	3	Core A Elective	3	Core C Elective (Math)	3	Core B Elective	3
Core C Elective (Math)	3	ENGL 102, 104 or 106	3	Core C (Science)	4	Core C (Science)	4
ENGL 101	3	Transfer Elective	4	Gen. Ed. Transfer Elective	3	PE & Wellness	1

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## CULINARY ARTS, Associate in Arts Career Degree - 1581

*Business Studies Department*

The hospitality industry offers many opportunities for employment and, as a result, learning experiences are varied. The Culinary Arts AA 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 an off campus commercial restaurant, which is open to the public and located in downtown Harrisburg. 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. Some of the required courses are available at the Gettysburg, Lancaster, Lebanon, and York campuses, as well as through Virtual Learning. 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:

- Compose a complete meal using standardized recipes: hors d'oeuvres, soups, stocks, salads, sauces, meats, poultry, game, seafood, vegetables, first courses, starches, sandwiches, and desserts
- Fabricate meat portions from primal cuts of meat, whole poultry and fish
- Produce a wide variety of baked goods, pastries and confections
- Demonstrate decorative skills, including garnishing and cake decorating
- Show skills necessary for efficient management, including personnel supervision and cost control
- Write and speak effectively
- Appreciate accomplishments in the arts and sciences

### **PROGRAM REQUIREMENTS (TOTAL CREDITS = 75)**

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	CULI 100 World of Wine	1	CIS 105 Intro to Software for Business	3
ENGL 106 Business Writing	3	CULI 102 Applied Hospitality Math	2		
COMM 101 Effective Speaking	3	CULI 113 Sanitation & Safety	2		
Core A Elective	3	CULI 133 Culinary Arts I	5		
Core B Elective	3	CULI 143 Culinary Arts II	5		
Core C Elective (Rec: MATH 100)	3	CULI 153 Culinary Arts III (D)	5		
Free Elective	3	CULI 205 Restaurant Operations I	2		
Physical Education & Wellness	1	CULI 206 Restaurant Operations II	2		
	22	CULI 207 Restaurant Operations III	2		
		CULI 291 Culinary Arts Practicum	3		
		HTMT 101 Intro 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		
			50		

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

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

Semester I	Semester II	Semester III	Semester IV
CULI 102 2	CIS 105 3	COMM 101 3	Core B Elective 3
CULI 113 2	CULI 143 5	CULI 153 (D) 5	CULI 100 1
CULI 133 5	CULI 205 2	CULI 206 2	CULI 207 2
HTMT 101 3	HTMT 125 3		HTMT 110 3
	ENGL 106 3		HTMT 231 3
			PE & Wellness 1

Semester V	Semester VI
Core C Elective 3	Core A Elective 3
CULI 291 3	Free Elective 3
HTMT 122 3	
HTMT 251 3	

*Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.*

# Academic Programs

## CULINARY ARTS, Certificate Program - 1261

*Business Studies Department*

CIP Code: 12.0503

The hospitality industry offers many opportunities for employment and, as a result, learning experiences are varied. The Culinary Arts certificate 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 an off-campus commercial restaurant, which is open to the public and located in downtown Harrisburg. The Culinary Arts Certificate 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*

Job opportunities include positions as 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:

- Plan and prepare a complete meal following standardized recipes
- Fabricate meat portions from primal cuts of meat, whole poultry and fish
- Produce a wide variety of baked goods, pastries and confections
- Demonstrate decorative skills, including garnishing and cake decorating
- Plan menus, estimate food consumption, requisition supplies and construct a basic budget
- Show skills necessary for efficient management, including personnel supervision

### **PROGRAM REQUIREMENTS (TOTAL CREDITS = 47)**

<b>General Education</b>		<b>Major Requirements</b>	
ENGL 106 Business Writing	3	CULI 100 World of Wine	1
		CULI 102 Applied Hospitality Math	2
		CULI 113 Sanitation & Safety	2
		CULI 133 Culinary Arts I	5
		CULI 143 Culinary Arts II	5
		CULI 153 Culinary Arts III	5
		CULI 205 Restaurant Operations I	2
		CULI 206 Restaurant Operations II	2
		CULI 207 Restaurant Operations III	2
		HTMT 101 Introduction to the Hospitality Industry	3
		HTMT 104 Nutrition for Food Service	3
		HTMT 110 Menu Design and Marketing	3
		HTMT 122 Food Purchasing, Receiving, & Storing	3
		HTMT 125 Dining Room Management	3
		HTMT 251 Hospitality Supervision	3
			44

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

# Academic Programs

## CULINARY ARTS-CATERING, Diploma Program - 0121

*Business Studies Department*

CIP Code: 12.0504

The hospitality industry offers many opportunities for employment and, as a result, learning experiences are varied. The Culinary Arts – Catering diploma 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. 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 cooks in restaurants, institutions, and cafeterias; food preparation workers and servers; catering cooks and servers; personal chef; and managing or owning a small food service or catering business.

(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:

- Plan and prepare a complete meal by following standardized recipes
- Fabricate meat portions from primal cuts of meats, whole poultry and fish
- Produce a wide variety of baked goods, pastry and confections
- Demonstrate decorative skills, including garnishing and cake decorating
- Comprehend management techniques
- Begin a small catering or restaurant business or become a personal chef

### **PROGRAM REQUIREMENTS (TOTAL CREDITS = 27)**

#### **General Education**

#### **Major Requirements**

CULI 100 World of Wine	1
CULI 102 Applied Hospitality Math	2
CULI 106 Professional Bartending	1
CULI 113 Sanitation & Safety	2
CULI 123 Catering: Principles, Garnishing & Hors D'oeuvres	3
CULI 133 Culinary Arts I	5
CULI 143 Culinary Arts II	5
CULI 153 Culinary Arts III	5
MGMT 221 Small Business Development	3
	<u>27</u>

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

# Academic Programs

## DENTAL HYGIENE, Associate in Arts Career Degree - 3490

Health & Public Service Department

The Dental Hygiene AA 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.

*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)), email [healthcareers@hacc.edu](mailto:healthcareers@hacc.edu) or call (717) 780-1988 or (800) 222-4222 extension 1988 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 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 = 83)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	DH 101 Theory & Clinical Experience I	6	BIOL 121 Anatomy & Physiology I	4
ENGL 102 English Composition II	3	DH 110 Dental Radiology I	3	BIOL 122 Anatomy & Physiology II	4
COMM 101 Effective Speaking	3	DH 111 Dental Radiology II	1	BIOL 221 Microbiology (Core C)	4
Core A Elective	3	DH 112 Dental Hygiene Theory II	3	BIOL 245 Anatomy & Histology of the Head and Neck	4
Core B (PSYC 101 General Psychology)	3	DH 113 Clinical Experience II	2	NUTR 104 Nutrition	3
Free Elective	3	DH 120 Dental Anatomy	2	SOCI 201 Introduction to Sociology (D)	3
Physical Education & Wellness	1	DH 121 Periodontics I	2		22
	19	DH 130 Medical/Dental Emergencies	1		
		DH 150 Dental Materials	3		
		DH 170 Techniques in Pain Control	2		
		DH 211 Dental Hygiene Theory III	3		
		DH 212 Clinical Experience III	2		
		DH 221 Periodontics II	2		
		DH 223 DH Theory IV	2		
		DH 224 Clinical Experience IV	2		
		DH 230 Oral Pathology	2		
		DH 233 Community Dental Health I	1		
		DH 234 Community Dental Health II	1		
		DH 240 Pharmacology	2		
			42		

# Academic Programs

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Summer		Fall Semester		Spring Semester		Summer		Fall Semester		Spring Semester	
BIOL 121	4	BIOL 122	4	BIOL 221 (Core C)	4	DH 170	2	DH 211	3	COMM 101	3
ENGL 101	3	BIOL 245	4	DH 111	1	ENGL 102	3	DH 212	2	Core A Elective	3
PSYC 101 (Core B)	3	DH 101	6	DH 112	3	PE & Wellness	1	DH 221	2	DH 223	2
		DH 110	3	DH 113	2			DH 230	2	DH 224	2
		DH 120	2	DH 121	2			DH 233	1	DH 234	1
				DH 130	1			Free Elective	3	DH 240	2
				DH 150	3					SOCI 201 (D)	3
				NUTR 104	3						

*Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.*

# Academic Programs

## DENTAL ASSISTING, Certificate Program - 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 chair side and other related office and laboratory procedures. 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. This certificate is 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. To be eligible for the national examination, individuals must graduate from an accredited institution and have a current registration in CPR. The Dental Assisting program is accredited by the Commission on Dental Accreditation. The Commission is a specialized accrediting body recognized by the United States Department of Education. The clinical program is only available at the Harrisburg Campus. However, some of the required courses may be taken at all of HACC's campuses, as well as through Virtual Learning.

*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)), email [healthcareers@hacc.edu](mailto:healthcareers@hacc.edu) or call (717) 780-1988 or (800) 222-4222 extension 1988 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 find employment as chair side 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
- Write and speak effectively
- Perform basic chair side 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 = 40)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	DA 170 Dental Assisting Pre-Clinic	4	BIOL 111 Intro to Human Biology (or)	3
COMM 101 Effective Speaking	3	DA 171 Dental Assistant I	4	BIOL 121 Anatomy & Physiology I	(4)
	6	DA 172 Dental Materials	4		
		DA 173 Dental Radiology I	4		
		DA 175 Oral Anatomy	3		
		DA 177 Dental Science	1		
		DA 178 Dental Clinical Experience	6		
		DA 180 Dental Office Practice	3		
		DA 181 Preventive Dentistry	2		
			31		

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

### RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Fall Semester		Spring Semester		Summer Session	
BIOL 111 or 121	3 or 4	DA 172	4	COMM 101 or 203	3
DA 171	4	DA 174	3	DA 179	5
DA 173	4	DA 176	3		
DA 175	3	DA 178	2		
DA 180	3	ENGL 101	3		

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

# Academic Programs

## DIAGNOSTIC MEDICAL SONOGRAPHY, Associate in Science Career Degree - 3540

Health & Public Service Department

Students are prepared as entry level Diagnostic Medical Sonographers who perform general ultrasound imaging. Students acquire the knowledge and technical expertise to produce ultrasound images of the human body that are used by physicians to make a medical diagnosis. The 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), 1361 Park Street, 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. Some of the general education requirements are available at all of HACC's campuses, as well as through Virtual Learning.

**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)), email [healthcareers@hacc.edu](mailto:healthcareers@hacc.edu) or call (717) 780-1988 or (800) 222-4222 extension 1988 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
- 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 = 81)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	DMS 105 Introduction to Health Care	4	BIOL 121 Anatomy & Physiology I	4
ENGL 102 English Composition II	3	DMS 110 Introduction to DMS	4	BIOL 122 Anatomy & Physiology II	4
COMM 101 Effective Speaking (or)	3	DMS 115 Clinical Experience I	1	MATH 103 College Algebra (Core C)	3
COMM 203 Interpersonal Communication	(3)	DMS 120 DMS Sonography Laboratory I	1	PHYS 151 Physics for Technicians	4
Core A Elective	3	DMS 125 Clinical Experience II	3		15
Core B Elective	3	DMS 130 Abdominal Sonography I	3		
Free Elective	3	DMS 140 DMS Sonography Laboratory II	1		
Physical Education & Wellness	1	DMS 150 OB/GYN Sonography I	3		
	19	DMS 170 Acoustical Principles I	4		
		DMS 180 High Resolution Imaging	2		
		DMS 210 Intro to Vascular Sonography	3		
		DMS 215 Clinical Experience III	4		
		DMS 220 DMS Sonography Laboratory III	1		
		DMS 225 Clinical Experience IV	4		
		DMS 230 Abdominal Sonography II	1		
		DMS 250 OB/GYN Sonography II	3		
		DMS 270 Acoustical Principles II	3		
		DMS 274 DMS Topics	2		
			47		

Note: A grade of C or higher is required for all BIOL; COMM 101 or 203; DMS; ENGL 101 and 102; MATH; and PHYS courses.

Note: Graduation requirements include applying, scheduling, and sitting for the ARDMS American Registry for Diagnostic Medical Sonography), SPI (Sonography Principles & Instrumentation) Examinations within the final term of the DMS program and prior to completion of DMS 225 .

# Academic Programs

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Summer	Fall Semester	Spring Semester	Summer	Fall Semester	Spring Semester						
BIOL 121	4	BIOL 122	4	DMS 115	1	DMS 125	3	DMS 215	4	Core A Elective	3
COMM 101 or 203	3	DMS 105	4	DMS 120	1	DMS 140	1	DMS 220	1	Core B Elective	3
ENGL 101	3	DMS 110	4	DMS 130	3	DMS 180	2	DMS 250	3	DMS 225	4
MATH 103	3	PHYS 151	4	DMS 150	3	DMS 210	3	DMS 270	3	DMS 274	2
				DMS 170	4	DMS 230	1	Free Elective	3	PE & Wellness	1
				ENGL 102	3						

*Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.*

# Academic Programs

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

Health & Public Service Department

Graduates are prepared to transfer to 4-year colleges/universities for teaching certification in PreK-4<sup>th</sup> Grade.

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.

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. Students are also required to attain a qualifying score on the Pre-Service Academic Program Assessment (PAPA) test before transferring.

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 Harrisburg, Lancaster, and Lebanon campuses. Some of the required courses are available at the Gettysburg and York campuses, as well as through Virtual Learning.

### Career or 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:

- Know and understand 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
- Know about, 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 = 64)

General Education		Major Requirements	
ENGL 101 English Composition I	3	EDUC 110 The Education Professional	3
ENGL 102 English Composition II	3	EDUC 120 Observation & Assessment of Young Children	3
COMM 101 Effective Speaking (or)	3	EDUC 140 Integrating the Arts & Play as Educative Process	3
COMM 203 Interpersonal Communication	(3)	EDUC 180 Diversity & Partnerships in Family, Schools and Community (D)	3
*Core A Elective	3	EDUC 210 Exceptional Learners	3
**Core B Elective	3	EDUC 220 Mathematics for the Young Learner	3
**Core B Elective	3	EDUC 260 Social Studies for the Young Learner	3
Core C Elective (MATH 113)	3	EDUC 261 Integrating Curriculum in Early Childhood Class	3
Core C Elective (MATH 114)	3	EDUC 270 Foundations of Early Literacy	3
***Core C Elective	3	EDUC 290 Introduction to Classroom Teaching	3
****General Education Transfer Elective	3	PSYC 212 Child Growth and Development	3
Physical Education & Wellness	1		33
	31		

\*Students select one Core A from ENGL 201, 202, 203, 204 or 207.

\*\*Students select one Core B from Sociology, Anthropology, Psychology or Political Science/Government areas and their other Core B from the History or Geography areas.

\*\*\*Select Core C science electives from the following: ASTR, BIOL, CHEM, GEOL, METR, PHSC, and PHYS

\*\*\*\*Recommended: ENGL 201, 202, 203, 204 or 207.

# Academic Programs

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

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

Semester I		Semester II		Semester III		Semester IV	
COMM 101 or 203	3	EDUC 120	3	Core B Elective	3	Core A Elective	3
EDUC 110	3	EDUC 140	3	Core C Elective	3	EDUC 180 (D)	3
ENGL 101	3	EDUC 220	3	EDUC 210	3	EDUC 261	3
MATH 113 (Core C)	3	ENGL 102	3	EDUC 260	3	EDUC 290	3
PSYC 101 (Core B)	3	MATH 114 (Core C)	3	EDUC 270	3	PE & Wellness	1
		*PSYC 212	3	Gen Ed Transfer Elective	3		

\*PSYC 212 has a prerequisite of PSYC 101.

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## EARLY CARE AND EDUCATION, Associate in Arts Career Degree - 5501

Health & Public Service Department

Graduates of the Early Care and Education 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 Lebanon campuses. Some of the required courses are available at the Gettysburg and York campuses, as well as through Virtual Learning.

### 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 = 61)

General Education		Major Requirements	
ENGL 101 English Composition I	3	EDUC 111 Fundamentals of Early Childhood Care & Education	3
ENGL 102 English Composition II	3	EDUC 120 Observation & Assessment of Young Children	3
COMM 101 Effective Speaking (or)	3	EDUC 135 Health, Safety & Nutrition in Early Care & Education	3
COMM 203 Interpersonal Communication	(3)	EDUC 140 Integrating the Arts & Play as Educative Process	3
Core A Elective	3	EDUC 145 Infant & Toddler Care & Education	3
Core B Elective (Recommend: PSYC 101)	3	EDUC 180 Diversity & Partnerships in Family, Schools & Community (D)	3
Core C Elective	3	EDUC 211 Early Intervention: Exceptional Children	3
Free Elective	3	EDUC 220 Mathematics for the Young Learner	3
Physical Education & Wellness	1	EDUC 261 Integrating Curriculum in Early Childhood Class	3
	22	EDUC 270 Foundations of Early Literacy	3
		EDUC 291 Early Care & Education Practicum	3
		EDUC 185 Development & Behavior in Children (or)	3
		*PSYC 212 Child Growth Development	(3)
		Program Elective	3
			<u>39</u>

\*PSYC 212 has a prerequisite of PSYC 101. Students electing the course may need to consult an advisor to plan their sequence of courses.

### RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

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

Fall I	Spring II	Summer III	Fall IV	Spring V
COMM 101 or 203	3 EDUC 185 or PSYC 212	3 Core C Elective	3 EDUC 211	3 EDUC 291
Core A Elective	3 EDUC 135	3 EDUC 270	3 EDUC 261	3 EDUC 180 (D)
EDUC 111	3 EDUC 140	3 PE & Wellness	1 ENGL 102	3 EDUC 145
ENGL 101	3 EDUC 220	3	EDUC 120	3 Free Elective
PSYC 101 (Core B)	3		Program Elective	3

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## EARLY CHILDHOOD CARE AND EDUCATION, Certificate Program - 5170

Health & Public Service Department

CIP Code: 13.1210

This certificate contains 33 credits, including 30 credits of Early Childhood Care and Education coursework for the Office of Child Development & Early Learning (OCDEL) career lattice at Level IV. This lattice encourages practitioners to obtain credentials and degrees, as well as plan their educational pathway.

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. The complete program is available at the Harrisburg, Lancaster, and Lebanon campuses. Some of the required courses are available at the Gettysburg and York campuses, as well as through Virtual Learning.

### Career or Transfer 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:

- Know and understand 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
- Know about, 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 through the course of the Early Care and Education certificate from entry point class to job search

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 33)

General Education		Major Requirements	
ENGL 101 English Composition I	3	EDUC 111 Fundamentals of Early Childhood Care & Education	3
		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 Intervention: Exceptional Children	3
		EDUC 261 Integrating Curriculum in Early Childhood Class	3
		*Electives	6
			30

\*Choose from the following courses: EDUC 130, 131, 155, 165, 175, 180, 270, 295, and 296.

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

# Academic Programs

## ELECTRICAL TECHNOLOGY, Associate in Applied Science Career Degree - 4750

Engineering & Technology Department

The Electrical Technology Degree Program 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. Students are able to choose from a broad spectrum of program electives within such areas as green building, business, and marketing, to further prepare them for career paths in green technology or in self-employment opportunities. Topics include basic electrical theory, residential and commercial wiring, safety, the National Electrical Code, blueprint reading, business ethics and law, and small business development. In addition, students may select courses from a number of technology disciplines that best meet their individual career goals within the electrical field. The complete program is offered at the Harrisburg Campus's Midtown buildings and at the York Campus. Students can attend full time or part time.

### Career Opportunities

Graduates find employment 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
- Write and speak effectively
- Appreciate accomplishments in the arts and sciences

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 66)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	ELOC 153 Fundamentals of Electricity (or)	4	*MATH 162 Technical Math for Elec Tech	3
ENGL 104 Technical Writing (or)	3	HVAC 101 Basic Electrical Fundamentals	(4)	**Program Electives	11
ENGL 102 English Composition II (or)	(3)	ELOC 157 Electrical Wiring I	4		14
ENGL 106 Business Writing	(3)	ELOC 163 Electrical Wiring II	4		
COMM 101 Effective Speaking (or)	3	ELOC 165 Alarm & Phone Cabling	2		
COMM 203 Interpersonal Communication	(3)	ELOC 168 Introduction to Fiber Optics	3		
Core A Elective	3	ELOC 171 Electrical Service	2		
Core B Elective	3	ELOC 172 National Electrical Code	2		
Core C Elective	3	ELOC 175 Electrical System Troubleshooting	3		
Free Elective	3	GTEC 101 Safety: OSHA-30 & NFPA-70E	3		
Physical Education & Wellness	1	GTEC 110 Construction Print Reading	3		
	22		30		

\*May be replaced with MATH 103 or higher.

\*\*Select program electives from the following: BUSI 200, 201, 202, 209, 225, 230, 245; CAD; CARP; CIS 100 or higher; CNT; ELOC 107, 108 or 291; HVAC (select HVAC courses that are not already required for this program); HBR; GREN; IA 201, 202, 208, 213, and 221; IMT 102, 104, or 204; MATH 111 or 161; MGMT 119, 201, 221, or 226; MKTG 201, 204, 205, 209, 210, 212, 216, 217, 218, 235, or 245; WELD 111.

### 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	
ELOC 153 or HVAC 101	4	Core A Elective	3	COMM 101 or 203	3	Core C Elective	3
ELOC 172	2	ELOC 157	4	Core B Elective	3	ELOC 175	3
ENGL 101	3	ELOC 163	4	ELOC 163	4	ENGL 104 or 102 or 106	3
GTEC 101	3	ELOC 168	3	ELOC 165	2	Free Elective	3
GTEC 110	3	MATH 162	3	ELOC 171	2	PE & Wellness	1
Program Elective	2	Program Electives	6	Program Elective	3		

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## ELECTRICAL TECHNOLOGY, Certificate Program - 4370

Engineering & Technology Department

CIP Code: 46.0302

The Electrical Technology Certificate program prepares students with the knowledge and skills needed for employment in the electrical field. Emphasis is placed on residential, commercial construction, and maintenance applications. Topics include basic electrical theory, residential and commercial wiring, safety, the National Electrical Code, and blueprint reading. In addition, students may select courses from a number of technology disciplines that best meet their individual career goals within the electrical field. The complete program is offered at the Harrisburg Campus's Midtown buildings and at the York Campus. 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 procedures used in residential, commercial, and industrial electrical construction
- Wire 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 = 36)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	ELOC 153 Fundamentals of Electricity (or) HVAC 101 Basic Electrical Fundamentals	4 (4)	*MATH 162 Technical Math for Electrical Tech	3
		ELOC 157 Electrical Wiring I	4	Program Electives**	<u>3</u>
		ELOC 163 Electrical Wiring II	4		6
		ELOC 165 Alarm & Phone Cabling	2		
		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	<u>3</u>		
			27		

\*May be replaced with MATH 103 or higher.

\*\*Select program electives from the following: CARP; CIS 100 or higher; CNT; ELEC; ELOC 168; HVAC; HBR; IA 201, 202, 208, 213, or 221; IMT 102, 104, or 204; MGMT; MATH (any college level); WELD 111.

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

# Academic Programs

## ELECTRICAL TECHNOLOGY, Diploma Program - 0300

Engineering & Technology Department

CIP Code: 46.0302

The Electrical Technology Diploma program prepares students with the knowledge and skills needed for entry-level jobs in the electrical field. Emphasis is placed on residential and commercial construction applications. Topics include basic electrical theory, residential and commercial wiring, safety, the National Electrical Code, and blueprint reading. Students calculate, install, and troubleshoot typical circuits. In addition, students are able to select courses from a number of technology disciplines that best meet their individual career goals within the electrical field. The complete program is offered at the Harrisburg Campus's Midtown II building and at the York Campus. Students may attend full time or part time.

### Career Opportunities

Graduates find employment as entry-level maintenance and electrician helpers/apprentices. (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 and understand safety requirements, as needed, to meet workplace quality standards
- Properly and safely handle electrical tools and materials
- Read and interpret blueprints necessary for specified installations
- Demonstrate procedures used in residential, commercial, and industrial electrical construction
- Troubleshoot equipment and demonstrate repair procedures

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 26)

General Education	Major Requirements		Other Required Courses	
	ELOC 153 Fundamentals of Electricity (or)	4	Program Electives*	6
	HVAC 101 Basic Electrical Fundamentals	(4)		
	ELOC 157 Electrical Wiring I	4		
	ELOC 163 Electrical Wiring II	4		
	ELOC 172 National Electrical Code	2		
	GTEC 101 Safety: OSHA 30 & NFPA-70E	3		
	GTEC 110 Construction Print Reading	3		
		20		

\*Select program electives from the following: CARP; ELOC 165 or 171; \*\*ENGL 901; HBR; IA; IMT 102; MGMT; \*\*MATH 161 or 162; WELD.

\*\*May be replaced with a higher level English or Math offering.

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

# Academic Programs

## ELECTRONIC ENGINEERING TECHNOLOGY, Associate in Science Career Degree - 4580

Engineering & Technology Department

Students prepare to enter the job market as electronic or electro-mechanical technicians working with electrical or electronic systems, digital systems, and computer equipment. The complete program is only available at the Harrisburg Campus. Some of the required courses are available at the Lancaster, Lebanon, and York campuses.

### 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
- Write and speak effectively
- Appreciate accomplishments in the arts and sciences

### 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	MATH 103 College Algebra	3
ENGL 104 Technical Writing	3	ELEC 100 Fundamentals of Electricity and Electronics	1	MATH 104 Trigonometry	<u>3</u>
COMM 101 Effective Speaking	3	ELEC 101 Equipment Utilization	1		6
Core A Elective	3	ELEC 106 Fundamentals of Electronics	4		
Core B Elective	3	ELEC 108 Applied Digital Electronics	3		
Free Elective	3	ELEC 111 AC/DC Circuits I	4		
Physical Education & Wellness	<u>1</u>	ELEC 125 Introduction to PC Technology	3		
	19	ELEC 126 Installing and Troubleshooting PCs	4		
		ELEC 203 Electronic Circuit Design	4		
		ELEC 211 AC/DC Circuits II	4		
		ELEC 213 Digital Electronics	4		
		ENGR 102 Engineering & Engineering-Tech Orientations	2		
		IA 208 PLCs and Automation	<u>2</u>		
			39		

### 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		Summer		Fall Semester		Spring Semester	
CAD 154	3	ELEC 111	4	Core A Elective	3	ELEC 106	4	COMM 101	3
ELEC 100	1	ELEC 126	4	Core B Elective	3	ELEC 108	3	ELEC 203	4
ELEC 101	1	ENGL 104	3			ELEC 211	4	ELEC 213	4
ELEC 125	3	MATH 104	3			Free Elective	3	IA 208	2
ENGL 101	3							PE & Wellness	1
ENGR 102	2								
MATH 103	3								

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## ELECTRONIC TECHNOLOGY, Certificate Program - 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 ( <b>or</b> )	4		
	ELEC 211 AC/DC Circuits II	(4)		
	ELEC 213 Digital Electronics ( <b>or</b> )	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/index.cfm> for the most current Gainful Employment Information.

# Academic Programs

## ENGINEERING, Associate in Science Transfer Degree - 4120

Engineering & Technology Department

Students prepare to continue study toward the 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 will be admitted. 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 only available at the Harrisburg Campus. Some of the required courses are available at the Gettysburg, Lancaster, Lebanon, and York campuses.

### Career or 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.

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 63)

General Education		Major Requirements	
ENGL 101 English Composition I	3	CAD 154 Computer-Aided Drafting & Design	3
ENGL 102 English Composition II (or)	3	ENGR 102 Engineering & Engineering-Tech Orientation	2
ENGL 104 Technical Writing	(3)	ENGR 213 Statics	3
COMM 101 Effective Speaking (or)	3	ENGR 214 Dynamics	3
COMM 203 Interpersonal Communication	(3)	MATH 221 Calculus III	4
Core A Elective	3	PHYS 211 Physics for Engineers & Scientists I	4
Core B Elective	3	PHYS 212 Physics for Engineers & Scientists II	4
Core B Elective (Recommend: ECON 201)	3	*Transfer Electives	6
Core C Elective (CHEM 101)	4		29
Core C Elective (MATH 121)	4		
Core C Elective (MATH 122)	4		
General Education Transfer Elective	3		
Physical Education & Wellness	1		
	34		

\*Select courses from the following: BIOL 101; CHEM 102, 203; CPS 115, 121, 135, 161; ELEC 213; ENGR 271, 291; ENGY 111; ENVS 201; GEOL 101; MATH 125, 202, 220, 222; PHYS 215

### 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
CAD 154	3	COMM 101/203	3
CHEM 101 (Core C)	4	Core B Elective	3
ENGL 101	3	ENGL 102 or 104	3
ENGR 102	2	MATH 122 (Core C)	4
MATH 121 (Core C)	4	Transfer Elective	3
		Core A Elective	3
		ENGR 213	3
		MATH 221	4
		PHYS 211	4
		Transfer Elective	3
		*Core B Elective	3
		ENGR 214	3
		Gen Ed Transfer Elective	3
		PE & Wellness	1
		PHYS 212	4

\*ECON 201 is usually preferred as a Core B elective at transfer institutions

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## ENOLOGY & VITICULTURE TECHNOLOGY, Associate in Applied Science Career Degree - 1865

Business Studies Department

The Enology and Viticulture Technology Program teaches basic theory and practices of winemaking from the point of harvest to packaging. Students can select additional courses that allow for specialization in wine production, winery management, or vineyard management to prepare individuals for work in the vineyard and wine industry. Several courses include “camps” conducted at regional vineyards, wineries and the Harrisburg Camps to provide students with hands -on instruction. Students are able to participate in an internship at an approved winery or vineyard. The complete program is offered through online and blended formats and is coordinated through the Harrisburg Campus. Students must be 21 years of age in order to participate in wine evaluation sessions.

### Career Opportunities

Graduates are prepared for employment in a winery as a Cellar Worker, Lab Technician, or tasting room staff, or in a vineyard as a Manager or Foreman.

### Competency Profile

This curriculum is designed to prepared students to:

- Perform the required operations necessary to produce different styles of wine
- Distinguish between the various wine styles respective to the major regions
- Operate processing equipment in all phases of production
- Create a Hazard Analysis and Critical Control Point (HACCP) plan of quality control
- Perform sensory evaluation of wine samples for quality control
- Perform chemical and microbiological tests that monitor wine as it moves from the point of harvest through fermentation and onto aging
- Prepare and implement a sanitation protocol for a winery
- Demonstrate knowledge of vineyard operations
- Maintain records in accordance with federal, state and local regulations
- 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	ENVI 100 General Viticulture	3	CIS 105 Intro to Software for Business	3
ENGL 102 English Composition II (or)	3	ENVI 161 Fundamentals of Enology	3	CULI 100 The World of Wine	1
ENGL 104 Technical Writing (or)	(3)	ENVI 164 Wine Chem. & Microbiology	4	*Enology or Viticulture Option	6
ENGL 106 Business Writing	(3)	ENVI 167 Advanced Winemaking	3	**Program Electives	6
COMM 101 Effective Speaking (or)	3	ENVI 173 Winery Sanitation	1		16
COMM 203 Interpersonal Communication	(3)	ENVI 183 Sensory Evaluation I	3		
Core A Elective	3	ENVI 191 Winery Internship	3		
Core B Elective	3	ENVI 215 Harvest Wine Field Experience	1		
Core C Elective	3	ENVI 250 Vineyard & Winery Capstone	1		
Free Elective	3	ENVI 261 Sensory Clarification and Packaging	3		
Physical Education & Wellness	1		25		
	22				

\***Enology Option**-Select from the following: ENVI 253, 275, 277.

\***Viticulture Option**-Select from the following: ENVI 130, 140.

\*\*Select from the following courses: HORT 102; MGMT 221; MKTG 201, 212, 218.

### 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	Summer Session	Fall Semester	Spring Semester	
CIS 105	3	Core B Elective	3	ENVI 130	3
Core A Elective	3	ENGL 102 or 104 or 106	3	ENVI 253	3
ENGL 101	3	ENVI 167	3	CULI 100	1
ENVI 161	3	ENVI 173	1	ENVI 100	3
ENVI 164	4	ENVI 183	3	ENVI 215	1
				ENVI 250	1
				ENVI 261	3
				Free Elective	3
				PE & Wellness	1
				Program Electives	6

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## ENOLOGY & VITICULTURE TECHNOLOGY, Certificate Program - 1303

Business Studies Department

CIP Code: 01.0309

The Enology and Viticulture Certificate teaches basic theory and practices of winemaking from the point of harvest to packaging. Students can select additional courses that allow for specialization in wine production, winery management, or vineyard management to prepare individuals for work in the vineyard and wine industry. Several courses include “camps” conducted at regional vineyards, wineries and the Harrisburg Camps to provide students with hands-on instruction. Students are able to participate in an internship at an approved winery or vineyard. The complete program is offered through online and blended formats and is coordinated through the Harrisburg Campus. Students must be 21 years of age in order to participate in wine evaluation sessions.

### Career Opportunities

Graduates are prepared for employment in a winery as a Cellar Worker, Lab Technician, or tasting room staff, or in a vineyard as a Manager or Foreman. (SOC Code: 45-1011 Farm & Forestry Worker Supervisors)

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 prepared students to:

- Perform the required operations necessary to produce different styles of wine
- Distinguish between the various wine styles respective to the major regions
- Operate processing equipment in all phases of production
- Create a Hazard Analysis and Critical Control Point (HACCP) plan of quality control
- Perform sensory evaluation of wine samples for quality control
- Perform chemical and microbiological tests that monitor wine as it moves from the point of harvest through fermentation and onto aging
- Prepare and implement a sanitation protocol for a winery
- Demonstrate knowledge of vineyard operations
- Maintain records in accordance with federal, state and local regulations

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 32)

General Education	Major Requirements		Other Required Courses	
	ENVI 100 General Viticulture	3	CULI 100 The World of Wine	1
	ENVI 161 Fundamentals of Enology	3	*Enology or Viticulture Options	6
	ENVI 164 Wine Chem. & Microbiology	4		7
	ENVI 167 Advanced Winemaking	3		
	ENVI 173 Winery Sanitation	1		
	ENVI 183 Sensory Evaluation I	3		
	ENVI 191 Winery Internship	3		
	ENVI 215 Harvest Wine Field Experience	1		
	ENVI 250 Vineyard & Winery Capstone	1		
	ENVI 261 Sensory Clarification and Packaging	3		
		25		

\***Enology Option**-Select from the following: ENVI 253, 275, 277

\***Viticulture Option**-Select from the following: ENVI 130, 140

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

# Academic Programs

## ENVIRONMENTAL SCIENCE Associate in Arts Transfer Degree - 3040

Science Department

This program provides the basic science and general education courses needed for transfer to a bachelor's degree program in ecology, environmental management, environmental science, industrial hygiene, recycling technology, or waste management. 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 only available at the Harrisburg Campus. Some of the required courses are available at the Gettysburg, Lancaster, Lebanon, and York campuses, as well as through Virtual Learning.

### Career or Transfer Opportunities

This transfer curriculum is provided as a guide for students planning to transfer to a baccalaureate degree granting institution. Transfer students may continue their education in preparation for fields as diverse as pollution prevention, waste management, environmental clean-up, air quality, environmental education, water and waste water, natural resource management, regulatory affairs, impact assessment, and environmental monitoring.

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 62)

General Education		Major Requirements	
ENGL 101 English Composition I	3	BIOL 102 General Biology II	4
ENGL 102 English Composition II (or)	3	CHEM 102 General Inorganic Chemistry & Qualitative Analysis	4
ENGL 104 Technical Writing	(3)	ENVS 201 Introduction to Environmental Science	4
COMM 101 Effective Speaking	3	GEOL 201 Environmental Geology	4
Core A Elective	3	*MATH 119 Pre-Calculus (or)	4
Core B Elective (ECON 201)	3	MATH 121 Calculus I	(4)
Core B Elective (GIS 141)	3	PHYS 201 General Physics I	4
Core C Elective (BIOL 101)	4	**Program Specific Electives	<u>4</u>
Core C Elective (CHEM 101)	4		28
Core C Elective (MATH 202)	4		
General Education Transfer Elective	3		
Physical Education and Wellness	<u>1</u>		
	34		

\*Course waived if student qualifies for MATH 121

\*\*Select from the following: BIOL 206, 212, 215, 221, ENSP 200, and 205.

### 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		Summer		Fall Semester		Spring Semester	
BIOL 101 (Core C)	4	BIOL 102	4	COMM 101	3	ECON 201 (Core B)	3	Core A Elective	3
CHEM 101 (Core C)	4	CHEM 102	4			ENVS 201	4	GEOL 201	4
ENGL 101	3	ENGL 102/104	3			Gen. Ed. Transfer Elective	3	PHYS 201	4
MATH 119 or 121	4	GIS 141 (Core B)	3			MATH 202 (Core C)	4	Program Elective	4
		PE & Wellness	1						

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## ENVIRONMENTAL SPECIALIST, Associate in Science Career Degree - 3570

*Science Department*

The Environmental Specialist Program - Environmental Assessment concentration provides certifiable expertise in the 40-Hr HAZWOPER certification. Students are proficient in environmental site characterization or assessment and obtain strong interdisciplinary skills in chemistry, geology, and biology. Proficiency in the knowledge of environmental principles, applied mathematics, field sampling, laboratory methods, regulatory compliance, and geographic information systems are other focal points of the curriculum.

The Environmental Specialist Program - Sustainable Resource Management concentration provides expertise in the knowledge of sustainable resource management as it relates to environmental, social, and economic domains. Students are proficient in life-cycle analysis and in determining cost benefits for various waste management and recycling strategies. Emphasis is placed on waste reduction and re-use strategies in relation to market trends and applicable environmental regulations. Computer use and oral and written communication skills are also gained.

The complete program is available at the Harrisburg Campus. Some required courses are available at the Gettysburg, Lancaster, Lebanon, and York campuses, as well as through Virtual Learning.

### *Career Opportunities*

Graduates of the Environmental Assessment concentration are prepared for a wide variety of industrial, governmental, and service jobs in such areas as environmental monitoring, laboratory services, pollution prevention, environmental cleanup, watershed assessment, air quality, water and wastewater treatment, solid and hazardous waste, natural resource management, and regulatory affairs.

Graduates of the Sustainable Resource Management concentration are prepared for a wide variety of service jobs in the private and public sectors of environmental resource and materials management, such as waste reduction, re-use, recycling, pollution prevention, and environmental management systems.

### *Competency Profile*

This curriculum is designed to prepare students to:

#### **Environmental Assessment Concentration**

- Demonstrate knowledge of environmental principles, applied field sampling laboratory methods, and regulatory compliance
- Apply mathematical concepts to environmental problem solving
- Perform technician work while following appropriate field, lab, and safety methods
- Demonstrate computer literacy in data manipulation and analysis
- Develop analytical skills, including inductive and deductive reasoning
- Communicate results both orally and through written reports
- Receive certifications associated with selected environmental skills and coursework
- Exhibit practical expertise learned in workplace internships or work projects
- Recognize environmental work practices and procedures, and professional conduct and expectations

#### **Sustainable Resource Management Concentration**

- Demonstrate knowledge of sustainable resource management with implementation of waste reduction, re-use, recycling, and pollution prevention strategies
- Implement environmental system management and sustainable business practices that are in compliance with applicable environmental regulations
- Ascertain market trends and assist in management of waste materials for facilities
- Comprehend fundamental concepts of business applications and decision-making related to sustainable resource management
- Use computer applications and demonstrate effective oral and written skills
- Recognize environmental work practices and procedures and professional conduct and expectations

# Academic Programs

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 70)

General Education		Major Requirements	
ENGL 101 English Composition I	3	CHEM 100 Principles of Chemistry	3
ENGL 104 Technical Writing	3	CIS 105 Introduction to Software for Business	3
COMM 101 Effective Speaking (or)	3	ENSP 160 Professional Issues	1
COMM 203 Interpersonal Communication	(3)	ENSP 205 Environmental Laboratory Methods	4
Core A Elective	3	ENSP 215 Hazardous Substances and Safety	3
Core B Elective	3	ENSP 220 Environmental Laws, Regs & Compliance	3
Free Elective	3	ENSP 260A Environmental Internship	3
Physical Education and Wellness	1	ENVS 201 Introduction to Environmental Science	4
	19	MATH 103 College Algebra	3
			<u>27</u>
Environmental Assessment Concentration		Sustainable Resources Concentration***	
BIOL 130 Field Biology	4	ENSP 230 Pollution Prevention & Waste Management	3
ENSP 200 Quantitative Field Methods	4	ENSP 235 Environmental Systems & Sustainability	3
ENSP 210 Site Assessment and Planning	3	GREN 102 Alternative Energy Economics	3
ENSP 225 Aquatic Resource Management	3	GREN 218 Sustainable Materials Management	3
GEOL 201 Environmental Geology	4	GREN 221 Project Management and Design	3
GIS 141 Introduction to GIS	3	GREN 228 Environmental Marketing	3
*Concentration Specific Elective	3	MGMT 230 Principles of Supply Chain Management	3
	24	**Concentration Specific Elective	3
			<u>24</u>

\*Select from the following: BIOL 101, 212; CHEM 101; ENSP 230, 235; GEOL 101; MATH 202.

\*\*Select from the following: CHEM 101; ENGR 271; GEOL 201; GTEC 104, 202; MATH 202.

\*\*\*The following courses require a grade of C or higher: GREN 102, 218, 221, and 228.

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

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

### Environmental Assessment Concentration

Fall Semester	Spring Semester	Summer Session	Fall Semester	Spring Semester
CHEM 100	3 Core B Elective	3 ENSP 215	3 BIOL 130	4 Concentration Specific Elective
ENGL 101	3 ENGL 104	3 ENSP 260A	3 CIS 105	3 Core A Elective
ENSP 160	1 ENSP 220		3 COMM 101 or 203	4 ENSP 205
ENVS 201	4 GIS 141		4 ENSP 200	3 ENSP 210
MATH 103	3 GEOL 201		3 ENSP 225	3 Free Elective
PE and Wellness	1			

### Sustainable Resources Concentration

Fall Semester	Spring Semester	Summer Session	Fall Semester	Spring Semester
CHEM 100	3 ENGL 104	3 ENSP 215	3 COMM 101 or 203	3 Core A Elective
CIS 105	3 ENSP 160	3 ENSP 260A	3 Core B Elective	3 Concentration Specific Elective
ENGL 101	3 ENSP 220		3 ENSP 230	4 ENSP 205
ENVS 201	4 ENSP 235		3 Free Elective	3 GREN 228
MATH 103	3 GREN 102		3 GREN 221	3 MGMT 230
	3 GREN 218		1 PE & Wellness	

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

**\*This program is currently under review. Interested students are to contact the Science Department Chair for more information.**

# Academic Programs

## EXERCISE SCIENCE-PHYSICAL EDUCATION, Associate in Science Transfer

### Degree - 3121

*Science Department*

This program prepares students to transfer to a baccalaureate degree program in Physical Education, Exercise Science, Health, Exercise Physiology, Kinesiology, Athletic Training, and similar curricula in Health, Physical Education, Recreation and Dance.

#### **Exercise Science Track**

Graduates of such baccalaureate programs find employment in health, health and fitness center program management, corporate health and wellness programs, health and physical education teaching, exercise physiology teaching and research, 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. In addition, this program track 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)

#### **Education Track: Health and Physical Education**

The Colleges range of education programs allows students who are planning a career in teaching to complete the first two years of a transfer program and earn an associate in science degree whether they plan to teach in elementary or secondary schools. All students should be aware of the standards outlined by the Pennsylvania Department of Education and how they specify different preparations for elementary and secondary school teachers.

Students intending to transfer must have a 3.0 GPA in order to enter the professional-level course work (that leads to teacher certification) at a baccalaureate degree-granting institution. Students are also required to attain a qualifying score on the Pre-Service Academic Program Assessment (PAPA) test before transferring can occur.

Each student is required to have an ACT 34 Criminal Background Investigation and an ACT 151 Child Abuse Clearance prior to any practicum/student teaching experience and employment. The student should consider these factors prior to enrolling into this program.

Since the requirements of 4-year colleges/universities 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 entire program is available at the Harrisburg Campus. Some of the required courses are available at the Gettysburg, Lancaster, Lebanon, and York campuses.

#### *Career or 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 health /wellness/fitness centers, program instruction and management, personal training (ACSM, ACE, NSCA), corporate health and wellness programs, exercise rehabilitation programs, adult fitness and 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.
- Write and speak effectively
- Appreciate accomplishments in the arts and sciences

# Academic Programs

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 61)

General Education		Major Requirements	
ENGL 101 English Composition I	3	BIOL 121 Anatomy and Physiology I	4
ENGL 102 English Composition II	3	EXSC 102 Introduction to Exercise Science	3
COMM 101 Effective Speaking (or)	3	EXSC 202 Functional Anatomy & Exercise Phys	3
COMM 203 Interpersonal Communication	(3)	EXSC 203 Exercise Testing & Measurement	3
Core A Elective	3	EXSC 206 Exercise Prescription	3
Core B (Recommend: SOCI 201) (D)	3	EXSC 208 Methods of Instruction & Personal Training	3
Core B Elective	3	HLTH 101 Healthful Living	3
Core C MATH Elective	3	PE 201 Living Fit and Well	3
Core C Elective	3	NUTR 104 Nutrition <b>or</b>	3
*Core C Science Elective	3	EDUC 110 The Education Professional	(3)
General Education Transfer Elective	3	Program Specific Elective ***	<u>2</u>
**Physical Education & Wellness	<u>1</u>		30
	31		

\*Recommend: CHEM 100; PHYS 105; MATH 103

\*\*Recommend: PE 130, 169, 178, 179, 180, 181, 182, 183, 184

\*\*\* Select program specific elective from the following: BIOL 122; CIS 108; EDUC 203; GERT 100, 201; MATH 202; PE 130, 169, 178, 179, 180, 181, 182, 183, 184; 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		Spring Semester		Fall Semester		Spring Semester	
BIOL 121	4	Core C (Science)	3	COMM 101 <b>or</b> 203	3	Core B Elective	3
Core C (Math)	3	ENGL 102	3	Core A Elective	3	Core C Elective	3
ENGL 101	3	EXSC 202	3	Core B Elective	3	EXSC 206	3
EXSC 102	3	HLTH 101	3	EXSC 203	3	EXSC 208	3
PE 201	3	NUTR 104 <b>or</b> EDUC 110	3	Gen. Ed. Transfer Elective	3	Program Electives	2
		PE & Wellness	1				

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## FIRE SCIENCE TECHNOLOGY, Associate in Arts Career Degree - 6630

*Engineering & Technology Department*

The Fire Science Technology AA 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 Model for Professional Development. The complete program is available at the Harrisburg and Lancaster campuses. Some of the required courses are available at the York 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
- Write and speak effectively
- Appreciate accomplishments in the arts and sciences

### **PROGRAM REQUIREMENTS (TOTAL CREDITS = 61)**

<b>General Education</b>		<b>Major Requirements</b>		<b>Other Required Courses</b>	
ENGL 101 English Composition I	3	FIRE 101 Principles of Emergency Services	3	CIS 105 Intro to Software for Business	3
ENGL 104 Technical Writing	3	FIRE 102 Fire Prevention	3		
COMM 101 Effective Speaking (or)	3	FIRE 103 Principles of Fire & Emergency Services Safety and Survival	3		
COMM 203 Interpersonal Communication	(3)	FIRE 105 Building Construction for Fire Protection	3		
Core A Elective	3	FIRE 106 Fire Behavior and Combustion	3		
Core B Elective	3	FIRE 201 Fire Protection Hydraulics & Water Supply	3		
Core C Elective	3	FIRE 202 Hazardous Materials Chemistry	3		
Free Elective	3	FIRE 203 Fire Protection Systems	3		
Physical Education & Wellness	<u>1</u>	FIRE 204 Fire Investigation I	3		
	22	FIRE 207 Educational Methodology	3		
		FIRE 209 Fire & Emergency Services Administration	3		
		FIRE 210 Strategy and Tactics	<u>3</u>		
			36		

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

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

<b>Fall Semester</b>		<b>Spring Semester</b>		<b>Fall Semester</b>		<b>Spring Semester</b>	
CIS 105	3	COMM 101 or 203	3	Core A Elective	3	Core B Elective	3
ENGL 101	3	ENGL 104	3	FIRE 201	3	Core C Elective	3
FIRE 101	3	FIRE 103	3	FIRE 202	3	FIRE 204	3
FIRE 102	3	FIRE 105	3	FIRE 209	3	FIRE 207	3
FIRE 106	3	FIRE 203	3	Free Elective	3	FIRE 210	3
						PE & Wellness	1

*Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.*

# Academic Programs

## FIRE SCIENCE TECHNOLOGY, Certificate Program - 6260

Engineering & Technology Department

CIP Code: 43.0203

The Fire Science Technology Certificate 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 Model for Professional Development. The complete program is available at the Harrisburg and Lancaster campuses.

### 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, underwriters, plan reviewers and code enforcement officers. (SOC Code: 33-2011 Fire Fighters)

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:

- 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
- Write and speak effectively

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 39)

General Education		Major Requirements	
ENGL 104 Technical Writing	3	FIRE 101 Principles of Emergency Services	3
		FIRE 102 Fire Prevention	3
		FIRE 103 Principles of Fire & Emergency Services Safety & Survival	3
		FIRE 105 Building Construction for Fire Protection	3
		FIRE 106 Fire Behavior and Combustion	3
		FIRE 201 Fire Protection Hydraulics & Water Supply	3
		FIRE 202 Hazardous Materials Chemistry	3
		FIRE 203 Fire Protection Systems	3
		FIRE 204 Fire Investigation I	3
		FIRE 207 Educational Methodology	3
		FIRE 209 Fire & Emergency Services Administration	3
		FIRE 210 Strategy and Tactics	3
			<u>36</u>

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

# Academic Programs

## GENERAL STUDIES, Career or Transfer Degree – 7660

### *Academic Affairs & Enrollment Management*

The General Studies curriculum is designed to meet academic needs not answered by more specific program offerings. Students interested in interdisciplinary study, specially designed programs of study not available in regular programs, or who are undecided as to career or transfer 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 transfer or career needs are met.

Students must select courses in the Humanities and Arts, Social and Behavioral Sciences, and Mathematics, Natural and Physical Sciences, Diversity, and Physical Education and Wellness, in addition to the College's requirement in written and oral communication. In addition, students are able to select 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 apply to transfer requirements or meet career program requirements. 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. Many students enrolled in the General Studies curriculum are first advised by counseling staff at HACC's campuses. But as students discover areas of interest, they are advised by faculty in the discipline of their interest.

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 six major areas of general education (Oral and Written Communication; Quantitative, Information, and Technology Literacy; 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; and acknowledge the use of information sources, according to convention
- Generate a new idea or artifact by combining, changing, or reapplying existing ideas or products
- Demonstrate the ability to communicate, create, and collaborate effectively using technologies in multiple modalities
- 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
- Demonstrate the ability to find, evaluate, organize and use information effectively and ethically

### **PROGRAM REQUIREMENTS (TOTAL CREDITS = 61)**

<b>General Education</b>		<b>Major Requirements</b>	
ENGL 101 English Composition I	3	Program Electives*	30
ENGL 102 English Composition II (or)	3	CIS 105 Introduction to Software for Business or higher.	<u>3</u>
ENGL 104 Technical Writing (or)	(3)	Or, other curriculum approved Computer Literacy Course**	33
ENGL 106 Business Writing	(3)		
COMM 101 Effective Speaking (or)	3		
COMM 203 Interpersonal Communication	(3)		
Core A Elective	6		
Core B Elective	6		
Core C Elective	6		
Physical Education & Wellness	<u>1</u>		
	28		

\* Students must choose any 100- or 200- level courses so long as they do not violate the credit limits on courses in physical education or cooperative work experience. Students who wish for maximum transferability of their coursework should select electives that are acceptable for credit at the baccalaureate institution to which they plan to transfer.

\*\*See an advisor for course selection options.

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## GEOSPATIAL TECHNOLOGY, Associate in Science Career Degree - 4760

Engineering & Technology Department

HACC's Geospatial AS degree program provides foundation preparation for a student planning a career in geospatial technology, or supplemental preparation of a person already employed in a career related to geospatial technology. Geospatial technology is an emerging growth industry requiring technicians to be skilled in data acquisition, management, interpretation, integration, analysis, representation, and graphical display. 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. The complete program is available at the Harrisburg Campus. Some required courses are available at the Gettysburg, Lancaster, Lebanon, and York campuses, as well as through Virtual Learning.

### Career Opportunities

Graduates with a Geospatial Technology AS degree find employment as geographic information specialists, CAD specialists, or other disciplines related to the acquisition, use and processing of geographic and time-based data

### Competency Profile

This curriculum is designed to prepare students to:

- Use CAD software packages
- Understand Geographic Information System (GIS) and remote sensing theory, data acquisition, data processing, and applications
- Use GIS software packages and geospatial data processing tools
- Understand engineering, geological, and environmental applications of geospatial technologies
- Develop analytical skills, including inductive and deductive reasoning
- Write and speak effectively
- Use those strengthened written and oral communication skills and interpersonal characteristics for effective business opportunities and personal growth
- Understand 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
- Provide an educational experience that allows the student to effectively interact with others outside the geospatial technology discipline
- 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	CAD 115 MicroStation I	1	CIS 105 Intro to Software for Business	3
ENGL 104 Technical Writing	3	CAD 125 MicroStation II	1	CIS 140 Intermediate Database Management	3
COMM 101 Effective Speaking	3	CAD 156 AutoCAD for Architecture	3	MATH 103 College Algebra	3
Core A Elective	3	CPS 115 Visual Basic Programming I (or)	3	MATH 104 Trigonometry	3
Core B (Recommend: GEOG 201[D])	3	CPS 121 Intro to JAVA Programming (or)	(3)	MGMT 201 Principles of Management	3
Free Elective	3	CIS 238 Visual Basic for Bus Applications	(3)	MKTG 201 Principles of Marketing	3
Physical Education & Wellness	1	GEOL 201 Environmental Geology	4		18
	19	GIS 141 Intro to Geographic Information Systems	3		
		GIS 151 Cartographic Design for GIS	3		
		GIS 161 Data Acquisition and Remote Sensing	4		
		GIS 163 Adv Geographic Information Systems	4		
		GIS 201 Professional Issues	1		
		GIS 291 Cooperative Work Experience	3		
			30		

### 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 III	Fall Semester IV	Spring Semester V	Summer VI
CAD 156 3	CAD 115 1	Core A Elective 3	CIS 140 3	Core B Elective 3	GIS 291 3
CIS 105 3	CAD 125 1		COMM 203 or 101 3	Free Elective 3	
ENGL 101 3	ENGL 104 3		CPS 115 or 121 or CIS 238 3	GIS 163 4	
GIS 141 3	GIS 151 3		GEOL 201 4	GIS 201 1	
MATH 103 3	MATH 104 3		GIS 161 4	MKTG 201 3	
	MGMT 201 3				
	PE & Wellness 1				

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## GEOSPATIAL TECHNOLOGY, Certificate Program - 4410

Engineering & Technology Department

CIP Code: 45.0702

HACC's Geospatial Technology Certificate program provides foundation preparation for a student planning a career in geospatial technology, or supplemental preparation of a person already employed in a career related to geospatial technology. Geospatial technology is an emerging growth industry requiring technicians to be skilled in data acquisition, management, interpretation, integration, analysis, representation, and graphical display. 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. The complete program is available at the Harrisburg Campus. Some required courses are available at the Lebanon Campus, as well as through Virtual Learning.

### Career Opportunities

Graduates with a Geospatial Technology Certificate find employment as geographic information specialists, CAD specialists, or other disciplines related to the acquisition, use and processing of geographic and time-based data.

(SOC Code: 17-1021 Cartographers and Photogrammetrists)

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 CAD software packages
- Understand Geographic Information System (GIS) and remote sensing theory, data acquisition, data processing, and applications
- Use GIS software packages and geospatial data processing tools
- Understand engineering, geological, and environmental applications of geospatial technologies

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 34)

#### General Education

#### Major Requirements

CAD 156 AutoCAD for Architecture	3
CPS 115 Visual Basic Programming I (or)	3
CPS 121 Introduction to JAVA (or)	(3)
CIS 238 Visual Basic for Business Applications	(3)
GEOL 201 Environmental Geology	4
GIS 141 Intro to Geographic Information Systems	3
GIS 151 Cartographic Design for GIS	3
GIS 161 Data Acquisition & Remote Sensing	4
GIS 163 Advanced Geographic Information Systems	4
GIS 201 Professional Issues	1

#### Other Required Courses

CIS 105 Intro to Software for Business	3
MATH 103 College Algebra	3
MGMT 201 Principles of Management (or)	(3)
MKTG 201 Principles of Marketing	3
	<u>9</u>

25

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

# Academic Programs

## GEOSPATIAL TECHNOLOGY, Diploma Program - 0580

Engineering & Technology Department

CIP Code: 45.0702

HACC's Geospatial Technology diploma program provides foundation preparation for a student planning a career in geospatial technology, or supplemental preparation of a person already employed in a career related to geospatial technology. Geospatial technology is an emerging growth industry requiring technicians to be skilled in data acquisition, management, interpretation, integration, analysis, representation, and graphical display. 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. The complete program is available at the Harrisburg Campus and 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: 17-1021 Cartographers and Photogrammetrists)

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:

- Understand Geographic Information Systems (GIS) and remote sensing theory, data acquisition, data processing, and applications
- Use GIS software packages and geospatial data processing tools
- Understand engineering, geological, and environmental applications of geospatial technologies

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 18)

General Education	Major Requirements	
	GIS 141 Intro to Geographic Information Systems	3
	GIS 151 Cartographic Design for GIS	3
	GIS 161 Data Acquisition & Remote Sensing	4
	GIS 163 Advanced Geographic Information Systems	4
	GIS 201 Professional Issues	1
	*Program Elective	<u>3</u>
		18

\*Select one course from the following: CIS 140; CPS 115, 121; WEB 125, 130, 135, and 138.

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

# Academic Programs

## GERONTOLOGY, Associate in Arts Career Degree - 3470

*Health & Public Service Department*

The Gerontology Associate in Arts degree program builds upon the coursework of the Gerontology Certificate as it adds in-depth study of international aging, gender and aging, and long-term care leadership and management. The program is designed to expand the knowledge and opportunities for employment for those exploring or working in the aging field. Coursework in business, nutrition, life cycle development, psychology and sociology aids students in obtaining general concepts and practices in aging with additional courses in business, nutrition, life cycle development, psychology, and sociology. Students also have the opportunity to work with an elderly person and explore various careers in aging. This program is offered entirely through Virtual Learning.

### *Career Opportunities*

Graduates are prepared for entry-level positions in aging-related services such as social services; activity/recreation professionals; allied health professionals; long-term care and health care administration; marketing and business; volunteer programs; community, human services, and religious organizations; government agencies; retirement communities; academic and research settings; and professional organizations. Graduates may also 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:

- 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)**

<b>General Education</b>		<b>Major Requirements</b>		<b>Other Required Courses</b>	
ENGL 101 English Composition I	3	GERT 100 Gerontology Overview	1	BUSI 101 Introduction to Business	3
ENGL 102 English Composition II	3	GERT 101 Social Services	1	NUTR 104 Nutrition	3
COMM 101 Effective Speaking	3	GERT 102 Allied Health	1	PSYC 101 General Psychology	3
Core A Elective	3	GERT 103 Psychosocial Issues	1	PSYC 209 Life Cycle Development	3
Core B Elective	3	GERT 104 Service Learning	1	SOCI 201 Introduction to Sociology	3
Core C Elective	3	GERT 105 Careers in Gerontology	1		15
Free Elective	3	GERT 200 Legal and Ethical Aspects of Aging	3		
Physical Education & Wellness	1	GERT 201 Social Aspects of Aging	3		
	22	GERT 211 Women and Aging	3		
		GERT 215 Aging Around the World	3		
		GERT 225 Long-Term Care Leadership & Management	3		
		GERT 232 Death and Dying	3		
			24		

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

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

<b>Fall Semester</b>		<b>Spring Semester</b>		<b>Fall Semester</b>		<b>Spring Semester</b>	
ENGL 101	3	Core A Elective	3	BUSI 101	3	Core B Elective	3
GERT 100	1	ENGL 102	3	COMM 101	3	Core C Elective	3
GERT 101	1	GERT 200	3	GERT 201	3	GERT 104	1
GERT 102	1	GERT 232	3	GERT 211	3	GERT 105	1
GERT 103	1	PSYC 209	3	GERT 225	3	GERT 215	3
NUTR 104	3					Free Elective	3
PSYC 101	3					PE & Wellness	1
SOCI 201 (D)	3						

*Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.*

# Academic Programs

## GERONTOLOGY, Certificate Program - 3300

Health & Public Service Department

CIP Code: 19.0702

This certificate builds on the coursework of the Gerontology diploma and adds in-depth study of legal and ethical issues as well as of the psychological and emotional aspects of aging. This program provides basic knowledge of general concepts and practices in gerontology for a significant number of fields – social service, activity professionals, allied health professions, health care administration, marketing and business. The program is offered primarily online through Virtual Learning. Some required courses are available at all of HACC's campuses.

### 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 activity professionals and work toward national certification. They may also work in social services, health care administration and allied health fields as well as marketing and business. Graduates may also pursue further academic study in social work, health care management, liberal arts, and business degrees.

(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:

- 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
- Explore opportunities for further study and workforce development in gerontology fields
- 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
Physical Education & Wellness	1	GERT 101 Social Services	1	SOCI 201 Introduction to Sociology	3
	4	GERT 102 Allied Health	1	General Elective	3
		GERT 103 Psychosocial Issues	1	*Program Elective	3
		GERT 104 Service Learning	1		12
		GERT 200 Legal and Ethical Aspects of Aging	3		
		GERT 201 Social Aspects of Aging	3		
		GERT 232 Death and Dying	3		
			14		

\*Select courses from GERT, SOCI, PSYC.

\*\*A grade of C or higher is required in all GERT and ENGL courses

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

# Academic Programs

## GERONTOLOGY, Diploma Program - 0231

Health & Public Service Department

CIP Code: 19.0702

The Gerontology Diploma is designed to develop sensitivity and competence for those individuals in allied health, social services, activities professional, business, marketing and administrative fields who work with the aging population. The course content includes basic principles and issues in gerontology, allied health, social service, mental health, psychosocial and wellness as well as 20 hours of service learning volunteering. The program is offered at the Harrisburg Campus and through Virtual Learning. Some required courses are available at the Gettysburg, Lancaster, Lebanon, and York campuses.

### Career Opportunities

The diploma program is designed to further enhance knowledge and effectiveness of personnel currently employed in senior facilities. Graduates find employment as activity professionals, Home Health Aides, Personal Care/Direct Care Workers, or Social Service Aides. Additionally, many graduates go on to obtain a Gerontology Certificate and/or pursue further study in a number of related areas, such as nursing, allied health, social work, marketing, and management in institutions, agencies, long-term care and assisted-care facilities, and home health. (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:

- 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
- Explore opportunities for further study and workforce development in gerontology fields

### 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	<u>3</u>
		GERT 102 Allied Health	1		6
		GERT 103 Psychosocial Issues	1		
		GERT 104 Service Learning	1		
		GERT 232 Death & Dying <b>or</b>	3		
		Gerontology Elective	<u>(3)</u>		
			8		

Note: A grade of C or higher is required in all GERT and ENGL courses.

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

# Academic Programs

## HEALTH CARE MANAGEMENT, Associate in Arts Career Degree - 3600

*Business Studies Department*

Students prepare for entry-level management positions within the healthcare industry. Students apply management, marketing, and accounting principles relative to the healthcare environment. The complete program is available at the Harrisburg and Lancaster campuses. The program may also be completed at the Gettysburg Campus by taking some online courses. Some of the required courses are available at the Lebanon and York campuses, as well as 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 business management situations through physical or virtual presence, writing, speaking, listening, and electronic media
- Use quantitative and qualitative tools and methodologies to support business management and organizational decision making
- Describe economic, environmental, political, ethical, legal, and regulatory contexts of global organizational management policies
- Evaluate potential for business success and consider implantation issues including financial, legal, operational, and administrative procedures
- Identify business management problems and opportunities and formulate an action plan
- Manage using team building skills and facilitate collaborative behaviors 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
- Analyze the information content of organizational processes and use information technology
- Utilize research methods to collect and analyze information regarding management concepts

### **PROGRAM REQUIREMENTS (TOTAL CREDITS = 63)**

<b>General Education</b>		<b>Major Requirements</b>	
ENGL 101 English Composition I	3	ACCT 101 Principles of Accounting I	4
ENGL 102 English Composition II (or)	3	ACCT 200 Principles of Accounting II	4
ENGL 106 Business Writing	(3)	AH 210 Health Care Law & Ethics	3
COMM 101 Effective Speaking	3	AH 213 Intro to Medical Insurance	3
Core A Elective	3	BIOL 105 Medical Terminology	3
Core B Elective	3	BIOL 111 Intro to Human Biology (or)	3
Core C Elective	3	BIOL 121 Anatomy & Physiology	(4)
Free Elective (Recommend: AH 150)	3	BUSI 101 Introduction to Business	3
Physical Education & Wellness	1	CIS 105 Intro to Software for Business	3
	22	MATH 100* College Math for Business	3
		MGMT 130 Intro to Healthcare Management	3
		MGMT 201 Principles of Management	3
		MGMT 203 Human resources Management	3
		MKTG 201 Principles of Marketing	3
			<u>41</u>

\*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.

<b>Fall Semester</b>		<b>Spring Semester</b>		<b>Fall Semester</b>		<b>Spring Semester</b>	
ACCT 101	4	ACCT 200	4	AH 213	3	AH 210	3
BUSI 101	3	BIOL 111 or 121	3 or 4	COMM 101	3	Core B Elective	3
CIS 105	3	BIOL 105	3	Core A Elective	3	Core C Elective	3
ENGL 101	3	ENGL 102 or 106	3	MATH 100 or higher	3	Free Elective	3
MGMT 130	3	MGMT 201	3	MKTG 201	3	MGMT 203	3
				PE & Wellness	1		

*Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.*

# Academic Programs

## HEALTH SCIENCE, Associate in Science Career Degree - 3590

*Health & Public Service Department*

The Health Science AS 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 five areas of concentration: Management/Marketing, Information Technology, Social Services, Radiologic 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 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.** All of the options within this program are available at one or more of the College's campus locations, as well as through Virtual Learning. 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 [healthcareers@hacc.edu](mailto:healthcareers@hacc.edu). Or, call us at (717) 780-1992, or (800) 222-4222 extension 211992 for specific information on program entry requirements.

### *Career Opportunities*

Graduates are qualified to seek employment in the Management/Marketing, Information Technology, Radiologic Imaging, or Social Services 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:

#### **Management/Marketing Option**

- Demonstrate competencies needed to gain employment in the physician practices, hospitals, or with 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
- Appreciate accomplishments in the arts and sciences

#### **Information Technology Option**

- Use professionally developed computer software
- Recognize software as a communication tool in a business environment
- Adapt to changing computer software and hardware environments
- Apply software skills to produce business documents
- Research using the Internet
- Implement up-to-date technologies and procedures
- Write and speak effectively
- Appreciate accomplishments in the arts and sciences

#### **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
- Appreciate accomplishments in the arts and sciences

#### **Social Service Option**

- Demonstrate competencies needed to gain employment in the physician practices, hospitals, or with vendors in the medical area
- Recognize race and cultural relations as they relate to the healthcare area
- Demonstrate life cycle development in a variety of patient populations
- Write and speak effectively
- Appreciate accomplishments in the arts and sciences

# Academic Programs

## 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
- Appreciate accomplishments in the arts and sciences

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 61)

General Education		Major Requirements	
ENGL 101 English Composition I	3	Block Transfer	30*
ENGL 102 English Composition II	3	**Option	<u>12</u>
COMM 101 Effective Speaking (or)	3		42
COMM 203 Interpersonal Communication	(3)		
Core A Elective	3		
Core B Elective	3		
Free Elective (Recommend: CIS 105)	3		
Physical Education & Wellness	<u>1</u>		
	19		

Note: All courses listed in the program options must be completed with at least a grade of C.

\*\*Choose 12 credits from one of the five options listed below:

Management/Marketing Option		12	Information Technology Option		12
ACCT 101 Principles of Accounting I	4		AOS 202 Project Management	3	
AH 210 Health Care Law & Ethics (or)	3		CIS 105 Intro to Software for Business	3	
BUSI 201 Business Law I (or)	(3)		CIS 108 Introduction to Power Point	1	
BUSI 209 Legal Environment of Business	(3)		CIS 110 Introduction to Computer Systems	3	
AH 213 Introduction to Medical Insurance	3		CIS 135 Intermediate Spreadsheet Application	3	
MGMT 201 Principles of Management	3		CIS 140 Intermediate Database Management	3	
MGMT 203 Human Resources Mgmt	3		CIS 207 Desktop Publishing	3	
MGMT 204 Human Relations In Business	3		CNT 120 Network Communications I	3	
MGMT 226 Principles of Leadership	3		WEB 102 Internet & Web Design	3	
MKTG 201 Principles of Marketing	3				

Note: All students must take AH 210 or BUSI 201 or 209.

Social Service Option		12	Gerontology Option		12
AH 210 Health Care Law & Ethics	3		Any GERT course		
HUMS 100 Intro to Human Services	3				
HUMS 108 Drug & Alcohol: Use & Abuse	3				
HUMS 109 Drug & Alcohol: Issues & Treatment	3		<b>Radiologic Imaging Option</b>		12
HUMS 206 Human Development in a Social Environment	3		Any RADT course 220 or above.		
PSYC 209 Life Cycle Development	3		(These courses are restricted to students who		
PSYC 212 Child Growth & Development	3		possess, or are eligible to sit for, a primary		
PSYC 213 Abnormal Psychology	3		certification from an approved medical imaging		
PSYC 221 Social Psychology	3		board.)		
PSYC 229 Multicultural Psychology	3				
SOCI 201 Introduction to Sociology (D)	3				
SOCI 202 Social Problems	3				
SOCI 203 Marriage & Family	3				
SOCI 205 Race and Cultural Relations (D)	3				

## 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	ENGL 102	3	Course Options	6	Course Options	6
COMM 101 or 203	3	Free Elective	3				
Core A Elective	3	PE & Wellness	1				
Core B Elective	3						

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## HEATING, VENTILATION, AND AIR CONDITIONING - HVAC, Associate in Applied Science Career Degree – 4780

Engineering & Technology Department

The Heating, Ventilation and Air Conditioning (HVAC) 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 Harrisburg Campus's Midtown II location and the York Campus. Some required courses may be available at the Gettysburg and Lebanon campuses. 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
- Write and speak effectively
- Appreciate accomplishments in the arts and sciences

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 66)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	HVAC 100 EPA Refrigerant Handling, Preparation, & Testing	1	GTEC 105 Customer Service	1
ENGL 102 English Composition II (or)	3	HVAC 101 Basic Electrical Fundamentals (or)	4	GTEC 110 Construction Print Reading	3
ENGL 104 Technical Writing	(3)	ELOC 153 Fundamentals of Electricity	(4)	*MATH 161 Technical Math for General Technology	3
COMM 101 Effective Speaking (or)	3	HVAC 102 R410A-Safety & Handling	1	**HVAC Required Electives	9
COMM 203 Interpersonal Communication	(3)	HVAC 103 Fundamentals of Air Conditioning I	4	***Program Specific Electives	6
Core A Elective	3	HVAC 105 Fundamentals of Air Conditioning II	4		22
Core B Elective	3	HVAC 107 Fundamentals of Low & Medium Temperature Refrigeration	4		
Core C Elective	3	HVAC 109 Heating Systems	4		
Free Elective	3				
Physical Education & Wellness	1				
	22		22		

\*May be replaced with a higher level Math offering.

\*\*Select from the following courses: HVAC 110, 200, 201, and HBR 130.

\*\*\*Select from the following disciplines: BUSI, CARP, CIS, ELEC, ELOC, HBR, GREN, IA, IMT, MGMT, MWT, 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		Spring Semester		Fall Semester		Spring Semester	
ENGL 101	3	Core A Elective	3	COMM 101 or 203	3	Core B Elective	3
GTEC 110	3	ENGL 102 or 104	3	Core A Elective	3	Core C Elective	3
HVAC 101 or ELOC 153	4	HVAC 105	4	HVAC 100	1	Free Elective	3
HVAC 103	4	HVAC 109	4	HVAC 102	1	GTEC 105	1
MATH 161	3	Program Specific Elective	3	HVAC 107	4	HVAC Required Elective	3
PE & Wellness	1			HVAC Required Elective	6		
				Program Specific Elective	3		

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## HEATING, VENTILATION, AND AIR CONDITIONING - HVAC, Certificate Program - 4280

Engineering & Technology Department

CIP Code: 47.0201

This certificate builds upon the skills and competencies covered in the diploma program as it introduces students to the 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. Higher level mathematics and communication courses are incorporated into the curricula to support the competencies covered. The complete program is available at the Harrisburg Campus’s Midtown II location and the York Campus. Some of the required courses are available at the Lebanon 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 = 35)

General Education	Major Requirements	Other Required Courses
ENGL 101 English Composition I 3	HVAC 100 EPA Refrigerant Handling, 1	GTEC 105 Customer Service 1
	HVAC 101 Basic Electrical Fundamentals (or) 4	GTEC 110 Construction Print Reading 3
	ELOC 153 Fundamentals of Electricity (4)	*MATH 161 Technical Math for General Tech 3
	HVAC 102 R410-Safety & Handling 1	**HVAC Program Elective <u>3</u>
	HVAC 103 Fundamentals of Air Conditioning I 4	10
	HVAC 105 Fundamentals of Air Conditioning II 4	
	HVAC 107 Fundamentals of Low & Medium Temperature Refrigeration 4	
	HVAC 109 Heating Systems 4	
		22

\*May be replaced with a higher level Math offering.

\*\*Select one course from the following: HVAC 110, 200; HBR 130.

### 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
ENGL 101 3	GTEC 105 1
GTEC 110 3	HVAC 100 1
HVAC 101 or ELOC 153 4	HVAC 102 1
HVAC 103 4	HVAC 105 4
MATH 161 3	HVAC 107 4
MATH 161 3	HVAC 109 4
	Program Elective 3

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

# Academic Programs

## HEATING, VENTILATION, AND AIR CONDITIONING - HVAC, Diploma Program - 0280

Engineering & Technology Department

CIP Code: 47.0201

The diploma program 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's Midtown II location and at the York Campus. Some of the required courses are available at the Lebanon 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 = 25)

General Education	Major Requirements		Other Required Courses	
	HVAC 100 EPA Refrigerant Handling, Preparation & Testing	1	ENGL 901 Basic Communication*	1
	HVAC 101 Basic Electrical Fundamentals (or)	4	MATH 161 Technical Math for General Tech	3
	ELOC 153 Fundamentals of Electricity	(4)		4
	HVAC 103 Fundamentals of Air Conditioning I	4		
	HVAC 105 Fundamentals of Air Conditioning II	4		
	HVAC 107 Fundamentals of Low & Medium Temp Refrigeration	4		
	HVAC 109 Heating Systems	4		
		21		

\*May be replaced with a higher level offering.

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

# Academic Programs

## HOME AND BUILDING REMODELING, Associate in Applied Science Career Degree - 4790

Engineering & Technology Department

Students complete the Home and Building Remodeling certificate and are able to continue their studies to obtain an associate in applied science degree. The degree program delivers introductory training in a wide variety of applications in home and building remodeling. At the same time, students engage in simulated work activities involving remodeling, or restoration of existing structures.

To meet their unique career goals, students select technical elective courses that develop specialized skills in such disciplines as exterior finishing, electrical wiring, plumbing, customer service, and air conditioning systems. The program can be completed at the Harrisburg Campus's Midtown location. Some of the required courses are available at the York Campus.

### 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.

### 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 skills in work application
- Solve math problems related to the trade
- Write and speak effectively
- Appreciate accomplishments in arts and sciences

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 65)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	ARCH 130 Construction Materials & Methods	3	*MATH 161 Technical Math for General Tech	3
ENGL 104 Technical Writing	3	CARP 110 Carpentry Fundamentals	3	**Technical Electives	9
COMM 203 Interpersonal Communication	3	CARP 130 Floor, Wall, & Roof Framing	3		12
Core A Elective	3	CARP 150 Interior Finishing I	3	<i>*May be replaced by a higher level Math.</i>	
Core B Elective	3	ELOC 153 Fundamentals of Electricity	4	<i>**Select technical electives from the</i>	
Core C Elective	3	GTEC 101 Safety: OSHA-30 & NFPA-70E	3	<i>following courses: CVTE 103; ELOC 157,</i>	
Free Elective	3	GTEC 110 Construction Print Reading	3	<i>163, 172; GTEC 105; HBR 135, 137;</i>	
Physical Education & Wellness	1	HBR 130 Plumbing I	3	<i>HVAC 103, 109; and WELD 111.</i>	
	22	HBR 140 Intro to Masonry: Laying Brick & Concrete Block	3		
		WOOD 102 Woodworking II	3		
			3		
			31		

### 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	Summer Semester	Fall Semester	Spring Semester
CARP 110	3	ARCH 130	3	Free Elective
ENGL 101	3	CARP 130	3	PE & Wellness
GTEC 101	3	ELOC 153	4	CARP 150
GTEC 110	3	HBR 130	3	COMM 203
MATH 161	3	ENGL 104	3	Core A Elective
				HBR 140
				WOOD 102
				Core B Elective
				Core C Elective
				Technical Electives
				3
				3
				9

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## HOME AND BUILDING REMODELING, Certificate Program - 4430

Engineering & Technology Department

CIP Code: 46.0000

Students complete the Home and Building Remodeling diploma and are able to continue their studies to obtain a certificate. The certificate program delivers introductory training in construction materials and processes, while providing 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. All course work and laboratory practice is held 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 = 34)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	CARP 110 Carpentry Fundamentals	3	**MATH 161 Technical Math for General Technology	3
		CARP 130 Floor, Wall, & Roof Framing	3		
		CARP 150 Interior Finishing I	3		
		ELOC 153 Fundamentals of Electricity	4		
		GTEC 101 Safety: OSHA-30 & NFPA-70E	3		
		GTEC 110 Construction Print Reading	3		
		HBR 130 Plumbing I	3		
		*Technical Electives	6		
			28		

\*Select technical electives from the following courses: CVTE 103; ELOC 157, 172; GTEC 105; HBR 135, 140; HVAC 109; and WELD 111.

\*\* May be replaced with a higher level Math.

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

# Academic Programs

## HOME AND BUILDING REMODELING, Diploma Program - 0290

Engineering & Technology Department

CIP Code: 46.0000

This diploma program helps students develop job-entry skills for the home and building remodeling industry. These skills include construction print reading; use of basic tools and equipment; carpentry techniques; and workplace safety. All course work and laboratory practice is held at Harrisburg Campus's Midtown location.

### Career Opportunities

Graduates of the program find employment with local remodeling and construction contractors as construction helpers, laborers, and rough carpenters. (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 skills work applications
- Solve math problems related to the trade

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 22)

#### General Education

#### Major Requirements

#### Other Required Courses

CARP 110 Carpentry Fundamentals	3
CARP 130 Floor, Wall, and Roof Framing	3
CARP 150 Interior Finishing I	3
ELOC 153 Fundamentals of Electricity	4
GTEC 101 Safety: OSHA-30 & NFPA 70-E	3
HBR 130 Plumbing I	3
	19

MATH 161 Technical Math for Gen Tech	3
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Please see the College's website at <http://www.hacc.edu/ProgramsandCourses/index.cfm> for the most current Gainful Employment Information.

# Academic Programs

## HOSPITALITY & TOURISM MANAGEMENT, Associate in Arts Career Degree - 1901

*Business Studies Department*

The Hospitality and Tourism Management 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. The complete Hospitality and Tourism Management concentration is only available at the Harrisburg campus. Some of the required courses are available at the Gettysburg, Lancaster, Lebanon, and York campuses, as well as through Virtual Learning.

### *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
- Write and speak effectively
- Recognize how specialized training fits into the larger management and societal context

### **PROGRAM REQUIREMENTS (TOTAL CREDITS = 68)**

<b>General Education</b>		<b>Major Requirements</b>		<b>Other Required Courses</b>	
ENGL 101 English Composition I	3	HTMT 101 Intro to Hospitality & Tourism Industry	3	CIS 105 Intro to Software for Business	3
ENGL 102 English Composition II (or)	3	HTMT 154 Supervisory Housekeeping	3		
ENGL 104 Technical Writing (or)	(3)	HTMT 201 Tourism: Theories & Practices	3		
ENGL 106 Business Writing	(3)	HTMT 212 Front Office Operations & Management	3		
COMM 101 Effective Speaking (or)	3	HTMT 213 Marketing: Hospitality & Tourism	3		
COMM 203 Interpersonal Communication	(3)	HTMT 225 Destination Geography	3		
Core A Elective	3	HTMT 251 Hospitality Supervision	3		
Core B Elective	3	HTMT 270 Convention & Event Management	3		
Core C Elective	3		24		
Free Elective	3				
Physical Education & Wellness	1				
	22				
<b>Restaurant/Food Service Management Option</b>		<b>Hotel &amp; Lodging Management Option</b>		<b>Tourism, Convention &amp; Event Management Option</b>	
CULI 100 The World of Wine	1	CULI 100 The World Of Wine	1	CULI 100 The World of Wine	1
CULI 113 Sanitation & Safety	2	CULI 113 Sanitation & Safety	2	HTMT 202 Principles of Travel Selling	3
CULI 221 Basic Foods: Preparation & Production	4	CULI 221 Basic Foods: Preparation & Production	4	HTMT 203 Group Travel Planning	3
HTMT 104 Nutrition for Food Service	3	HTMT 202 Principles of Travel Selling	3	HTMT 269 Hospitality Industry Computer Systems	3
HTMT 125 Dining Room Management	3	HTMT 231 Cost Control: Food, Beverage, & Labor	3	HTMT 279 Travel Reservation Systems	3
HTMT 231 Cost Control: Food, Beverage & Labor	3	HTMT 269 Hospitality Industry Computer Systems	3	MGMT 221 Small Business Development & Management	3
HTMT 278 Hotel & Lodging Management Coop Seminar & Field Experience	3	HTMT 278 Hotel & Lodging Management Coop Seminar & Field Experience	3	MKTG 212 Professional Selling	3
	19		19		19

# Academic Programs

## 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

Semester I		Semester II		Summer		Semester III		Semester IV	
CIS 105	3	Core B Elective	3	Core C Elective	3	COMM 101 or 203	3	HTMT 125	3
CULI 113	2	ENGL 102, 104 or 106	3	HTMT 278	3	CULI 100	1	HTMT 213	3
Core A Elective	3	HTMT 104	3	PE & Wellness	1	CULI 221	4	HTMT 225	3
ENGL 101	3	HTMT 201	3			HTMT 154	3	HTMT 251	3
Free Elective	3	HTMT 212	3			HTMT 231	3	HTMT 270	3
HTMT 101	3								

### Hotel & Lodging Management Option

Semester I		Semester II		Summer		Semester III		Semester IV	
CIS 105	3	Core B Elective	3	Core C Elective	3	COMM 101 or 203	3	HTMT 213	3
Core A Elective	3	ENGL 102, 104 or 106	3	HTMT 278	3	CULI 100	1	HTMT 225	3
CULI 113	2	HTMT 201	3	PE & Wellness	1	CULI 221	4	HTMT 251	3
ENGL 101	3	HTMT 202	3			HTMT 154	3	HTMT 269	3
Free Elective	3	HTMT 212	3			HTMT 231	3	HTMT 270	3
HTMT 101	3								

### Tourism, Convention & Event Management Option

Semester I		Semester II		Summer		Semester III		Semester IV	
CIS 105	3	Core B Elective	3	Core C Elective	3	COMM 101 or 203	3	HTMT 225	3
Core A Elective	3	ENGL 102, 104 or 106	3	Free Elective	3	CULI 100	1	HTMT 269	3
ENGL 101	3	HTMT 201	3	PE & Wellness	1	HTMT 203	3	HTMT 270	3
HTMT 101	3	HTMT 202	3			HTMT 251	3	HTMT 279	3
HTMT 154	3	HTMT 212	3			MKTG 212	3	MGMT 221	3
	3	HTMT 213	3						

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## HOSPITALITY & TOURISM MANAGEMENT, Certificate Program - 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, 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. (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 3
	HTMT 101 Intro to Hospitality & Tourism Industry	
	HTMT 110 Menu Design & Marketing	
	HTMT 213 Marketing: Hospitality & Tourism	
	HTMT 269 Hospitality Industry Computer Systems	
	HTMT 270 Convention & Events Management	
	19	
<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	CULI 113 Sanitation & Safety	HTMT 201 Tourism: Theories & Practices 3
CULI 221 Basic Foods: Preparation & Production	CULI 221 Basic Foods: Preparation & Production	HTMT 202 Principles of Travel Selling 3
HTMT 104 Nutrition for Food Service	HTMT 154 Supervisory Housekeeping	HTMT 203 Group Travel Planning 3
HTMT 125 Dining Room Management	HTMT 201 Tourism: Theories & Practices	HTMT 225 Destination Geography 3
HTMT 231 Cost Control: Food, Beverage & Labor	HTMT 212 Front Office Operations & Management	HTMT 279 Travel Reservation System 3
	15	15

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

# Academic Programs

## HUMAN SERVICES, Associate in Arts Career Degree - 5550

Health & Public Service Department

The Human Services associate degree 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. The Drug and Alcohol Services track is not currently accredited. However, it is the goal of the program to achieve this status at the time of the program's re-accreditation review. 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. The complete program is available at the Harrisburg, Lancaster, and York campuses. Some of the required courses are available at the Gettysburg and Lebanon campuses, as well as 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 alcohol field

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 62)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	HUMS 100 Introduction to Human Services	3	PSYC 101 General Psychology (Core B)	3
ENGL 102 English Composition II	3	HUMS 215 Fieldwork Practicum	4	SOCI 201 Introduction to Sociology (D)	3
COMM 101 Effective Speaking	3		7		6
Core A Elective	3				
Core C Elective	3				
Free Electives	15				
Physical Education & Wellness	1				
	31				
<b>General Human Services Track</b>	<b>18</b>	<b>Drug &amp; Alcohol Track</b>	<b>21</b>		
HUMS 120 Social Welfare Programs & Policies	3	HUMS 108 Drugs & Alcohol: Use & Abuse	3		
HUMS 121 Skills & Methods in Human Services I	3	HUMS 109 Drugs & Alcohol: Issues & Treatment	3		
HUMS 122 Skills & Methods in Human Services II	3	HUMS 216 Crisis & Brief Intervention Counseling	3		
HUMS 200 Group Work Practice	3	HUMS 217 Addictions Counseling Interventions	3		
HUMS 206 Human Development in a Social Environment (D)	3	HUMS 218 Co-Occurring Disorders	3		
SOCI 205 Racial & Cultural Relations (D)	3	HUMS 219 Drug & Alcohol Screening & Assessment	3		
		HUMS 220 Drug & Alcohol Advanced Therapeutic Skills	3		

Note: A grade of C or higher is required for all HUMS, PSYC, and SOCI courses; ENGL 101 and 102; COMM 101.

# Academic Programs

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

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

### **Human Services General - 62 credits**

<b>Semester I</b>		<b>Semester II</b>		<b>Summer</b>		<b>Semester III</b>		<b>Semester IV</b>	
COMM 101	3	Core A Elective	3	Free Elective	3	Free Elective	3	Free Elective	6
Core C elective	3	ENGL 102	3	PE & Wellness	1	HUMS 120	3	HUMS 200	3
ENGL 101	3	Free Elective	3			HUMS 121	3	HUMS 215	4
PSYC 101 (Core B)	3	HUMS 100	3			HUMS 122	3		
SOCI 201 (D)	3	SOCI 205 (D)	3			HUMS 206 (D)	3		

### **Drug and Alcohol Services – 65 credits**

<b>Semester I</b>		<b>Semester II</b>		<b>Summer</b>		<b>Semester III</b>		<b>Semester IV</b>	
COMM 101	3	Core A Elective	3	Free Elective	6	HUMS 109	3	Free Elective	6
Core C Elective	3	ENGL 102	3	PE & Wellness	1	HUMS 216	3	HUMS 220	3
ENGL 101	3	HUMS 100	3			HUMS 217	3	HUMS 215	4
PSYC 101 (Core B)	3	HUMS 108	3			HUMS 218	3		
SOCI 201 (D)	3	Free Elective	3			HUMS 219	3		

*Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.*

# Academic Programs

## HUMAN SERVICES, Certificate Program - 5430

Health & Public Service Department

CIP Code: 44.0000

Students learn the basic knowledge and skills required to work with clients of social service agencies and organizations. Human service professionals work directly with clients and are accurate, reliable, responsible, and self-motivated. In addition, they work well under pressure and possess excellent written and oral communication skills. This Certificate program is designed to facilitate transfer into either the Human Services AA degree program or the Social Services AA Transfer degree program. All interested students must take HUMS 100, Introduction to Human Services, as the first course in the curriculum. 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. The complete program is available at the Harrisburg, Lancaster, and York campuses. Some of the required courses are available at the Gettysburg and Lebanon campuses, as well as through Virtual Learning.

### Career Opportunities

Completion of a certificate allows the graduate to apply basic human services skills at the entry level. Opportunities exist in fields such as mental health, mental retardation, substance abuse, gerontology, women's services and family services. Further education is required for higher positions within agencies. (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:

- Communicate effectively with clients and their families
- Disarm anger and resolve conflicts
- Establish rapport and an effective working relationship with clients and their families
- Empathize with a client's feelings
- Discuss the ethics and laws applicable to the human service field
- Assist with case management

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 31)

General Education	Major Requirements	Other Required Courses
ENGL 101 English Composition I 3	HUMS 100 Intro to Human Services 3	PSYC 101 General Psychology 3
	HUMS 121 Skills & Methods in Human Services I 3	*Program Elective 3
	HUMS 122 Skills & Methods in Human Services II 3	
	HUMS 200 Group Work Practice 3	
	HUMS 206 Human Development in a Social Environment 3	
	HUMS 215 Fieldwork Practicum I 4	
	SOCI 205 Racial & Cultural Relations 3	
		22

\*Select one of the following courses: HUMS 108, MATH 111, PSYC 212, SOCI 201, or SOCI 203 (Another course may be approved by the advisor.)

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

# Academic Programs

## HUMANITIES, LANGUAGES, AND THE ARTS, Associate in Arts Transfer Degree - 2091

*Communication, Humanities and the Arts Department*

The Humanities, Languages and the Arts AA program is designed for students who plan to seek a four-year degree specializing in English or English literature, a foreign language, humanities, music, 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. 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; however, depending on the student's area of interest, virtual learning or traveling to other campuses may be required to complete specific courses.

### *Career or 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 Humanities, Languages and the Arts discipline such as English Language or Literature, Foreign Languages, Humanities, or Music at a four-year institution
- Define the fundamental concepts associated with the specific disciplines chosen by the student which include, but are not limited to, terminology, genres, and theories
- Analyze, interpret, and apply information in the assertion of ideas and conclusions
- Analyze works from literature and humanities within the context of a global community
- Recognize the influence of social context, such as history, politics, and religions, on creative expressions within any culture
- Use technology and communication forms and methods used in discussing and disseminating knowledge and ideas in the specific disciplines of study

### **PROGRAM REQUIREMENTS (TOTAL CREDITS = 61)**

<b>General Education</b>		<b>Major Requirements</b>	
ENGL 101 English Composition I	3	*Computer Elective	3
ENGL 102 English Composition II	3	**English Literature Elective	3
COMM 101 Effective Speaking	3	GEOG 201 World Geography (D)	3
Core A Elective	3	***History Elective	3
Core B Elective	3	****Humanities Transfer Electives	12
Core B Elective (SOC1 201) (D)	3	Transfer Electives	6
Core C Elective	3		30
Core C Elective Math	3		
Core C Elective Science	3		
General Education Transfer Elective	3		
Physical Education & Wellness	1		
	31		

\*Choose any CIS course except CIS 100 (CIS 105 recommended)

\*\*Select one of the following: ENGL 201, 202, 203, 204, 205, 206, or 207

\*\*\*Select one of the following: HIST 101(D), 102(D), 201, or 202

\*\*\*\*Select courses in Art, English, Foreign Languages, Humanities, Media Studies, Music, Philosophy, Speech, or Theatre

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

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

<b>Fall Semester</b>		<b>Spring Semester</b>		<b>Fall Semester</b>		<b>Spring Semester</b>	
Core A Elective	3	Core B Elective (SOC1 201) (D)	3	Computer Elective	3	Gen. Ed. Transfer Elective	3
Core B Elective	3	Core C Elective	3	Core C Elective (Science)	3	History Elective	3
Core C Elective (Math)	3	ENGL 102	3	GEOG 201 (D)	3	Humanities Elective	3
COMM 101	3	English Literature Elective	3	Humanities Electives	6	Transfer Electives	6
ENGL 101	3	Humanities Elective	3				
		PE & Wellness	1				

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## INTERNATIONAL STUDIES, Associate in Arts Transfer Degree - 5030

*Social Science Department*

The International Studies 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 and Lancaster campuses. Some of the required courses are available at the Gettysburg, Lebanon, and York campuses, as well as through Virtual Learning.

### *Career or 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 = 61)**

General Education		Major Requirements	
ENGL 101 English Composition I	3	*Computer Elective	3
ENGL 102 English Composition II	3	GEOG 201 World Geography (D)	3
COMM 101 Effective Speaking	3	GP 201 National Political System	3
Core A Elective	3	GP 205 International Relations	3
Core B Elective ANTH 101 (D)	3	GP 208 Comparative Government	3
Core B Elective ECON 202	3	HIST 101 World History I (D) (or)	3
Core C Elective Math	3	HIST 201 Western Civilization I	(3)
Core C Elective Science	3	HIST 102 World History II (D) (or)	3
Core C Elective	3	HIST 202 Western Civilization II	(3)
General Education Transfer Elective	3	Language or Transfer Electives	9
Physical Education & Wellness	1		30
	31		

*(Foreign language proficiency through intermediate level is required. If such proficiency can be demonstrated, the student may choose to replace the foreign language requirement with transfer electives.)*

*\* Chose 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		Spring Semester		Fall Semester		Spring Semester	
Core C Elective (Math)	3	ENGL 102	3	Core B Elective (ANTH 101) (D)	3	CIS Elective	3
ENGL 101	3	GEOG 201 (D)	3	Core B Elective (ECON 201)	3	COMM 101	3
GP 201	3	GP 205	3	Core C Elective	3	Core A Elective	3
HIST 101 (D) or 201	3	HIST 102 (D) or 202	3	GP 208	3	Core C Elective (Science)	3
Language or Transfer Elective	3	Language or Transfer Elective	3	Language or Transfer Elective	3	Gen. Ed. Transfer Elective	3
						PE & Wellness	1

**Foreign Study Option:** Consult with advisor for special course sequencing.

*Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.*

# Academic Programs

## MARKETING, Associate in Arts Career Degree - 1640

Business Studies Department

The Marketing AA degree is designed for new students, as well as for those who are currently employed. 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 program is available at the Harrisburg and Lancaster campuses, as well as through Virtual Learning. The program may also be completed at the Gettysburg Campus by taking some online courses. Some of the required courses are available at the Lebanon and York campuses.

### Career Opportunities

Graduates of this program gain the skills and knowledge needed for an entry-level position in sales, advertising, retailing, wholesaling, physical distribution, market research, marketing management, insurance, real estate, or a related field.

### Competency Profile

This curriculum is designed to prepare students to:

- Prepare and deliver oral and written presentations on marketing concepts
- Utilize various methods of collecting, processing, and analyzing information about organizations, consumers, and the market to make informed marketing strategy decisions
- Describe the effects of social, legal, ethical, and technological forces on marketing decision-making
- Provide information about the marketing strategy, its effective deployment, and the impact on the performance of various areas within an organization
- Develop a sales manual and deliver a professional sales presentation utilizing the steps in the sales process
- Utilize the steps in creating an integrated marketing communications campaign and design an integrated marketing communications plan
- Utilize the steps involved in marketing planning and be able to create a marketing plan
- Describe the internet marketing environment and recommend ways to integrate various online marketing channels into a firm's overall strategy
- Perform and work with a team of students to apply marketing concepts
- Identify the psychological, sociological, and cultural factors, that influence consumers in making purchase decisions, and how these factors relate to the formation of effective marketing strategies
- Use the appropriate software and technologies to complete marketing assignments
- Utilize research methods to collect and analyze information about marketing concepts to make informed marketing decisions

### 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	**MATH 100 College Math for Business	3
ENGL 102 English Composition II (or)	3	BUSI 101 Introduction to Business	3	***Program Specific Electives	6
ENGL 106 Business Writing	(3)	BUSI 201 Business Law I (or)	3	CIS 105 Introduction to Software for Business	<u>3</u>
COMM 101 Effective Speaking	3	BUSI 209 Legal Environment for Business	(3)		12
Core A Elective	3	MGMT 201 Principles of Management	3		
Core B [Rec: PSYC 101 (or) SOCI 201 (D)]	3	MKTG 201 Principles of Marketing	3		
Core C (Rec: MATH 110)	3	MKTG 212 Professional Selling	3		
Free Elective (Rec: ACCT 200)	3	MKTG 218 Advertising	3		
Physical Education & Wellness	<u>1</u>	MKTG 235 Digital Media Marketing	3		
	22	*MKTG Elective	<u>3</u>		
			28		

\*Select from the following: MKTG 205, 216, 217, 220; BUSI 291.

\*\*May select MATH 100 – 299.

\*\*\*Select two courses from the following: BUSI 230 (D) 291; HTMT 213; MGMT 204, 221, 226; MKTG 205, 216, 217, 220; RE 101, 102

### 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	
BUSI 101	3	ACCT 101	4	BUSI 201 or 209	3	Core C Elective	3
ENGL 101	3	CIS 105	3	Core A Elective	3	Free Elective	3
MATH 100	3	COMM 101	3	MGMT 201	3	MKTG Elective	3
MKTG 201	3	Core B Elective	3	MKTG 218	3	Program Specific Electives	6
MKTG 212	3	ENGL 102 or 106	3	MKTG 235	3		
				PE & Wellness	1		

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## MASSAGE THERAPY, Certificate Program – 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 and York campuses. 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 AS program.

## **PROGRAM REQUIREMENTS**

Anatomy/Physiology/Kinesiology/Pathology  
Swedish Massage (I and II)  
Chair Massage  
Connective Tissue Therapy  
Neuromuscular Therapy  
Sports Massage  
Intro to Oriental Medicine

Awareness/Communication/Ethics  
Reflexology  
Business Practices  
Special Populations  
Spa/Aromatherapy  
Student Studio  
Energy Concepts

## **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/index.cfm> for the most current Gainful Employment information.*

# Academic Programs

## MATHEMATICS, Associate in Arts Transfer Degree - 4070

*Mathematics & Computer Science Department*

Students prepare 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 only available at the Harrisburg Campus. The program may also be completed at the Lancaster Campus by taking some online courses. Some of the required courses are available at the Gettysburg and York campuses, as well as through Virtual Learning.

### *Career or 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 = 62)**

General Education		Major Requirements	
ENGL 101 English Composition I	3	CPS 115 Visual Basic Programming I (or)	3
ENGL 102 English Composition II (or)	3	CPS 121 Java Programming (or)	(3)
ENGL 104 Technical Writing	(3)	CPS 135 C Programming	(3)
COMM 101 Effective Speaking	3	MATH 125 Discrete Mathematics	3
Core A Elective	3	MATH 220 Linear Algebra	4
Core B Elective	3	MATH 221 Calculus III	4
Core B Elective	3	MATH 222 Differential Equations	4
Core C Elective MATH 121	4	PHYS 212 Physics: Engineers/Scientists II	4
Core C Elective MATH 122	4	*Program Specific Electives	6
Core C Elective PHYS 211	4		28
General Education Transfer Elective	3		
Physical Education & Wellness	$\frac{1}{34}$		

*\*Select two courses from the following: ASTR 103, 104; BIOL 101, 102, 201; CHEM 101, 102; CPS 113, 115, 121, 135, 161, 230; ENGR 213, 214; GEOL 101, 102, 201; MATH 203, METR 101; PHYS 215*

### **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	CPS 115 or 121 or 135	3	Core B Elective	3	Core B Elective	3
Core A Elective	3	ENGL 102 or 104	3	MATH 220	4	GE Transfer Elective	3
ENGL 101	3	MATH 122 (Core C)	4	MATH 221	4	MATH 222	4
MATH 121 (Core C)	4	MATH 125	3	PE & Wellness	1	PHYS 212	4
		Program Specific Elective	3-4	PHYS 211 (Core C)	4	Program Specific Elective	3-4

*Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.*

# Academic Programs

## MATHEMATICS - COMPUTER SCIENCE, Associate in Science Transfer Degree - 4030

*Mathematics & Computer Science Department*

This 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 will be admitted at the Junior-level to any institution participating in Pennsylvania's statewide college credit transfer system. The complete program is only available at the Harrisburg Campus. The program may also be completed at the Lancaster Campus by taking some online courses. Some of the required courses are available at the Gettysburg and York campuses, as well as through Virtual Learning.

### *Career or 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 = 64)**

<b>General Education</b>		<b>Major Requirements</b>	
ENGL 101 English Composition I	3	CIS 110 Introduction to Computer Systems (or)	3
ENGL 102 English Composition II (or)	3	CNT 120 Network Communications Technology	(3)
ENGL 104 Technical Writing	(3)	CPS 121 JAVA Programming	3
COMM 101 Effective Speaking	3	CPS 161 Computer Science I	3
Core A Elective	3	CPS 162 Computer Science II	3
Core B Elective	3	CPS 230 Object Oriented Programming	3
Core B Elective	3	MATH 125 Discrete Mathematics	3
Core C MATH 121 Calculus I	4	MATH 220 Linear Algebra	4
Core C MATH 122 Calculus II	4	MATH 202 Introduction to Statistics	4
*Core C Elective (Science)	3	Program Specific Electives	8
**General Education Transfer Elective	3		31
Physical Education & Wellness	1		
	33		

\*Students will satisfy the 3-credit Core C science requirement by selecting the required lab-based science course from the list of program specific electives: BIOL 101, 102, CHEM 101, 102; GEOL 101, 102; PHYS 201, 202, 211, & 212.

\*\*Recommended: CPS 115, 135; MATH 221, 222

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

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

<b>Fall Semester</b>		<b>Spring Semester</b>		<b>Fall Semester</b>		<b>Spring Semester</b>	
CIS 110 or CNT 120	3	Core A Elective	3	Core B Elective	3	Core B Elective	3
COMM 101	3	CPS 161	3	CPS 162	3	CPS 230	3
CPS 121	3	ENGL 102 or 104	3	GE Transfer Elective	3	MATH 202	4
ENGL 101	3	MATH 122 (Core C)	4	MATH 220	4	PE & Wellness	1
MATH 121 (Core C)	4	MATH 125	3	Program Specific Elect	4	Program Specific Elect	4

*Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.*

# Academic Programs

## MECHANICAL ENGINEERING TECHNOLOGY, Associate in Science Career

### Degree - 4700

Engineering & Technology Department

The design option prepares students for employment in such areas as design/drafting, technical sales, and others. State-of-the-art drafting and design classes are supported by a computer-aided-design (CAD) system. Students work with the sophisticated computer-numerical-controls (CNC) and programmable logic controls (PLC) systems. The complete program is only available at the Harrisburg Campus. Some of the required courses are available at the Lancaster, Lebanon, and York campuses.

#### 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:

- Fabricate machine components using CNC and Continuous Alternative Monitoring (CAM)
- Perform basic programming for CNC machine tools
- Design and develop mechanical devices
- Test complex machinery and components
- Prepare technical reports and write specifications and manuals
- Program machine tools using standard codes or through a CAD system
- Prepare technical reports and manuals
- Write and speak effectively
- Appreciate accomplishments in the arts and sciences

#### 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	MATH 103 College Algebra	3
ENGL 104 Technical Writing (or)	3	CAD 164 Advanced Computer Aided Drafting and Design	2	MATH104 Trigonometry	3
ENGL 102 English Composition II	(3)	CVTE 208 Strength of Materials	3		<u>6</u>
COMM 203 Interpersonal Communication (or)	3	ELEC 100 Fundamental of Electricity/Electronics	1		
COMM 101 Effective Speaking	(3)	ENGR 102 Engineering & Engineering Tech Orient	2		
Core A Elective	3	ENGR 271 Design for the Environment	3		
Core B Elective	3	GTEC 104 Engineering Materials and Processes	3		
Free Elective	3	GTEC 201 Statics	3		
Physical Education & Wellness	<u>1</u>	GTEC 202 Statistical Quality Control	3		
	19	GTEC 208 Strength Materials Lab	1		
		IA 205 Computer Numerical Control	3		
		IA 208 PLCs and Automation (or)	2		
		IA 213 Troubleshooting PLCs	(3)		
		MDES 201 Dynamics	3		
		MDES 204 Product Design	3		
		MDES 206 Fluid Flow	3		
		MDES 207 Machine Shop Theory and Practice	<u>1</u>		
			39		

#### 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	Summer Session	Fall Semester	Spring Semester
CAD 154 3	ENGL 104 or 102 3	COMM 203 or 101 3	Core A Elective 3	CAD 164 2
ELEC 100 1	GTEC 104 3	Core B Elective 3	CVTE 208 3	ENGR 271 3
ENGL 101 3	GTEC 201 3		MDES 201 3	Free Elective 3
ENGR 102 2	IA 205 3		MDES 206 3	GTEC 208 1
GTEC 202 3	MATH 104 3		PE & Wellness 1	IA 208 or 213 2 or 3
MATH 103 3				MDES 204 3
MDES 207 1				

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.



# Academic Programs

## MECHATRONICS, Associate in Applied Science Career Degree - 4711

Engineering & Technology Department

The Mechatronics associate in applied science degree program educates students through an integrated-systems approach that includes the automation, process controls, and industrial robotics used throughout industry. Designed as a multidisciplinary program that incorporates theory and hands-on experience, students gain the broad skill set necessary to maintain, repair, and manage mechanical, electrical, electronic, fluid power, and control systems. Emphasis is also placed on the integration of these systems. Graduates are prepared for positions in which maintenance, troubleshooting, repairing, and modifying the designs of automated systems and equipment are required. The complete program is available at the Harrisburg Campus.

### Career Opportunities

Graduates find employment as multi-skilled technicians in industrial, manufacturing, and commercial settings.

### Competency Profile

This curriculum is designed to prepare students to:

- Perform maintenance on electronic, electrical, pneumatic, hydraulic and industrial robots
- Interpret OSHA Standards
- Use hand tools, power tools, and test equipment
- Demonstrate practical knowledge in electrical and electronic 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 and repair electromechanical equipment and systems
- Use the National Electrical Code (NEC)
- Troubleshoot basic AC systems
- Program, wire, and troubleshoot basic programmable logic control (PLC) systems
- Effectively interact with and develop basic programs on industrial robots
- Write and speak effectively
- Appreciate accomplishments in the arts and sciences

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 64)

General Education	Major Requirements	Other Required Courses
ENGL 101 English Composition I	3 ELEC 144 Electronics for Technicians	3 *MATH 161 Tech MATH for Gen Tech
ENGL 104 Technical Writing (or)	3 ELOC 153 Fundamentals of Electricity	
ENGL 102 English Composition II	(3) ELOC 172 National Electric Code (NEC)	
COMM 203 Interpersonal Communication (or)	3 GTEC 101 Safety: OSHA-30 & NFPA 70E	
COMM 101 Effective Speaking	(3) HVAC 103 Fundamentals of Air Cond. I	
Core A Elective	3 IA 201 Motors and Controls I	
Core B Elective	3 IA 208 PLC's and Automation	
Core C Elective	3 IA 210 Robotics I	
Free Elective	3 IA 221 Sensor Technology	
Physical Education & Wellness	1 IMT 108 Power Transmission	
	22 IMT 110 Fluid Power	
	IMT 291 Industrial Maintenance Coop	
		3
		39

\* 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	Spring Semester	Fall Semester	Spring Semester
ELOC 153	4 Core A Elective	3 COMM 203 or 101	3 Core C Elective
ENGL 101	3 ELEC 144	3 Core B Elective	3 Free Elective
GTEC 101	3 ENGL 104 or 102	3 ELOC 172	2 IA 210
IMT 108	4 IA 201	4 IA 208	2 IMT 110
MATH 161	3 HVAC 103	4 IA 221	3 IMT 291
			PE & Wellness
			1

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## MECHATRONICS, Certificate Program - 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. Students learn mechanical, electrical, electronic, fluid power, and control systems while gaining an understanding, through theory and hands-on experience, of how these systems integrate with one another. The certificate program offers students the opportunity to select specific electives in electronics, sensors, and programmable logic controls (PLCs). 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 Campus.

### 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 =35)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I (or)	3	ELOC 153 Fundamentals of Electricity	4	**MATH 161 Technical Math for General Tech	3
ENGL 104 Technical Writing	(3)	GTEC 101 Safety: OSHA 30 & NFPA 70E	3		
		HVAC 103 Fundamentals of Air Conditioning I	4		
		IA 201 Motors & Controls I	4		
		IMT 108 Power Transmission	4		
		IMT 110 Fluid Power	4		
		*Program Electives	6		
			29		

\*Select from the following courses: ELEC 144; ELOC 172; IA 208, 221.

\*\*May be replaced with a higher level MATH offering.

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



# Academic Programs

## MEDICAL ASSISTING, Associate in Science Career Degree - 3520

Health & Public Service Department

Medical Assisting is a multi-skilled allied health profession with practitioners working primarily in ambulatory care settings, such as medical offices and clinics. The program is accredited by the Commission on Accreditation of Allied Health Education Programs upon the recommendation of the American Association of Medical Assistants (AAMA). 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 associate's degree. The complete program is only available at the Harrisburg Campus. Some of the required courses are available at the Gettysburg, Lancaster, Lebanon, and York campuses, as well as through Virtual Learning.

*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)), email [healthcareers@hacc.edu](mailto:healthcareers@hacc.edu) or call (717) 780-1988 or (800) 222-4222 extension 1988 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.

### 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 Association of Medical Assistants Endowment
- Demonstrate effective oral and written communication skills
- Appreciate accomplishments in the arts and sciences
- Explain how specialized training fits into the healthcare delivery system
- Take the Certified Medical Assisting credentialing examination for Medical Assistants administered by the AAMA

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 61)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	AH 210 Health Care Law & Ethics	3	BIOL 111 Intro to Human Biology (Core C) (or)	3
ENGL 102 English Composition II (or)	3	MA 110 Medical Terminology	3	BIOL 121 Anatomy & Physiology I (and)	(4)
*ENGL 106 Business Writing	(3)	MA 140 Introduction to Medical Assisting	4	Core Elective	(3)
COMM 101 Effective Speaking (or)	3	MA 142 Intro to Medical Lab Techniques	3	CIS 105 Intro to Software for Business	3
COMM 203 Interpersonal Communication	(3)	MA 150 Pathophysiology for Medical Assisting	3	PSYC 101 General Psychology (Core B)	3
Core A Elective	3	MA 200 Pharmacology for Medical Assisting	3	**Program Electives	<u>2-3</u>
Free Elective	3	MA 201 Medical Assisting Pharmacology Lab	1		11
Physical Education & Wellness	<u>1</u>	MA 212 Ambulatory Care Clinical Procedures	4		
	16	MA 213 Medical Insurance & Billing	3		
		MA 220 Medical Office Administration I	3		
		MA 230 Medical Assisting Externship	<u>4</u>		
			34		

\*ENGL 106 is preferred.

\*\*Select Program Electives from the following: CVT 101; GERT 102; HLTH 101; MGMT 203 or 204; NUTR 104; PBT 102; PSYC 209, 212, or 213; SOCI 226; or related course approved and substituted by the Program Director.

NOTE: A grade of C or higher is required for AH, BIOL, MA courses; CIS 105; ENGL 101, 102 or 106; COMM 101 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 II		Summer I		Fall Semester III	
BIOL 111 or	3	COMM 101 or 203	3	Core A (D) Elective	3	MA 140	4
BIOL 121 & Core C	(3-4)	ENGL 102 or 106	3	Free Elective	3	MA 142	3
CIS 105	3	MA 150	3	PE & Wellness	1	MA 200	3
ENGL 101	3	PSYC 101 (Core B)	3	Program Elective	2-3	MA 213	3
MA 110	3						
Spring Semester IV		Summer V					
AH 210	3	MA 230	4				
MA 201	1						
MA 212	4						
MA 220	3						

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## MEDICAL ASSISTING, Certificate Program - 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 upon the recommendation of the American Association of Medical Assistants (AAMA). 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 associate's degree. The complete program is available at the Harrisburg Campus. Some of the required courses are available at the Lancaster, Lebanon, and York campuses, as well as through Virtual Learning.

*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)), email [healthcareers@hacc.edu](mailto:healthcareers@hacc.edu) or call (717) 780-1988 or (800) 222-4222 extension 1988 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	
	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 I	3
	MA 230 Medical Assisting Externship	4
		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/index.cfm> for the most current Gainful Employment Information.*

# Academic Programs

## MEDICAL LABORATORY TECHNICIAN - CLINICAL LABORATORY TECHNICIAN, Associate in Arts Career Degree - 3580

Health & Public Service Department

The Medical Laboratory Technician/Clinical Laboratory Technician Program 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. The 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, back grounds (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. Some of the required courses are available at all of HACC's campuses, as well as through Virtual Learning.

*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, you may email [healthcareers@hacc.edu](mailto:healthcareers@hacc.edu), or call (717) 780-1988 and/or (800) 222-4222 extension 1988 for information on specific program entry requirements.

### Career Opportunities

Graduates of this program obtain positions as Medical Laboratory Technicians/Clinical 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 the National Accrediting Agency for Clinical Laboratory Sciences
- Take 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 100 Orientation to MLT	2	BIOL 111 Intro to Human Biology (Core C)	3
ENGL 102 English Composition II	3	MLT 120 Hematology & Coagulation	4	BIOL 221 Microbiology	4
COMM 101 Effective Speaking	3	MLT 122 Immunology	2	CHEM 101 General Inorganic Chemistry I (Core C)	4
Core A Elective	3	MLT 124 Immunohematology	3	PBT 100 Intro Phlebotomy – Allied Health	<u>2</u>
Core B Elective	3	MLT 220 Clinical Microbiology	4		13
Free Elective	3	MLT 222 Clinical Chemistry	4		
Physical Education & Wellness	<u>1</u>	MLT 224 Urinalysis	2		
	19	MLT 226 Clinical Experience I	5		
		MLT 228 Clinical Experience II	5		
		MLT 230 Parasitology & Mycology	2		
		MLT 236 Clinical Laboratory Management	<u>2</u>		
			35		

Note: A grade of C, or higher, is required for ENGL 101 and 102; COMM 101; all BIOL, CHEM, PBT, and MLT courses.

### RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

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

Summer Session	Fall Semester	Spring Semester	Summer Session	Fall Semester	Spring Semester
BIOL 111	3	BIOL 221	4	MLT 100	2
COMM 101	3	CHEM 101	4	MLT 120	4
ENGL 101	3	ENGL 102	3	MLT 122	2
PBT 100	2	PE & Wellness	1	MLT 220	4
				MLT 124	3
				MLT 222	4
				MLT 230	2
				MLT 224	2
				Core A Elective	3
				Core B Elective	3
				Free Elective	3
				MLT 226	5
				MLT 236	2
				MLT 228	5

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## MEDICAL LABORATORY TECHNICIAN - CLINICAL LABORATORY TECHNICIAN, Certificate Program - 3260

Health & Public Service Department

The Medical Laboratory Technician/Clinical Laboratory Technician Program prepares a student for a career as a medical laboratory professional. Students acquire the technical expertise to perform a wide variety of laboratory tests that aid primary care providers in the diagnosis and treatment of disease. Potential students must provide documentation showing a completed baccalaureate in science degree in order to gain admittance into this program. Also, all course prerequisites must be met before enrollment into an MLT course may occur. This program is fully accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). 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)), email [healthcareers@hacc.edu](mailto:healthcareers@hacc.edu) or call (717) 780-1988 or (800) 222-4222 extension 1988 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 obtain positions as Medical Laboratory Technicians/Clinical 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 the National Accrediting Agency for Clinical Laboratory Sciences
- Take the national entry-level credentialing examination administered by certifying agencies of the profession
- Recognize how specialized training fits into the health care delivery system

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 37)

General Education	Major Requirements	Other Required Courses
	MLT 100 Orientation to MLT	PBT 100 Intro Phlebotomy – Allied Health
	MLT 120 Hematology and Coagulation	2
	MLT 122 Immunology	4
	MLT 124 Immunohematology	2
	MLT 220 Clinical Microbiology	3
	MLT 222 Clinical Chemistry	4
	MLT 224 Urinalysis	4
	MLT 226 Clinical Experience I	2
	MLT 228 Clinical Experience II	5
	MLT 230 Parasitology and Mycology	5
	MLT 236 Clinical Laboratory Management	2
		<u>2</u>
		35

*Note: A grade of C, or higher, is required for all PBT and MLT courses.*

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

# Academic Programs

## 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 20-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 eligible to receive 21 credits upon enrolling in HACC’s Criminal Justice Transfer Associate degree curriculum. (Courses: CJ 104, CJ 201, CJ 205, 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 last date of the training program
- Possess a valid operator’s license
- High school diploma or G.E.D (transcript required)
- Submit college transcripts if applicable
- 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
- 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)
- 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 Director of Law Enforcement Training
- 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 Rules and Regulations
- 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 20-week, 754-hour, police academy.

# Academic Programs

## MUSIC INDUSTRY, Associate in Arts Career Degree - 1801

*Business Studies Department*

The program provides students with experiences in the classroom, MIDI computer lab (Harrisburg Campus), professional studio production at off-campus locations, and internships. The complete program is only available at the Harrisburg Campus. Some of the required courses are available at the Gettysburg, Lancaster, Lebanon, and York campuses, as well as through Virtual Learning.

### *Career Opportunities*

Graduates of the program are prepared for careers in music marketing, retailing, wholesaling, music publishing, licensing, concert promotion, arts promotion, recording production and distribution technology in the 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 = 65)**

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	ACCT 101 Principles of Accounting I (or)	4	MATH 100 College Math for Business	3
ENGL 102 English Composition II (or)	3	ENTR 203 Finance & Accounting for the Entrepreneur	(3)		
ENGL 106 Business Writing	(3)	BUSI 101 Introduction to Business	3		
COMM 101 Effective Speaking (or)	3	BUSI 201 Business Law I	3		
COMM 203 Interpersonal Communication	(3)	MKTG 201 Principles of Marketing	3		
Core A Elective	3	MUS 119 Introduction to Music Theory (or)	3		
Core B Elective	3	MUS 120 Music Theory I	(3)		
Core C Elective	3	MUSB 111 Music Business and the Internet	3		
Free Elective	3	MUSB 214 Music Business Studies	3		
Physical Education & Wellness	1	MUSB 224 Music Industry & American Popular Music	3		
	22	MUSB 225 Entertainment & Music Promotion	3		
		MUSB 226 Music Computer Applications	3		
		MUSB 228 Audio Technology	4		
		MUSB 291 Music Industry Internship	3		
		*Music or Music Industry Electives	3		
			40		

\*Select 3 credits from the following: MUS 111, 112, 115, or 116; MUSB 227 or 229.

### **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	Summer Session	Fall Semester	Spring Semester					
BUSI 101	3	Core A Elective	3	MUSB 291	3	Core B Elective	3	ACCT 101 or ENTR 203	4 or 3
ENGL 101	3	COMM 101 or 203	3			MATH 100	3	BUSI 201	3
MUSB 111	3	ENGL 102 or 106	3			MKTG 201	3	Core C Elective	3
MUS 119 or 120	3	MUSB 224	3			MUSB 225	3	Free Elective	3
MUSB 214	3	PE & Wellness	1			MUSB 228	4	MUS/MUSB Elective	3

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## MUSIC AUDIO AND RECORDING TECHNOLOGY, Diploma Program - 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 = 20)**

#### **General Education**

#### **Major Requirements**

MUSB 111 Music Business and the Internet	3
MUSB 226 MIDI and Computer Applications	3
MUSB 227 Studio and Performance Production Operations	4
MUSB 228 Audio Technology	<u>4</u>
*Program Specific Electives	6

\*Select two from the following courses: MUSB 214, 224, 225, 229, 230, and 291.

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

# Academic Programs

## NANOFABRICATION MANUFACTURING TECHNOLOGY, Associate in Applied Science Career Degree - 4690

Engineering & Technology Department

The skills learned in this program are used in chip manufacturing, pharmaceuticals, micro-electromechanical systems, sensors, biomedicine, opto-electronics, and cutting-edge computer displays. Students gain those hands-on skills in the laboratory at HACC and the Pennsylvania State University. The Nanofabrication Manufacturing Technology program uses a resource-sharing approach to “high-tech” workforce development. After successfully completing three semesters of background work with a minimum 3.0 GPA and a letter of recommendation from a HACC electronics faculty member, students go to the PSU Electronic Materials and Processing Research Laboratory (EMPRL), located in State College, Pa. The complete three semesters are only available at the Harrisburg Campus. Some of the required courses are available at the Lancaster, Lebanon, and York campuses.

### 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
- Write and speak effectively
- Appreciate accomplishment in the arts and sciences

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 72)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	CAD 154 Computer Aided Drafting and Design	2	CHEM 100 Principles of Chemistry (or)	3
ENGL 104 Technical Writing	3	ELEC 101 Equipment Utilization	1	CHEM 101 General Chemistry I	(4)
COMM 203 Interpersonal Communication	3	ELEC 106 Fundamental of Electronics	4	MATH 103 College Algebra	3
Core A Elective	3	ELEC 111 AC/DC Circuits I	4	MATH 104 Trigonometry	3
Core B Elective	3	ELEC 125 Introduction to PC Technology	3	MATH 202 Statistics (Core C Elective)	4
Free Elective	3	ELEC 213 Digital Electronics	4	PHSC 113 Introduction to Physical Science	3
Physical Education & Wellness	1	GTEC 111 General Technology Orientation	1		16
	19	NFAB 211 Material, Safety & Equipment Overview	3		
		NFAB 212 Basic Nanofabrication Procedures	3		
		NFAB 213 Thin Films	3		
		NFAB 214 Lithography	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	Spring Semester	Summer	Fall Semester	Spring Semester
CAD 154 2	COMM 203 3	Core A Elective 3	CHEM 100 or 101 3 or 4	(Capstone Semester at EMPRL)
ELEC 101 1	ELEC 111 4	Core B Elective 3	ELEC 106 4	NFAB 211 3
ELEC 125 3	ELEC 213 4	PE & Wellness 1	Free Elective 3	NFAB 212 3
ENGL 101 3	ENGL 104 3		MATH 202 4	NFAB 213 3
GTEC 111 1	MATH 104 3		PHSC 113 3	NFAB 214 3
MATH 103 3				NFAB 215 3
				NFAB 216 3

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## NUCLEAR MEDICINE TECHNOLOGY, Associate in Arts Career Degree - 3630

Health & Public Service Department

Students learn how to perform diagnostic and therapeutic procedures involving radioactive materials and techniques for safe storage and disposal of these materials. This program is offered in cooperation with Lancaster General College of Nursing and Health Sciences. The complete program is available at the Lancaster Campus. Some of the required courses are available at the Gettysburg, Harrisburg, Lebanon, and York campuses, as well as through Virtual Learning.

*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)), email [healthcareers@hacc.edu](mailto:healthcareers@hacc.edu) or call (717) 780-1988 or (800) 222-4222 extension 1988 for specific program entry requirements.

### Career Opportunities

Graduates are prepared for employment as nuclear medicine technologists in hospitals.

### Competency Profile

This curriculum is designed to prepare students to:

- Work effectively with other hospital personnel
- Demonstrate the skills prescribed by the Joint Review Committee on Educational Programs in Nuclear Medicine Technology
- Take the national entry-level credentialing examination administered by the Nuclear Medicine Technology Certification Board (NMTCB) or the American Registry of Radiologic Technologists (ARRT)
- Write and speak effectively
- Appreciate accomplishments in the arts and sciences
- Understand how specialized training fits into the health care delivery system

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 75)

General Education		Major Requirements	
ENGL 101 English Composition I	3	BIOL 121 Anatomy & Physiology I	4
ENGL 102 English Composition II	3	BIOL 122 Anatomy & Physiology II	4
COMM 101 Effective Speaking	3	BIOL 221 Microbiology	4
Core A Elective	3	CHEM 101 General Inorganic Chemistry I	4
Core B Elective	3	CIS 105 Intro to Software for Business	3
Free Elective	3	MATH 103 College Algebra	3
Physical Education & Wellness	1	PHYS 151 Physics for Technicians (or)	4
	19	PHYS 201 General Physics I	(4)
		Clinical Rotation	<u>30</u>
			56

### RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

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

Summer	Fall Semester	Spring Semester	Summer
MATH 103      3	BIOL 121      4	BIOL 122      4	Core A Elective      3
PE & Wellness      1	CHEM 101      4	BIOL 221      4	Core B Elective      3
	ENGL 101      3	CIS 105      3	ENGL 102      3
	PHYS 151 or 201      4	COMM 101      3	Free Elective      3

### Fall and Spring Semesters and Summer Session

Clinical Rotation      30

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## NURSE AIDE, Certificate Program – Noncredit

*Workforce Development/Healthcare Education*

This program is designed to develop sensitivity and competence in the basic tasks required to care for patients or residents in a variety of healthcare facilities. Its purpose is to provide the student with a basic level of knowledge and skills needed to care for patients, residents, or clients as set forth by the profession of nursing and regulated by the Commonwealth of Pennsylvania. The program is offered throughout the state of Pennsylvania at numerous training locations and clinical settings. The following requirements must be completed (at the student's expense) prior to the start of class: a physical examination, flu immunization if enrolled in a class between the months of October through March, 2-Step PPD, PA State Police Criminal Background Check and an FBI Check if the student has not resided Pennsylvania for the past two consecutive years. The student should consider these factors prior to enrolling. Any questions regarding this information may be directed to the Workforce Development/Healthcare Education office at (717) 221-1352.

### *Selective Program*

Specific admission criteria must be met prior to start of the program. Call (717) 221-1352 or email [natp@hacc.edu](mailto:natp@hacc.edu) for specific program entry requirements.

### *Career Opportunities*

This program prepares individuals for employment as Nurse Aides in long term care facilities, hospitals, rehabilitation centers and other healthcare facilities.

### *Competency Profile*

This curriculum is designed to prepare students to:

- Take the PA State Certification Exam for Nurse Aides.

## **PROGRAM REQUIREMENTS**

Long-Term Care and the Nursing Assistant's Role  
Foundations of Resident Care  
Understanding Your Residents  
Body Systems and Related Conditions  
Confusion, Dementia, and Alzheimer's disease  
Personal Care Skills  
Basic Nursing Skills  
Nutrition and Hydration  
Rehabilitation and Restorative Care  
Caring for Yourself

## **RECOMMENDED SEQUENCE FOR STUDENTS**

Students must successfully complete the entire 120-hour class.

# Academic Programs

## NURSING, Associate in Arts Career Degree - 3680

*Health & Public Service Department*

The Nursing AA 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. The complete Nursing program is available at the Gettysburg and Harrisburg campuses (day program only); Lancaster campus (day and evening program) and the York Campus (evening program only). Some of the required courses are available at the Lebanon Campus and through Virtual Learning. This program is approved by the Pennsylvania State board of Nursing and accredited by the National League for Nursing Accreditation Commission.

### *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)), email [healthcareers@hacc.edu](mailto:healthcareers@hacc.edu), or call (717) 780-1988 or (800) 222-4222 extension 1988 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

# Academic Programs

- Demonstrate critical thinking to deliver *clinically competent care* in accordance with the national patient safety initiatives [*Caring*]
- Engage in caring behaviors to provide a safe, compassionate, nurturing environment that promotes human flourishing
- Provide holistic care, across the health continuum, that reflects the patients' values, cultures, and lifestyles

Adapted from Educational Competencies for Graduates of Associate Degree Nursing Programs, NLN, 2000.

*Bold and italicized words are concepts that thread throughout the Harrisburg Area Community College Nursing Program Conceptual Framework.*

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 74)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	NURS 140 Intro to Nursing Practice Concepts I	1	BIOL 121 Anatomy & Physiology I	4
ENGL 102 English Composition II	3	NURS 141 Intro to Nursing Practice Concepts II	1	BIOL 122 Anatomy & Physiology II	4
COMM 101 Effective Speaking	3	NURS 142 Health Assessment Concepts for Nursing Practice	3	BIOL 221 Microbiology	4
Core A Elective	3	NURS 143 Concepts of Informatics in Nursing Practice	1	PSYC 101 General Psychology	3
Free Elective	3	NURS 144 Fundamental Concepts for Nursing Practice	3	PSYC 209 Life Cycle Development	3
Physical Education & Wellness	1	NURS 150 Holistic Health Concepts for Nursing Practice I	5	SOCI 201 Intro to Sociology (D)	3
	16	NURS 151 Holistic Health Concepts for Nursing Practice II	4.5		21
		NURS 240 Adult Health Concepts for Nursing Practice I	2		
		NURS 241 Adult Health Concepts for Nursing Practice II	2.5		
		NURS 242 Family Health Concepts for Nursing Practice I	2.5		
		NURS 243 Family Health Concepts for Nursing Practice II	2.5		
		NURS 244 Advanced Behavioral Health Concepts for Nursing Practice	2.5		
		NURS 250 Complex Health Concepts for Nursing Practice	2.5		
		NURS 251 Leadership & Management Concepts for Nursing Practice	4		
			37		

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

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

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

Summer	Fall Semester	Spring Semester	Fall Semester	Spring Semester
BIOL 121 4	BIOL 122 4	BIOL 221 (Core C) 4	COMM 101 3	Core A Elective 3
	ENGL 101 3	NURS 150 5	ENGL 102 3	Free Elective 3
	NURS 140 1	NURS 151 4.5	NURS 240 2	NURS 243 2.5
	NURS 141 1	PSYC 209 3	NURS 241 2.5	NURS 250 2.5
	NURS 142 3	SOCI 201 (Core B) 3	NURS 242 2.5	NURS 251 4
	NURS 143 1		NURS 244 2.5	PE & Wellness 1
	NURS 144 3			
	PSYC 101 3			

**Option for Licensed Practical Nurses:** Students who have graduated as Practical Nurses and have a Practical Nursing License in good standing from the PA State Board of Nursing can receive advanced standing in the Associate Degree Nursing Program when they continue their education at Harrisburg Area Community College. Students should contact their advisor about this option.

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## PARALEGAL STUDIES, Associate in Arts Career Degree - 5701

*Business Studies Department*

Students prepare for employment as assistants to attorneys in law-related occupations, including private, corporate, and governmental law practice. The program is approved by the American Bar Association (ABA). The program is available at the Harrisburg and Lancaster campuses.

**Paralegals may not provide legal services directly to the public, except as permitted by law.**

### *Career Opportunities*

Graduates are employed as paralegals in private, corporate and governmental law practices, title insurance companies, and as assistants in law libraries.

### *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)
- Write and speak effectively
- 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 101 Introduction to Paralegal Studies	3	BUSI 201 Business Law I	3
ENGL 102 English Composition II	3	PLGL 102 Legal Research and Writing I	3	CIS 105 Intro to Software for Business	3
COMM 101 Effective Speaking	3	PLGL 104 Legal Research and Writing II	3	**Program Specific Electives	<u>15</u>
Core A Elective	3	PLGL 201 Civil Litigation I	3		21
Core B Elective	3	PLGL 202 Civil Litigation II	3		
*Core C Elective	3	PLGL 210 Paralegal Ethics and Professionalism	<u>3</u>		
Free Elective	3		18		
Physical Education & Wellness	<u>1</u>				
	22				

\*Any Core C Elective except MATH 100.

\*\*Select five courses from the following:

BUSI 202 Business Law II  
 CJ 203 Criminal Evidence  
 CJ 212 Criminal Law and Procedure  
 PLGL 203 Family Law  
 PLGL 204 Estate Planning and Administration  
 PLGL 205 Business Organizations  
 PLGL 206 Employment Law  
 PLGL 207 Bankruptcy Law  
 PLGL 209 Real Estate Law for Paralegals  
 PLGL 251 Paralegal Internship I  
 PLGL 252 Paralegal Internship II

### **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	
BUSI 201	3	CIS 105	3	Core C Elective	3	Free Elective	3
COMM 101	3	Core A Elective	3	PLGL 104	3	PLGL 210	3
Core B Elective	3	ENGL 102	3	PLGL 202	3	Program Specific Electives	9
ENGL 101	3	PE & Wellness	1	Program Specific Electives	6		
PLGL 101	3	PLGL 102	3				

*Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.*

# Academic Programs

## PARALEGAL STUDIES, Certificate Program - 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	3	BUSI 201 Business Law I	3
	PLGL 102 Legal Research & Writing I	3	CIS 105 Intro to Software for Business	3
	PLGL 104 Legal Research & Writing II	3	*Program Specific Electives	<u>15</u>
	PLGL 201 Civil Litigation I	3		21
	PLGL 202 Civil Litigation II	3		
	PLGL 210 Paralegal Ethics & Professionalism	3		
		<u>18</u>		

\*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 205 Business Organizations  
PLGL 206 Employment Law  
PLGL 207 Bankruptcy Law  
PLGL 209 Real Estate Law for Paralegals  
PLGL 251 Paralegal Internship I  
PLGL 252 Paralegal Internship II

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

# Academic Programs

## PARAMEDIC - Emergency Medical Technician, Associate in Arts Career Degree - 3690

Health & Public Service Department

Students are prepared to deliver therapy to patients prior to their arrival in hospital emergency rooms. Students are trained in life-support procedures performed by following orders of physicians sent by radio or by following standard medical protocols. Students must have had a PA EMT certificate for at least six months and at least one year's experience with a basic life-support ambulance service. The program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) upon the recommendation of the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions (CoAEMSP). The complete program is available at the Harrisburg Campus. Some of the required courses are also available at all of HACC's campuses, as well as through Virtual Learning.

**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)), email [healthcareers@hacc.edu](mailto:healthcareers@hacc.edu) or call (717) 780-1988 or (800) 222-4222 extension 1988 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 are employed as emergency medical technicians-paramedics by hospitals and independent emergency service organizations.

### Competency Profile

This curriculum is designed to prepare students to:

- Administer standard emergency treatments
- Work effectively with other healthcare professionals
- Demonstrate the skills prescribed by the Commission on Allied Health Education Programs (CAAHEP) upon and recommendation of the Committee on Accreditation of Education Programs for the Emergency Medical Services Professions (CoAEMSP)
- Take the paramedic certification examination administered by the National Registry of Emergency Medical Technicians
- Understand how their specialized training fits into the healthcare delivery system
- Possess a broad background in the sciences of the human body
- Understand the principles of management
- Write and speak effectively
- Appreciate accomplishments in the arts and sciences

### PROGRAM REQUIREMENTS (TOTAL CREDITS =78)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	*EMS 131 EMT: Basic Life Support		BIOL 105 Medical Terminology	3
ENGL 102 English Composition II	3	*EMS 132 EMT: Field Experience		BIOL 121 Anatomy & Physiology I	4
COMM 101 Effective Speaking (or)	3	EMS 231 Advanced Life Support I	5	BIOL 122 Anatomy & Physiology II	4
COMM 203 Interpersonal Communications	(3)	EMS 232 ALS Hospital Experience I	1	CHEM 100 Principles of Chemistry	3
Core A Elective	3	EMS 233 Advanced Life Support II	6	MGMT 201 Principles of Management	3
Core B Elective	3	EMS 234 ALS Hospital Experience II	1	PSYC 101 General Psychology	3
Core C Elective	3	EMS 235 Advanced Life Support III	3	PSYC 209 Life Cycle Development (or)	3
Free Elective	3	EMS 236 ALS Hospital Experience III	1	SOCI 226 Perspectives on Aging (or)	(3)
Physical Education & Wellness	1	EMS 237 ALS Field Experience	3	PSYC 213 Abnormal Psychology	(3)
	22	EMS 238 Rescue	3		23
		EMS 240 EMS: Introduction	3		
		EMS 241 EMS: Externship	3		
		EMS 243 Advanced Life Support	2		
		EMS 244 ALS Special Topics	1		
		EMS 245 ALS Summative Evaluation	1		
			33		

\*Non Credit Courses

### RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

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

Summer	Fall Semester	Spring Semester	Summer	Fall Semester	Spring Semester
Core A Elective	3 BIOL 121	4 BIOL 122	4 Core B Elective	3 CHEM 100	3 BIOL 105
*EMS 131	EMS 231	5 EMS 233	6 EMS 235	3 EMS 240	3 COMM 101 or 203
*EMS 132	EMS 232	1 EMS 234	1 EMS 236	1 EMS 243	2 Core C Elective
Free Elective	3 PE & Wellness	1 EMS 237	3 EMS 238	3 EMS 244	1 EMS 241
		PSYC 101	3 ENGL 101	3 ENGL 102	3 EMS 245
				PSYC 209 or SOCI 226	3 MGMT 201
				or PSYC 213	3

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## PARAMEDIC - Emergency Medical Technician, Certificate Program - 3330

Health & Public Service Department

CIP Code: 51.0904

Students are prepared to deliver therapy to patients prior to their arrival in hospital emergency rooms. Students are trained in life-support procedures performed by following orders of physicians sent by radio or by following standard medical protocols. Students must have had a PA EMT certificate for at least six months and at least one year's experience with a basic life-support ambulance service. The program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) upon the recommendation of the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions (CoAEMSP). The complete program is available at the Harrisburg Campus. Some of the required courses are available through Virtual Learning.

*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)), email [healthcareers@hacc.edu](mailto:healthcareers@hacc.edu) or call (717) 780-1988 or (800) 222-4222 extension 1988 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 are employed as emergency medical technicians-paramedics by hospitals and independent emergency service organizations. (SOC Code: 29-2041 Emergency Medical Technicians and Paramedics)

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:

- Administer standard emergency treatments
- Work effectively with other healthcare professionals
- Demonstrate the skills prescribed by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) upon recommendation of the Committee on Accreditation of the Educational Programs for the Emergency Medical Services Personnel (CoAEMSP)
- Take the paramedic certification examination administered by the National Registry of Emergency Medical Technicians
- Understand how their specialized training fits into the healthcare delivery system

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 35)

#### General Education

#### Major Requirements

*EMS 131 EMT – Basic	3
*EMS 132 EMT – Basic Field Experience	3
EMS 231 Advanced Life Support I	5
EMS 232 ALS Hospital Experience I	1
EMS 233 Advanced Life Support II	6
EMS 234 ALS Hospital Experience II	1
EMS 235 Advanced Life Support III	3
EMS 236 ALS Hospital Experience III	1
EMS 237 ALS Field Experience	3
EMS 243 Advanced Life Support	2
EMS 244 ALS Special Topics	2
EMS 245 ALS Summative Evaluation	1
	<u>31</u>

#### Other Required Courses

<u>Option 1</u>	
AH 150 Intro to Human Illness & Disease	3
BIOL 111 Introduction to Human Biology	<u>3</u>
	(OR)
<u>Option 2</u>	
BIOL 121 Anatomy & Physiology	(4)
	(OR)
<u>Option 3</u>	
EMS 200 Intro to Advanced Life Support	(5)
	6

\*These course credits are awarded through Noncredit.

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

# Academic Programs

## PHILOSOPHY, Associate in Arts Transfer Degree - 2050

*Communication, Humanities and the Arts Department*

The Philosophy AA Degree transfer program allows students the opportunity to explore various systems of beliefs and values to help them enlarge their own sphere of beliefs and values. Students are able to develop habits of critical thinking, precise writing, and close reading through an investigation of the major branches of philosophical inquiry. This Program covers the history of philosophy and culture, ethics and value theory, logic and the philosophy of science, theories about the nature of 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 simultaneously satisfying some of the transfer requirements needed 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 through Virtual Learning. Some of the required courses are available at the Lebanon Campus.

### *Career or 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 = 61)**

<b>General Education</b>		<b>Major Requirements</b>	
ENGL 101 English Composition I	3	ANTH 101 Introduction to Anthropology (D)	3
ENGL 102 English Composition II	3	CIS 105 Introduction to Software for Business	3
COMM 101 Effective Speaking	3	HIST 201 Western Civilization I	3
Core A Elective	3	HIST 202 Western Civilization II	3
Core B Elective	3	PHIL 101 Introduction to Philosophy	3
Core B Elective	3	PHIL 102 Logic	3
Core C Elective (MATH)	3	Select two from the following:	6
Core C Elective (Science)	3	PHIL 200 Comparative Religion	(3)
Core C Elective (Science or MATH)	3	PHIL 215 Philosophy of Science	(3)
General Education Transfer Elective	3	PHIL 225 Ethics: Belief and Action	(3)
Physical Education & Wellness	1	PSYC 101 General Psychology	3
	31	Transfer Elective	3
			30

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

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

<b>Fall Semester</b>	<b>Spring Semester</b>	<b>Fall Semester</b>	<b>Spring Semester</b>
ANTH 101 (D)	3	Core C Elective (Science)	3
COMM 101	3	ENGL 102	3
ENGL 101	3	HIST 202	3
HIST 201	3	PHIL 102	3
PHIL 101	3	PSYC 101	3
		Core A Elective	3
		Core B Elective	3
		Core C Elective	3
		PE & Wellness	1
		PHIL 200 or 215 or 225	3
		Transfer Elective	3
		CIS 105	3
		Core B Elective	3
		Core C Elective (Math)	3
		Gen. Ed. Transfer Elective	3
		PHIL 200 or 215 or 225	3
			3

*Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.*

# Academic Programs

## PHLEBOTOMY TECHNICIAN, Diploma Program - 0390

Health & Public Service Department

CIP Code: 51.1009

This program is designed to prepare a student for a career as a medical laboratory professional. The student will acquire the technical expertise to perform the duties of a Phlebotomy Technician/Phlebotomist. Phlebotomy Technicians are vital members of the health care team and should demonstrate qualities of accuracy, dependability, responsibility, and self-motivation. They must like working directly with patients and must be committed to quality health care. Phlebotomy Technicians must be able to work well under pressure and have excellent oral communication skills. The complete program is available at the Gettysburg, Harrisburg, Lancaster and York campuses. Some of the required courses are available at the Lebanon 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)), email [healthcareers@hacc.edu](mailto:healthcareers@hacc.edu) or call (717) 780-1988 or (800) 222-4222 extension 1988 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 can obtain positions as phlebotomists in acute care facilities, physician office laboratories, health maintenance organizations, long-term care facilities, clinics, and independent laboratories. (SOC Code: 31-9099 Phlebotomists)

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:

- Obtain blood specimens skillfully and safely
- Understand the legal and ethical implications of phlebotomy procedures
- Function well as members of a medical laboratory team
- Take the national entry-level credentialing examination administered by certifying agencies of the profession

### **PROGRAM REQUIREMENTS (TOTAL CREDITS = 18)**

<b>General Education</b>		<b>Major Requirements</b>	
BIOL 111 Introduction to Human Biology (or)	3	BIOL 105 Medical Terminology	3
BIOL 121 Anatomy and Physiology I	(4)	PBT 101 Phlebotomy	4
CIS 105 Introduction to Software for Business	3	PBT 102 Phlebotomy Clinical Experience	2
COMM 101 Effective Speaking (or)	3		9
COMM 203 Interpersonal Communication	(3)		
	9		

*Note: A grade of C or higher is required for BIOL 105; BIOL 111 or 121; PBT 101 and 102.*

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

# Academic Programs

## PHYSICAL SCIENCE, Associate in Arts Transfer Degree - 3070

Science Department

The Physical Science Program 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. With appropriate further education, graduates may eventually find jobs in astronomical research and/or planetarium operations (astronomy), within the petroleum industry, mining industry, as an environmental consultant or lawyer, or within a government agency (geology), at the National Weather Service, as a weather researcher, or broadcasting (meteorology), or within research and development, inspection, testing, and quality control, or other production-related jobs (physics). 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. The complete program is available at the Harrisburg and Lancaster campuses. Some of the required courses are available at the Gettysburg, Lebanon and York campuses.

### Career or 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:

- Transfer to and succeed in a Bachelor's program
- Demonstrate an understanding of scientific principles and concepts
- Appreciate scientific accomplishments and how they affect technology, politics and society
- Apply the scientific method to solve scientific problems
- Demonstrate computer literacy in data manipulation, mining, and analysis
- Perform technician work in a typical laboratory while following appropriate safety procedures
- Effectively communicate results both orally and through written reports
- Appreciate accomplishments in the arts and sciences

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 62)

General Education		Major Requirements	
ENGL 101 English Composition I	3	CHEM 102 General Inorganic Chemistry/Qual. Analysis	4
ENGL 102 English Composition II	3	GIS 141 Intro to Geographic Information Systems	3
COMM 101 Effective Speaking	3	PHYS 202 General Physics II (or)	4
Core A Elective	3	PHYS 212 Physics: Engineers/Scientists II	(4)
Core B Elective	3	*Program Electives	8
Core B Elective	3	Transfer Electives	9
Core C CHEM 101 General Inorganic I	4		28
Core C PHYS 201 (or) PHYS 211	4		
Core C MATH 121 (or) MATH 122	4		
General Education Transfer Elective	3		
Physical Education & Wellness	1		
	34		

<u>Astronomy*</u>	<u>Geology*</u>	<u>Meteorology*</u>	<u>Physics*</u>	<u>Forensics*</u>
ASTR 103 recommended	ASTR 103	ASTR 103	ASTR 104	BIOL 101
ASTR 104 recommended	CHEM 203	GEOG 101	GEOG 101	CHEM 202
GEOL 101	CHEM 204	GIS 161	GIS 161	CHEM 203
GEOL 102	GEOG 101	MATH 122	MATH 122	CHEM 204
GIS 161	GEOL 101 recommended	MATH 221	MATH 221	CJ 101
MATH 122	GEOL 102 recommended	MATH 222	MATH 222	CJ 108
MATH 220	GEOL 201 recommended	METR 101 recommended	PHYS 215 recommended	CJ 201
MATH 221	GIS 161			CJ 203
MATH 222	MATH 122			CJ 206
PHYS 215	MATH 221			
	MATH 222			

\*See advisor for recommended courses.

### 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
CHEM 101 (Core C)	CHEM 102	COMM 101	Core B Elective
ENGL 101	Core B Elective	Core A Elective	PHYS 202 or 212
GIS 141	ENGL 102	PHYS 201 or 211 (Core C)	Program Elective
MATH 121 or higher (Core C)	Gen. Ed. Transfer Elective	Program Elective	Transfer Elective
PE & Wellness	Transfer Elective	Transfer Elective	

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## PHYSICAL SCIENCE EDUCATION, Associate in Arts Transfer Degree - 3130

Science Department

The College's range of education programs allows students planning a career in teaching to complete the first two years of a transfer program and earn an associate in arts degree whether they plan to teach in elementary or secondary schools. All students should be aware of the standards of the Pennsylvania Department of Education and that they specify different preparations for elementary and secondary school teachers.

The PA State Board of Education passed new requirements for admission to, as well as exit from, professional education programs. On October 7, 2000, Title 22 of the PA School Code, Chapter 354, became law. This regulation affects every institution that prepares teachers in the Commonwealth of Pennsylvania. These requirements affect all (elementary and secondary) bachelors' level-education programs for PA Teacher Certification. Students who complete 48 credit hours after August 15, 2002 but prior to August 15, 2003 must have a 2.8 GPA (3.0 GPA after August 15, 2003) to enter professional courses leading to initial teacher certification. They are also required to attain a qualifying score on the Pre-Service Academic Program Assessment (PAPA) test.

Each student is required to have an ACT 34 Criminal Background Investigation and an ACT 151 Child Abuse Clearance prior to any practicum/student teaching experience and employment. The student should consider these factors prior to enrolling in this program.

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 entire program is available at the Harrisburg Campus. Some of the required courses are available at the Gettysburg, Lancaster, Lebanon, and York campuses.

### Career or Transfer Opportunities

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

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 64)

General Education		Major Requirements	
ENGL 101 English Composition I	3	EDUC 110 The Education Professional	3
ENGL 102 English Composition II	3	CHEM 102 General Inorganic Chemistry/Qualitative Analysis	4
COMM 101 Effective Speaking	3	PHYS 202 General Physics II (or)	4
Core A Elective	3	PHYS 212 Physics: Engineers & Scientists II	(4)
Core B Elective	3	*Program Specific Electives	8
Core B Elective	3	**Transfer Electives	<u>12</u>
Core C Elective (MATH 121-122 Elective)	3		31
Core C Elective (CHEM 101)	4		
Core C Elective (PHYS 201 (or) PHYS 211)	4		
General Education Transfer Elective	3		
Physical Education & Wellness	<u>1</u>		
	33		

\* Select one group: CHEM 203-204 or GEOL 101-102

\*\* Suggested Transfer Electives: ASTR 103, 104; BIOL 101, 102; CHEM 202; CPS 135-299; GEOL 101, 102; MATH 122 or higher; PHYS 215

### 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	
CHEM 101 (Core C)	4	CHEM 102	4	COMM 101	3	Gen. Ed. Transfer Elective	3
ENGL 101	3	Core A Elective	3	Core B Elective	3	PE & Wellness	1
MATH Elective (Core C)	3	Core B Elective	3	EDUC 110	3	Program Specific Elective	4
PHYS 201 or 211 (Core C)	4	ENGL 102	3	Program Specific Elective	4	Transfer Electives	8
		PHYS 202 or 212	4	Transfer Electives	4		

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## POLICE SCIENCE, Associate in Arts Career Degree - 6800

*Social Science Department*

The Police Science AA 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. The program may also be completed at the Gettysburg Campus by taking some online courses. Some of the required courses are available at the Lancaster, Lebanon, and York campuses.

### *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

### **PROGRAM REQUIREMENTS (TOTAL CREDITS = 63)**

<b>General Education</b>		<b>Major Requirements</b>	
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 108 Criminology	3
ENGL 106 Business Writing	(3)	CJ 109 Instrumentation and Technologies	3
COMM 101 Effective Speaking	3	CJ 201 Criminal Investigation	3
Core A Elective	3	CJ 203 Criminal Evidence	3
Core B Elective	3	CJ 206 Criminalistics	4
Core C Elective	3	CJ 208 Intermediate Criminalistics	4
Free Electives	6	CJ 212 Criminal Law and Procedure	3
Physical Education & Wellness	<u>1</u>	CJ 240 Ethics and Diverse Cultures (D)	3
	25	Criminal Justice Program Electives	<u>6</u>
			38

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

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

<b>Fall Semester</b>		<b>Spring Semester</b>		<b>Fall Semester</b>		<b>Spring Semester</b>	
CJ 101	3	CJ 104	3	Core A Elective	3	Core C Elective	3
CJ 108	3	CJ 109	3	Core B Elective	3	CJ 208	4
CJ 212	3	CJ 201	3	CJ 206	4	CJ 240 (D)	3
COMM 101	3	CJ 203	3	CJ Program Elective	3	CJ Program Elective	3
ENGL 101	3	ENGL 102 or 104 or 106	3	Free Elective	3	Free Elective	3
PE & Wellness	1						

*Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.*

# Academic Programs

## PRACTICAL NURSING, Certificate Program - 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 National League for Nursing Accreditation Commission. The complete program is available at the Harrisburg and Lancaster campuses. Some required courses are available at the Gettysburg, Lebanon, and York 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)), email [healthcareers@hacc.edu](mailto:healthcareers@hacc.edu) or call (717) 780-1988 or (800) 222-4222 extension 1988 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	$\frac{3}{6}$
		BIOL 111 Intro to Human Biology (or)	3		
		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	$\frac{10}{34}$		

### RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

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

Spring Semester	Summer Session	Fall Semester	
BIOL 100 or 221	1 or 4	NURS 102	10
BIOL 111 or 121	3 or 4	PSYC 101	3
ENGL 101	3	SOCI 201	3
NURS 100	10		

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

# Academic Programs

## PRE-DIETETICS, Associate in Arts Transfer Degree - 3050

Science Department

Students complete the science courses and other general education requirements that are commonly required for transfer to schools offering baccalaureate degrees in dietetics. 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 only available at the Harrisburg Campus. The program may also be completed at the Gettysburg Campus by taking some online courses. Some of the required courses are available at the Lancaster, Lebanon, and York campuses.

### Career or Transfer Opportunities

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

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 62)

General Education		Major Requirements	
ENGL 101 English Composition I	3	BIOL 121 Anatomy and Physiology I	4
ENGL 102 English Composition II	3	BIOL 122 Anatomy and Physiology II	4
COMM 101 Effective Speaking	3	BIOL 221 Microbiology	4
Core A Elective	3	CHEM 102 General Inorganic Chemistry/Qualitative Analysis	4
Core B Elective	3	CIS 105 Introduction to Software for Business	3
Core B Elective	3	CULI 221 Basic Foods: Preparation and Production	4
Core C CHEM 101 General Inorganic Chemistry I	4	NUTR 104 Nutrition	3
Core C MATH 202 Introduction to Statistics	4	Transfer Elective	<u>3</u>
Core C MATH 103 recommended	3		29
General Education Transfer Elective	3		
Physical Education & Wellness	<u>1</u>		
	33		

### 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		Summer		Fall Semester		Spring Semester	
CHEM 101 (Core C)	4	CHEM 102	4	Gen. Ed. Transfer Elective	3	BIOL 121	4	BIOL 122	4
Core C (Math 103)	3	Core A Elective	3			COMM 101	3	BIOL 221	4
ENGL 101	3	Core B Elective	3			Core B Elective	3	CIS 105	3
PE & Wellness	1	ENGL 102	3			Core C (MATH 202)	4	CULI 221	4
Transfer Elective	3	NUTR 104	3						

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## PRE-HEALTH PROFESSIONS, Associate in Science Transfer 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 Harrisburg and Lancaster campuses. Some of the required courses are available at the Gettysburg, Lebanon, and York campuses, as well as through Virtual Learning.

### *Career or 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
- Appreciate accomplishments in the arts and sciences
- 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
- Construct outlines that include an introduction, a well-organized body, effective transitions, source citations, and a conclusion
- Demonstrate critical reading and critical thinking skills by integrating the ideas of others through the analysis and synthesis of information

### **PROGRAM REQUIREMENTS (TOTAL CREDITS = 61)**

<b>General Education</b>		<b>Major Requirements</b>	
ENGL 101 English Composition I	3	CIS 105 Intro to Software of Business or higher	3
ENGL 102 English Composition II	3	MATH 103 College Algebra (Core C Math)	3
COMM 101 Effective Speaking	3	PSYC 101 General Psychology (Core B)	3
Core A Elective	3	SOCI 201 Intro to Sociology (Core B & D)	3
Core C Elective (Math or Science)	3	*Program Electives	<u>27</u>
Core C Elective (Science)	3		39
General Education Transfer Elective	3		
Physical Education & Wellness	<u>1</u>		
	22		

*\*Select from the following courses: BIOL 101, 102, 121, 122, 215, 221, CHEM 101, 102, 203, 204, MATH 104, 119, 121, 202, PHYS 201, & 202*

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

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

<b>Fall Semester</b>		<b>Spring Semester</b>		<b>Fall Semester</b>		<b>Spring Semester</b>	
CIS 105 or higher	3	Core A Elective	3	GE Transfer Elective	3	Core C Electives	6
COMM 101	3	ENGL 102	3	Program Electives	9-12	Program Electives	9-12
ENGL 101	3	PE & Wellness	1	SOCI 201 (Core B)	3		
MATH 103 (Core C)	3	Program Electives	6-8				
Program Elective	3-4	PSYC 101 (Core B)	3				

*Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.*

# Academic Programs

## PROFESSIONAL BOOKKEEPING, Diploma Program - 0360

*Business Studies Department*

CIP Code: 52.0302

Students are prepared to take 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 diploma focuses on the essential skills needed in today's business environment and put students on the fast track to a rewarding career. The complete program is available at the Harrisburg and Lancaster campuses. Some of the required courses are available at the Gettysburg, Lebanon, and York campuses, as well as 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
- Write and speak effectively in a business context
- Complete bank reconciliations and track all needed payroll information for businesses
- Pass the Certified Bookkeeper exam

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

<b>General Education</b>		<b>Major Requirements</b>		<b>Other Required Courses</b>	
ENGL 106 Business Writing	3	ACCT 101 Principles of Accounting I	4	CIS 105 Intro to Software for Business	3
		ACCT 200 Principles of Accounting II	4		
		ACCT 208 Professional Bookkeeping	3		
		ACCT 215 Microcomputer Accounting Applications	<u>3</u>		
			14		

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

# Academic Programs

## PSYCHOLOGY, Associate in Arts Transfer Degree - 5150

*Social Science Department*

The Psychology AA 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. All required courses for the Psychology major are offered at the Harrisburg, Lancaster, and York campuses. Most of the required courses are offered at the Gettysburg and Lebanon campuses, as well as through Virtual Learning; but students will have to travel to Harrisburg or Lancaster for some required courses.

### *Career or 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 = 63)**

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	PSYC 241 Research Design and Analysis I	4	Transfer Electives	9
ENGL 102 English Composition II (or) ENGL 104 Technical Writing	3	PSYC 242 Research Design and Analysis II	4		
COMM 101 Effective Speaking	3	CIS (or) CPS Elective	3		
Core A Elective	3	PHIL 102 Logic (or) PHIL 101 Introduction to Philosophy (or)	(3)		
Core B PSYC 101 General Psychology	3	PHIL 215 Philosophy of Science	(3)		
Core B Elective	3	BIOL 101 General Biology I (or)	4		
Core C (MATH 103, 119, or 121)	3	BIOL 111 Introduction to Human Biology	(3)		
Core C Science Elective	3	Psychology Electives	6		
Core C Math or Science Elective	3	Select one course from the following groupings:			
General Education Transfer Elective	3	PSYC 209 Life Cycle Development (or)	3		
Physical Education & Wellness	1	PSYC 211 Psychology of Adolescents (or)	(3)		
	31	PSYC 212 Child Growth & Development	(3)		
		PSYC 213 Abnormal Psychology (or)	3		
		PSYC 221 Social Psychology	(3)		
			23		

### **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	
CIS or CPS Elective	3	BIOL 101 or 111	4-3	Core B Elective	3	Core A Elective	3
Core B Elective (PSYC 101)	3	COMM 101	3	Core C Elective	3	PSYC 242	4
Core C Elective (MATH 103, 119 or 121)	3	ENGL 102 or 104	3	Core C Elective (Science)	3	Transfer Electives	9
ENGL 101	3	PHIL 102, 101 or 215	3	PSYC 241	4		
General Ed Transfer Elective	3	PSYC Elective	3	PSYC Elective	3		
PE & Wellness	1						

*Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.*

# Academic Programs

## RADIOLOGY INFORMATICS, Associate in Science Degree - 3780

Health & Public Service Department

The Radiology Informatics AS 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. 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. Graduates are prepared to take all five levels of certification exams through the PACS Administrators Registry and Certification Association (PARCA). Additionally, graduates with a minimum of three years’ previous experience in healthcare imaging or imaging informatics, meet the educational and continuing education requirements for taking the American Board of Imaging Informatics Certification (ABII). 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. Some required courses are available at the Harrisburg, Lebanon, and Gettysburg campuses.

*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 =74)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	RADI 100 DICOM & HL7 I	2	BIOL 111 Introduction to Human Biology	3
ENGL 106 Business Writing	3	RADI 101 DICOM & HL7 II	3	CIS 140 Intermediate Micro Database	3
COMM 203 Interpersonal Communication	3	RADI 102 RADI Regulations, Quality Control, & Security	3	CNT 120 Network Comm. Tech I	3
Core A Elective	3	RADI 103 PACS Interface & Systems Analysis I	2	ELEC 125 Introduction to PC Technology	3
Core B Elective	3	RADI 201 RADI Project Management I	3	RADT 104 Intro to Radiology Informatics	4
Core C Elective (Recommend: MATH 103)	3	RADI 202 PACS Interface & Systems Analysis II	3	RADT 110 Radiology Basics for Informatics	4
Free Elective (Recommend: CIS 105)	3	RADI 203 RADI Advanced Concepts I	4		20
Physical Education & Wellness	1	RADI 204 RADI Advanced Concepts II	4		
	22	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, ENGL, MATH, RADI, 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	Spring Semester	Summer	Fall Semester	Spring Semester	Summer
CNT 120	3	BIOL 111	3	COMM 203	3
Core C Elective	3	RADI 101	3	Core A Elective	3
ENGL 101	3	RADI 102	3	ENGL 106	3
RADI 100	2	RADT 110	4	RADI 103	2
RADT 104	4			RADI 202	3
				RADI 210	3
				CIS 140	3
				Free Elective	3
				RADI 203	4
				RADI 211	3
				PE & Wellness	1
				RADI 204	4
				RADI 205	2

*Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.*

# Academic Programs

## RADIOLOGIC TECHNOLOGY - COLLEGE BASED, Associate in Science Career Degree - 3760

Health & Public Service Department

Students learn to perform radiographic studies, including preparation and positioning of patients, and exposure and development of radiographic films. 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. The complete program is only available at the Lancaster Campus. Some of the required courses are available at all of HACC's campuses, as well as through Virtual Learning.

*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)), email [healthcareers@hacc.edu](mailto:healthcareers@hacc.edu) or call (717) 780-1988 or (800) 222-4222 extension 1988 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 radiologic technologists or radiographers in hospital radiology departments and independent medical-imaging centers.

### Competency Profile

This curriculum is designed to prepare students to:

- Function as a competent entry-level radiographer
- Demonstrate critical thinking skills in clinical practice
- Exhibit respect and compassionate behavior
- Demonstrate effective communication skills
- Function as a professional health care provider

### PROGRAM REQUIREMENTS (TOTAL CREDITS =80)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	RADT 100 Intro to Radiologic Proc	3	BIOL 121 Anatomy and Physiology I	4
ENGL 102 English Composition II	3	RADT 101 Imaging Equipment	3	BIOL 122 Anatomy and Physiology II	4
COMM 101 Effective Speaking (or)	3	RADT 102 Introduction to Radiologic Tech	4	BIOL 230 Physiological Pathology	3
COMM 203 Interpersonal Communication	(3)	RADT 103 Imaging and Processing	3	PHYS 151 Physics for Technicians	4
Core A Elective	3	RADT 105 Radiation Protection and Biology	2		15
Core B Elective (PSYC 101 or SOCI 201 D)	3	RADT 106 Radiologic Tech Clinical Intro	3		
Core C Elective (MATH 103)	3	RADT 107 Radiographic Procedures I	3		
Free Elective	3	RADT 108 Radiation Characteristics & Production	3		
Physical Education & Wellness	1	RADT 109 Radiologic Tech Clinical I	2		
	22	RADT 201 Radiographic Procedures II	3		
		RADT 203 Radiologic Tech Clinical II	3		
		RADT 205 Radiographic Pathology	2		
		RADT 207 Radiologic Tech Clinical III	3		
		RADT 209 Image Analysis	2		
		RADT 210 Intro to Computer Tomography	1		
		RADT 211 Radiologic Tech Clinical IV	3		
			43		

Note: Courses in the following disciplines require a grade of C or higher: ENGL, COMM, BIOL, MATH, PHYS, and RADT

### RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Fall Semester	Spring Semester	Summer	Fall Semester	Spring Semester	Summer
BIOL 121	4	BIOL 122	4	BIOL 230	3
ENGL 101	3	PHYS 151	4	RADT 107	3
MATH 103	3	RADT 100	3	RADT 108	3
RADT 102	4	RADT 105	2	RADT 109	2
		RADT 106	3	RADT 201	3
				RADT 203	3
				Core A Elective	3
				Core B Elective	3
				RADT 103	3
				RADT 207	3
				RADT 209	2
				Free Elective	3
				PE & W	1
				RADT 205	2
				RADT 211	3
				RADT 210	1

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## REAL ESTATE MARKETING, Associate in Arts Career Degree - 1720

*Business Studies Department*

The Real Estate Marketing AA degree program is designed to prepare students to enter the residential real estate market as a Real Estate Sales Professional. The program includes specialty courses in real estate fundamentals, practice, appraisal, and residential construction. In addition, students gain a broad knowledge of general business practices, specifically marketing. The Real Estate Marketing AA and the Marketing AA degree programs are 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 program is only available at the Harrisburg Campus. Some of the required courses are available at the Gettysburg, Lancaster, Lebanon, and York campuses, as well as through Virtual Learning.

### *Career Opportunities*

Graduates of this program prepare to enter the residential real estate sales profession and take the Pennsylvania Real Estate Commission's examination for the Salesperson's License. Upon passing the licensing exam, program graduates are prepared for entry-level residential sales positions in residential real estate organizations.

### *Competency Profile*

This curriculum is designed to prepare students to:

- Discuss the practice of the real estate industry and residential sales transactions
- Discuss the fundamentals of property ownership
- Prepare and deliver oral and written presentation on real estate marketing concepts
- Utilize various methods of collecting, processing, and analyzing information about organizations, consumers, and the real estate market to make informed real estate marketing decisions
- Describe the effects of social, legal, ethical, and technological forces on real estate marketing decisions
- Develop and deliver a professional real estate sales presentation
- Perform and work with a team to apply real estate concepts
- Identify the cultural, psychological, and sociological factors which influence the real estate market
- Use the appropriate software and technologies to complete real estate transactions
- Utilize research methods to collect and analyze information about the real estate market

### **PROGRAM REQUIREMENTS (TOTAL CREDITS = 64)**

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	ACCT 101 Principles of Accounting I	4	MATH 100 College Mathematics for Business or higher	3
ENGL 102 English Composition II (or)	3	BUSI 101 Introduction to Business	3	CIS 105 Intro to Software for Business	<u>3</u>
ENGL 106 Business Writing	(3)	BUSI 201 Business Law I	3		<u>6</u>
COMM 101 Effective Speaking	3	MGMT 201 Principles of Management (or)	3		
Core A Elective	3	MGMT 221 Small Business Development & Mgmt	(3)		
Core B Elective	3	MKTG 201 Principles of Marketing	3		
Core C Elective	3	MKTG 205 Visual Merchandising	3		
Free Elective	3	MKTG 212 Professional Selling	3		
Physical Education & Wellness	<u>1</u>	MKTG 235 Digital Media Marketing	3		
	22	RE 101 Real Estate Fundamentals	3		
		RE 102 Real Estate Practice	3		
		RE 108 Appraisal of Residential Property	3		
		RE 205 Residential Real Estate Construction	<u>2</u>		
			36		

### **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	
BUSI 101	3	ACCT 101	4	BUSI 201	3	Core C Elective	3
ENGL 101	3	COMM 101	3	CIS 105	3	Free Elective	3
MATH 100 or higher	3	ENGL 102 or 106	3	Core A Elective	3	MGMT 201 or 221	3
MKTG 201	3	MKTG 205	3	Core B Elective	3	MKTG 235	3
*RE 101	3	PE & Wellness	1	MKTG 212	3	RE 205	2
		*RE 102	3	RE 108	3		

\*RE 101 and RE 102 may be taken sequentially in the Fall or Spring semesters.

*Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.*



# Academic Programs

## **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.

<b>Semester I (Summer)</b>		<b>Semester II (Fall)</b>		<b>Semester III (Spring)</b>		<b>Semester IV (Summer)</b>	
BIOL 121	4	BIOL 122	4	RESP 130	2	RESP 170	4
CHEM 100 (Core C)	3	ENGL 102	3	RESP 140	5	RESP 175	2
ENGL 101	3	RESP 120	3	RESP 150	3		
RESP 100	2	RESP 190	2	RESP 160	2		
		RESP 200	3				
<b>Semester V (Fall)</b>		<b>Semester VI (Spring)</b>		<b>Semester VII (Summer I)</b>		<b>Semester VIII (Fall)</b>	
Core A Elective	3	Core B Elective	3	RESP 245	2	Free Elective	3
PE & Wellness	1	RESP 230	2	RESP 270	4	RESP 275	6
RESP 205	2	RESP 235	3				
RESP 210	5	RESP 250	2				
RESP 260	2						

*Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.*

# Academic Programs

## SOCIAL SCIENCES, Associate in Arts Transfer Degree - 5090

*Social Science Department*

The Social Sciences AA program is designed for students who plan to seek a four-year degree in anthropology, economics, geography, political science, history, public administration, sociology, or related field, at a four-year institution. Students are able to select their social science courses to fit their area of interest. 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 institution's college catalog. The complete program is available at all of HACC's campus locations; however, depending on the student's area of interest, taking online courses or traveling to other campuses may be required to get certain specific courses.

### *Career or 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 social science discipline at a four-year institution
- Define the fundamental concepts, which include but are not limited to, terminology, institutions, and issues associated with the disciplines studied by the student
- Understand the essential of methodologies, perspectives, approaches, processes, and sources customarily used in the field (s) of study
- Describe the major issues and/or future challenges to the current problems and concerns discussed in the fields of study along with possible responses, solutions, and/or remedies
- Describe how factors such as culture, institutions, environment, knowledge, beliefs, and/or ideology have affected human activity and outcomes at the local, national, and international levels
- Demonstrate an understanding of the technology and communication forms and methods used in discussing and disseminating knowledge and ideas in the specific fields of study.

### **PROGRAM REQUIREMENTS (TOTAL CREDITS = 61)**

<b>General Education</b>		<b>Major Requirements</b>	
ENGL 101 English Composition I	3	**Computer Elective	3
ENGL 102 English Composition II	3	*ENGL 201-279 English Literature Elective	3
COMM 101 Effective Speaking	3	*PHIL 100-299 Philosophy Elective	3
Core A Elective	3	***Social Science Electives	15
Core B Elective	3	*Transfer Electives	6
Core B Elective	3		30
Core C Elective	3		
*Core C Elective Math	3		
*Core C Elective Science	3		
General Education Transfer Elective	3		
Physical Education & Wellness	1		
	31		

\* Select courses that are required by the transfer institution.

\*\*Choose any CIS course except CIS 100 (CIS 105 is recommended).

\*\*\*Select Social Science electives from the following subjects: Anthropology, Economics, Geography, Government and Politics, History, Psychology, and Sociology.

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

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

<b>Fall Semester</b>		<b>Spring Semester</b>		<b>Fall Semester</b>		<b>Spring Semester</b>	
Core A Elective	3	COMM 101	3	Computer Elective	3	Core C Elective (Science)	3
Core B Elective	3	Core B Elective	3	Gen. Ed. Transfer Elective	3	Social Science Electives	6
Core C Elective (Math)	3	Core C Elective	3	Philosophy Transfer Elective	3	Transfer Electives	6
ENGL 101	3	ENGL 102	3	Social Science Electives	6		
PE & Wellness	1	English Literature Elective	3				
Social Science Elective	3						

*Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.*

# Academic Programs

## SOCIAL SERVICES, Associate in Arts Transfer Degree - 5060

Health & Public Service Department

This program prepares students for transfer to four-year colleges and universities offering baccalaureate degrees in social work, psychology, human services, or other social service professions. The degree also prepares students for work in the Human Services field. Human service professionals work directly with clients and are accurate, reliable, responsible, and self-motivated. In addition, they work well under pressure and possess excellent written and oral communication skills. All students interested in this program must take HUMS 100, Introduction to Human Services, as the first course in the curriculum. 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. Some of the required courses are available at the Lebanon Campus, as well as through Virtual Learning.

### Career or Transfer Opportunities

This transfer curriculum is provided as a guide for students planning to transfer to baccalaureate degree granting institution. Transfer students may continue their education in a wide variety of social services field such as mental health, mental retardation, 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 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
- Conduct interviews for purposes of gathering information, assessment, and development of service plans
- Work effectively with clients and their families to plan treatment or service
- Write effective contact notes, social histories and maintain client files
- Make referrals and facilitate clients moving through the social service system
- Recognize the characteristics of racially and culturally diverse populations
- Establish and maintain effective working relationships with clients and their families
- Perform case management responsibilities in a variety of settings
- Discuss the ethics and laws applicable to the human service field
- Write and speak effectively
- Appreciate accomplishments in the arts and sciences

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 62)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	HUMS 100 Introduction to Human Services	3	HIST 103 History of the US I	3
ENGL 102 English Composition II	3	HUMS 120 Social Welfare Programs and Policies	3	HIST 104 History of the US II	3
COMM 101 Effective Speaking	3	HUMS 121 Skills and Methods in Human Services I	3	GP 200-299	<u>3</u>
*Core A Elective (Rec: PHIL 225)	3	HUMS 122 Skills and Methods in Human Services II	3		9
Core B PSYC 101 General Psychology	3	HUMS 200 Group Work Practice	3		
Core B SOCI 201 Intro to Sociology (D)	3	HUMS 206 Human Development in a Social Environment (D)	3		
Core C Elective Math (Rec: MATH 202)	3	HUMS 215 Fieldwork Practicum	<u>4</u>		
Core C BIOL 101 (or) BIOL 111	3 (4)		22		
Core C Elective	3				
**General Education Transfer Elective	3				
Physical Education & Wellness	<u>1</u>				
	31				

\*Students must select a Philosophy course to fulfill their Core A requirement.

\*\* Students must select a Literature course (ENGL 200-299).

### 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	Summer	Fall Semester	Spring Semester	
Core B (PSYC 101)	3	Core B (SOCI 201) (D)	3	BIOL 101 or 111	3 or 4
Core C (MATH 202)	3	ENGL 102	3	Core C Elective	3
ENGL 101	3	HUMS 120	3	Gen Ed Transfer Elective	3
HIST 103	3	HUMS 121	3	GP 200-299	3
HUMS 100	3	HUMS 206 (D)	3	HUMS 215	4
				HUMS 200	3

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## STRUCTURAL ENGINEERING TECHNOLOGY, Associate in Science Career 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 many railroad structures, in addition, to building frames and foundations. 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. Some of the required courses are available at the York Campus.

### Career Opportunities

Graduates of this program are prepared for entry-level 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 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
- 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
- Analyze and interpret accomplishments in the arts and sciences

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 61)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	ENGR 102 Engineering & Engineering-Tech Orientation	2	MATH 103 College Algebra (Core C)	3
ENGL 104 Technical Writing	3	CAD 156 AutoCAD for Architecture	3	MATH 104 Trigonometry	3
COMM 203 Interpersonal Communication	3	GTEC 104 Engineering Materials & Processes	3	*Program Electives	6
Core A Elective	3	GTEC 201 Statics	3		12
Core B Elective	3	CVTE 103 Surveying	3		
Free Elective	3	CVTE 208 Strength of Materials	3		
Physical Education & Wellness	1	GTEC 208 Strength of Materials Lab	1		
	19	ENGR 271 Design for the Environment	3		
		SET 201 Intro Structural Engineering Technology	3		
		SET 202 Structural Design Fundamentals & Concepts	3		
			27		

\*Select from the following courses: ACCT 101, ARCH 110, 130, 253, BCT 215, CAD 115, CHEM 101, CVTE 120, GREN 265, MATH 202, 119, 121, MGMT 201, MDES 201, 206, PHYS 201, and 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 Session	Fall Semester III	Spring Semester IV
CAD 156 3	COMM 101 3	CVTE 103 3	Core B Elective 3	ENGR 271 3
Core A Elective 3	ENGL 104 3		CVTE 208 3	GTEC 208 1
ENGL 101 3	GTEC 104 3		Free Elective 3	Program Elective 3
ENGR 102 2	GTEC 201 3		Program Elective 3	SET 202 3
MATH 103 (Core C) 3	MATH 104 3		SET 201 3	
PE & Wellness 1				

### SUGGESTED ADDITIONAL SEQUENCE FOR STUDENTS TRANSFERRING TO A BSSET PROGRAM

Semester V for transfer students (Fall)	Semester VII for transfer students (Spring)
CHEM 101 (Inorganic Chem) 4	Core B Elective 3
Core A Elective 3	MATH 121 (Calculus I) 4
MATH 119 (Pre-Calculus, 12 Week Session) 4	MATH 202 (Intro to Statistics) 4
PHYS 201 (General Physics I) 4	PHYS 202 (General Physics II) 4
TOTAL CREDITS 15	TOTAL CREDITS 15

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## STRUCTURAL ENGINEERING TECHNOLOGY, Certificate Program - 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 many 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 components such as beams, columns, and joists. 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
- 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

### **PROGRAM REQUIREMENTS (TOTAL CREDITS = 31)**

<b>General Education</b>	<b>Major Requirements</b>		<b>Other Required Courses</b>	
	CAD 156 AutoCAD for Architecture	3	MATH 103 College Algebra	3
	CVTE 103 Surveying	3	MATH 104 Trigonometry	3
	CVTE 208 Strength of Materials	3	*Program Electives	$\frac{1}{7}$
	ENGR 102 Engineering & Engineering-Tech Orientation	2		
	GTEC 104 Engineering Materials & Processes	3		
	GTEC 208 Strength of Materials Lab	1		
	GTEC 201 Statics	3		
	SET 201 Intro Structural Engineering Technology	3		
	SET 202 Structural Design Fundamentals & Concepts	$\frac{3}{24}$		

\*Select from the following courses: ACCT 101, ARCH 110, 130, 253, BCT 215 CAD 115, CVTE 120, ENGR 271, GREN 265, MGMT 201, MDES 201, & 206.

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

# Academic Programs

## SURGICAL TECHNOLOGY, Associate in Science Career Degree - 3620

Health & Public Service Department

The Surgical Technology 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 operations. The program provides supervised clinical experience that enables students to develop surgical skills required for entry into practice. Students complete the corresponding certificate program with an option to complete this associate degree program. Graduates of the certificate program are eligible to take the National Board for Surgical Technology and Surgical Assisting (NBSTSA) National Examination for the Certified Surgical Technologist. The associate degree option allows graduates to prepare for additional responsibilities in surgical services. The program is accredited by the Commission on Accreditation of Allied Health Education Programs upon the recommendation of the Accreditation Review Committee on Education in Surgical Technology. The complete program is available at the Harrisburg Campus. Some of the required courses are available at all of HACC's campus locations, as well as through Virtual Learning.

*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)), email [healthcareers@hacc.edu](mailto:healthcareers@hacc.edu) or call (717) 780-1988 or (800) 222-4222 extension 1988 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 of this program prepare for employment as surgical technologists in hospital operating rooms, outpatient surgery centers, clinics, and physician's offices.

### Competency Profile

This curriculum is designed to prepare students to:

- Identify the roles and responsibilities of all surgical team members
- Demonstrate the ability to anticipate the needs of surgical patients by properly preparing the operating room suite, equipment, and instrumentation required for surgical interventions
- Display empathy for surgical patients and their significant others
- Demonstrate a professional demeanor when communicating with patients and fellow team members
- Demonstrate a surgical conscience
- Participate as an effective member of the surgical team throughout the preoperative, intraoperative, and immediate postoperative periods
- Write and speak effectively
- Appreciate accomplishments in the arts and sciences

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 74)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	SURG 101 Concepts in Surgical Tech	2	BIOL 105 Medical Terminology	3
ENGL 102 English Composition II (or)	3	SURG 105 Pharmacology	1	BIOL 121 Anatomy & Physiology I	4
ENGL 104 Technical Writing	(3)	SURG 110 Introduction to Surgical Tech.	4	BIOL 122 Anatomy & Physiology II	4
COMM 101 Effective Speaking or	3	SURG 111 Surgical Procedures I	4	BIOL 221 Microbiology	4
COMM 203 Interpersonal Communication	(3)	SURG 112 Surgical Procedures II	4	BIOL 230 Physiological Pathology	3
Core A Elective	3	SURG 210 Surgical Clinical Externship I	4	CIS 105 Introduction to Software	3
Core B, PSYC 101 General Psychology	3	SURG 220 Surgical Clinical Externship II	6		21
Free Elective	3	SURG 230 Surgical Clinical Externship III	9		
Physical Education & Wellness	1		34		
	19				

Note: A grade of C or higher is required for all BIOL and SURG courses; ENGL 101, 102 or 104; and COMM 101 or 203.

# Academic Programs

## RECOMMENDED SEQUENCE FOR ALL FULL-TIME STUDENTS

<b>Fall Semester I</b>		<b>Spring Semester I</b>		<b>Fall Semester II</b>		<b>Spring Semester II</b>	
BIOL 121	4	BIOL 105	3	CIS 105	3	Free Elective	3
BIOL 221	4	BIOL 122	4	Core A Elective	3	PE & Wellness	1
COMM 101 or 203	3	ENGL 102 or 104	3	SURG 101	2	SURG 111	4
ENGL 101	3	PSYC 101 (Core B)	3	SURG 105	1	SURG 210	4
				SURG 110	4		
<b>Fall Semester III</b>		<b>Spring Semester III</b>					
SURG 112	4	BIOL 230	3				
SURG 220	6	SURG 230	9				

*Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.*

# Academic Programs

## SURGICAL TECHNOLOGY, Certificate Program - 3220

Health & Public Service Department

CIP Code: 51.0909

The Surgical Technology 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 operations. 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. The program is accredited by the Commission on Accreditation of Allied Health Education Programs upon the recommendation of the Accreditation Review Committee on Education in Surgical Technology. The complete program is available at the Harrisburg Campus. Some of the required courses are available at the Lancaster, Lebanon, and York 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)), email [healthcareers@hacc.edu](mailto:healthcareers@hacc.edu) or call (717) 780-1988 or (800) 222-4222 extension 1988 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 of this program prepare for employment as surgical technologists in hospital operating rooms, outpatient surgery centers, clinics, and physician's offices. (SOC Code: 29-2055 Surgical Technologists)

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:

- Identify the roles and responsibilities of all surgical team members
- Demonstrate the ability to anticipate the needs of surgical patients by properly preparing the operating room suite, equipment, and instrumentation required for surgical interventions
- Display empathy for surgical patients and their significant others
- Demonstrate a professional demeanor when communicating with patients and fellow team members
- Demonstrate a surgical conscience
- Participate as an effective member of the surgical team throughout the preoperative, intraoperative, and immediate postoperative periods

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 49)

General Education	Major Requirements		Other Required Courses	
	SURG 101 Concepts in Surgical Tech.	2	BIOL 105 Medical Terminology	3
	SURG 105 Pharmacology	1	BIOL 121 Anatomy & Physiology I	4
	SURG 110 Introduction to Surgical Tech.	4	BIOL 122 Anatomy & Physiology II	4
	SURG 111 Surgical Procedures I	4	BIOL 221 Microbiology	4
	SURG 112 Surgical Procedures II	4		15
	SURG 210 Surgical Clinical Externship I	4		
	SURG 220 Surgical Clinical Externship II	6		
	SURG 230 Surgical Clinical Externship III	9		
		34		

Note: A grade of C or higher is required for all BIOL and SURG courses.

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

# Academic Programs

## TECHNOLOGY STUDIES, Associate in Applied Science Career Degree - 4680

*Engineering & Technology Department*

The Technology Studies AA degree prepares students for job advancement in technology-dependent fields such as computer technology, building construction, carpentry, electronics, green technology, heating, ventilating and air conditioning, electrical, civil and municipal engineering, automated systems maintenance and manufacturing, machine design, and water resources to name a few. This program is designed to afford students with the flexibility to tailor their coursework to meet their individual occupational goals. The complete program is available at the Harrisburg and York campuses, as well as through Virtual Learning. Some of the required courses are available the Lancaster and Lebanon campuses.

### *Career Opportunities*

Advancement in technology-dependent fields related to the plan of study.

### *Competency Profile*

This curriculum is designed to prepare students to:

- Utilize computer programs and recognize the importance of computers in today's technology
- Demonstrate specialized vocation skills in the chosen specialty area
- Write and speak effectively
- Appreciate accomplishments in the arts and sciences

### **PROGRAM REQUIREMENTS (TOTAL CREDITS = 61)**

<b>General Education</b>		<b>Major Requirements</b>	
ENGL 101 English Composition I	3	CIS 105 Intro to Software for Business or higher	3
ENGL 102 English Composition II (or)	3	MATH 161 Technical Math for General Technology (or)	3
ENGL 104 Technical Writing (or)	(3)	MATH 103 College Algebra (or)	(3)
ENGL 106 Business Writing	(3)	MATH 104 Trigonometry (or)	(3)
COMM 101 Effective Speaking (or)	3	MATH 119 Pre-Calculus (or)	(4)
COMM 203 Interpersonal Communication	(3)	MATH 121 Calculus	(4)
Core A Elective	3	*Program Specific Electives	<u>33</u>
Core B Elective	3		39
Core C Elective	3		
Free Elective	3		
Physical Education & Wellness	<u>1</u>		
	22		

*\*Select program specific electives from the following: ABCC (4 credits); ABCE (4 credits); ABCH (4 credits); ABCP (4 credits); AOS (3 credits); ARCH (2-4 credits); BCT (3 credits); CAD (1-3 credits); CARP (3 credits); CIS (110-299 3 credits); CISE (3 credits); CNT (3 credits); CPS (3 credits); CVTE (3-4 credits); ELEC (1-4 credits); ELOC (2 credits); ENGR (100-271 2 credits); FIRE (3 credits); GIS (3-4 credits); GREN (3 credits); GTEC (1-4 credits); HBR (3 credits); HVAC (4 credits); IA (2-4 credits); IEC (4 credits); IMT (3 credits); KCA (5 credits); MATH 119, 121, 122, 221 (6-8 credits); MDES (1-4 credits); MDRF (1-3 credits); MWT (1-3 credits); NFAB (3 credits); SET (3 credits); UBC (2 credits); WEB (3 credits); WELD (3 credits); WOOD 102.*

*Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.*

# Academic Programs

## TECHNOLOGY STUDIES, Certificate Program - 4400

Engineering & Technology Department

CIP Code: 15.9999

The Technology Studies certificate prepares students for job advancement in technology-dependent fields, such as computer technology, building construction, carpentry, electronics, green technology, heating, ventilating and air conditioning, electrical, civil and municipal engineering, automated systems maintenance and manufacturing, machine design, and water resources to name a few. This certificate is designed to afford students with the flexibility to tailor their coursework to meet their individual occupational goals. The complete program is available at the Harrisburg and York campuses, as well as through Virtual Learning. Some of the required courses are available at the Lancaster and Lebanon campuses.

### Career Opportunities

Advancement in technology-dependent fields related to the student's concentrated area of study.

(SOC Code: Multiple codes depending on the field of study chosen)

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 computer programs and recognize the importance of computers in today's technology
- Demonstrate specialized vocation skills in the chosen specialty area

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 30)

General Education	Major Requirements	
	CIS 105 Intro to Software for Business or higher	3
	MATH 161 Technical Math for General Technology (or)	3
	MATH 103 College Algebra (or)	(3)
	MATH 104 Trigonometry (or)	(3)
	MATH 119 Pre-Calculus (or)	(4)
	MATH 121 Calculus I	(4)
	*Program Specific Electives	<u>24</u>
		30

\*Select program specific electives from the following: ABC (4 credits); AOS (3 credits); ARCH (2-4 credits); BCT (3 credits); CAD (1-3 credits); CARP (3 credits); CIS (110-299 3 credits); CISE (3 credits); CNT (3 credits); CPS (3 credits); CVTE (3-4 credits); ELEC (1-4 credits); ELOC (2 credits); ENGR (100 – 271 3 credits); FIRE (3 credits); GIS (3-4 credits); GREN (3 credits); GTEC (1-4 credits); HBR (3 credits); HVAC (4 credits); IA (2-4 credits); IEC (4 credits); IMT (3 credits); KCA (5 credits); MATH 119, 121, 122, 221 (6-8 credits); MDES (1-4 credits); MDFR (1-3 credits); MWT (1-3 credits); NFAB (3 credits); SET (3 credits); UBC (2 credits); WEB (3 credits); WELD (3 credits).

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

# Academic Programs

## TECHNOLOGY STUDIES, Diploma - 0640

*Engineering & Technology Department*

The Technology Studies Diploma degree prepares students for entry-level jobs or the opportunity to gain new skills in technology-dependent fields, such as building construction, building codes, heating, ventilating and air-conditioning, civil engineering, automated systems maintenance and manufacturing, machine design, field supervision, project management, and welding to name a few. This diploma program is designed to afford students with the flexibility to tailor their course work to meet their individual occupational goals. The complete program is available at the Harrisburg and York campuses, as well as through Virtual Learning.

### *Career Opportunities*

Advancement in technology-dependent fields related to the student's concentrated area of study.

### *Competency Profile*

This curriculum is designed to prepare students to:

- Utilize computer programs and recognize the importance of computers in today's technology
- Demonstrate specialized vocation skills in the chosen specialty area

### **PROGRAM REQUIREMENTS (TOTAL CREDITS = 18)**

<b>General Education</b>	<b>Major Requirements</b>	
	CIS 105 Intro to Software for Business or higher	3
	MATH 161 Technical Mathematics for General Technology or higher	3
	*Program Specific Electives	12

\* Select program specific electives from the following areas: ABC; AOS; ARCH, AUTO; BCT; BLDC; CAD; CARP; CIS; CISE; CNT; CVTE; ELEC; ELOC; ENGR 271; FIRE; GIS; GREN; GTEC; HBR; HVAC; IA; IEC; IMT; KCA; MDES; NFAB; UBC; WEB; WELD; and WOOD.

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

# Academic Programs

## THEATRE ARTS - PERFORMING ARTS, Associate in Arts Transfer Degree - 2080

*Communication, Humanities and the Arts Department*

The Performing Arts - Theatre Program offers a broad range of courses that allow for transfer into either professional theatre schools or four-year institutions. All students in the program are required to audition for both HACC Theatreworks and the Theatre for Young People productions. 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 during the day at the Harrisburg Campus. Some of the required courses are available at the Gettysburg, Lancaster, Lebanon, and York campuses.

### *Career or Transfer Opportunities*

Professional positions in the Theatre Arts may be limited without pursuit of further professional training in either performance or technical theatre.

### *Competency Profile*

This curriculum is designed to prepare the student to:

- Distinguish and demonstrate the various roles and functions of Theater Arts professionals
- Recognize the necessity for collaboration and artistic compromise
- Execute the various tasks involved in creating the visual environment of a stage production
- Write and speak effectively about the nature of the Performing Arts

### **PROGRAM REQUIREMENTS (TOTAL CREDITS = 64)**

<b>General Education</b>		<b>Major Requirements</b>	
ENGL 101 English Composition I	3	THTR 101 Introduction to Theater (Core A)	3
ENGL 102 English Composition II	3	THTR 110 Introduction to Acting	3
COMM 101 Effective Speaking	3	THTR 111 Acting II	3
Core A Elective	3	THTR 120 Theatre Voice I	1
Core B Elective*	3	THTR 121 Theatre Voice II	2
Core B Elective	3	THTR 130 Theatre Movement I	1
Core C Elective (Mathematics)	3	THTR 131 Theatre Movement II	2
Core C Elective (Science)	3	THTR 142 Scenic Design	3
Core C Elective (Math or Science)	3	THTR 143 Theatre Makeup	3
General Education Transfer Elective	3	THTR 144 Costuming for the Theatre	3
Physical Education & Wellness	1	THTR 210 Acting III	3
	31	ENGL 246 Shakespeare (or)	3
		THTR 224 Modern American Theatre	(3)
		Transfer Elective	3
			33

*\*It is recommended that students select one Core B Elective from the following: HIST 101, 101H, 102, 103, 103H, 104, 107, 202, or 214.*

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

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

<b>Fall Semester</b>		<b>Spring Semester</b>		<b>Fall Semester</b>		<b>Spring Semester</b>	
ENGL 101	3	ENGL 102	3	Core A Elective	3	COMM 101	3
PE & Wellness	1	THTR 101 (Core A)	3	Core B Elective	3	Core B Elective	3
THTR 110	3	THTR 111	3	ENGL 246 or THTR 224	3	Core C Elective (Math)	3
THTR 120	1	THTR 121	2	Gen Ed Transfer Elective	3	Core C Elective (Science)	3
THTR 130	1	THTR 131	2	THTR 210	3	Core C Elective (Math/Science)	3
THTR 142	3	THTR 144	3	Transfer Elective	3		
THTR 143	3						

*Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.*

# Academic Programs

## WEB DEVELOPMENT AND DESIGN, Associate in Arts Career Degree - 1810

*Engineering & Technology Department*

The Web Development and Design associate in arts degree 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, multimedia, and effective communication. Students are able to select from one of the following tracks: Web Application Development, Interactive Web Media, or General Web Studies. Web Application Development track graduates emphasize their studies on building interactive data-driven web sites and mobile applications. Interactive Web Media track graduates are able to focus on making creative content using rich media. Finally, students choosing the General Web Studies track are able to develop a mix of design and development skills. The complete program is available at the Harrisburg Campus, as well as through Virtual Learning. Some of the required courses are available at the Lancaster and York campuses.

### *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
- Write and speak effectively
- Appreciate accomplishments in the arts and sciences

### **PROGRAM REQUIREMENTS (TOTAL CREDITS = 64)**

<b>General Education</b>		<b>Major Requirements</b>	
ENGL 101 English Composition I	3	WEB 101 Web Program Introduction	3
ENGL 102 English Composition II (or)	3	WEB 110 Web Site Publishing	3
ENGL 104 Technical Writing (or)	(3)	WEB 125 HTML & CSS	3
ENGL 106 Business Writing	(3)	WEB 130 Multimedia Fundamentals	3
COMM 101 Effective Speaking (or)	3	WEB 133 Design Fundamentals	3
COMM 203 Interpersonal Communication	(3)	WEB 143 Development Fundamentals	3
Core A Elective	3	WEB 240 JavaScript Programming	3
Core B Elective	3	WEB 268 Web Program Capstone	3
Core C Elective	3	*Program Major Elective	<u>3</u>
Free Elective	3		27
Physical Education & Wellness	<u>1</u>		
	22		

*\*Program Elective: Any WEB, AOS, ART, CIS, CISE, CNT CPS, and ELEC; Excluding AOS 100, 101; CIS 100; and WEB 102.*

Note: Students must achieve a collective average GPA of 2.0, or higher, in all required WEB program and track courses in order to graduate.

<b>General Web Studies Option</b>	<b>15</b>	<b>Interactive Web Media Option</b>	<b>15</b>	<b>Web Application Development Option</b>	<b>15</b>
WEB 135 Raster Imaging & Photography	3	WEB 135 Raster Imaging & Photography	3	CIS 241 Database Administration I	3
WEB 245 Advanced Development	3	WEB 138 Vector Imaging and SVG	3	WEB 126 eXtensible Markup Language	3
General Web Studies Elective (Select from WEB 220-260)	3	WEB 225 Responsive Design & Typography	3	WEB 245 Advanced Development	3
Web Interactive Media Elective (Select from WEB 220-239 or WEB 138)	3	Interactive Web Media Option Electives (Select two: WEB 227, 230, 231, or 233)	6	WEB 253 Intro to Windows Development	3
Web Application Development Elective (Select from WEB 241-260 or WEB 126)	3			Web Application Development Elective (Select from WEB 241-260)	3

# Academic Programs

## 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

Semester I		Semester II		Summer		Semester III		Semester IV	
Core B Elective	3	ENGL 102 or 104 or 106	3	Core A Elective	3	COMM 101 or 203	3	Core C Elective	3
ENGL 101	3	WEB 125	3	PE & Wellness	1	WEB 220-239 or 138	3	Free Elective	3
WEB 101	3	WEB 133	3			WEB 240	3	Program Major Elective	3
WEB 110	3	WEB 143	3			WEB 241-260 or 126	3	WEB 268	3
WEB 130	3	WEB 135	3			WEB 245	3	Web Studies Elective	3

### Interactive Web Media Option

Semester I		Semester II		Summer		Semester III		Semester IV	
Core B Elective	3	ENGL 102 or 104 or 106	3	Core A Elective	3	COMM 101 or 203	3	Core C Elective	3
ENGL 101	3	WEB 125	3	PE & Wellness	1	Media Option Elective	3	Free Elective	3
WEB 101	3	WEB 133	3			WEB 138	3	Program Major Elective	3
WEB 110	3	WEB 135	3			WEB 225	3	WEB 268	3
WEB 130	3	WEB 143	3			WEB 240	3	Web Media Elective	3

### Web Application Developer Option

Semester I		Semester II		Summer		Semester III		Semester IV	
Core B Elective	3	CIS 241	3	Core A Elective	3	COMM 101 or 203	3	Application Dev. Elective	3
ENGL 101	3	ENGL 102 or 104 or 106	3	PE & Wellness	1	WEB 126	3	Core C Elective	3
WEB 101	3	WEB 125	3			WEB 240	3	Free Elective	3
WEB 110	3	WEB 133	3			WEB 245	3	Program Major Elective	3
WEB 130	3	WEB 143	3			WEB 253	3	WEB 268	3

Effective Fall 2008 all Associate Degree Programs must meet Diversity (D) and Physical Education and Wellness (W) requirements.

# Academic Programs

## WEB DEVELOPMENT AND DESIGN, Certificate Program - 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 the following tracks: Web Application Development, Interactive Web Media, or General Web Studies. Web Application Development track graduates emphasize their studies on building interactive, data-driven web sites and mobile applications. Interactive Web Media track graduates are able to focus on making creative content using rich media. Finally, students choosing the General Web Studies track are able to develop a mix of design and development skills. The complete program is available at the Harrisburg Campus, as well as 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 = 36)

#### General Education

#### Major Requirements

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 Developmental Fundamentals	3
WEB 240 JavaScript Programming	3
WEB 268 Web Capstone Project	3
	24

#### General Web Studies Option

WEB 135 Raster Imaging & Photography	3
WEB 245 Advanced Development	3
WEB Application Development Elective (Select from WEB 240-260 or WEB 126)	3
WEB Interactive Media Elective (Select from WEB 220-239 or WEB 138)	3

#### Interactive Web Media Option

WEB 135 Raster Imaging & Photography	3
WEB 138 Vector Imaging & SVG	3
WEB 225 Responsive Design & Typography	3
Interactive Web Media Elective*	3
Select one course from the following:	
WEB 227 eBooks, eDocs, & ePublishing	
WEB 230 2-D Animation for the Web	
WEB 231 3-D Animation for the Web	
WEB 233 Audio/Visual Studio for the Web	

#### Web Application Development Option

CIS 241 Database Administration I	3
WEB 126 eXtensible Markup Language	3
WEB 245 Advanced Development	3
WEB 253 Intro to Windows Development	3

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

# Academic Programs

## WELDING TECHNOLOGY, Certificate Program - 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 certificate program is offered at the Harrisburg and York campuses. Some courses are available through the Lebanon 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 = 35)

General Education		Major Requirements		Other Required Courses	
ENGL 104 Technical Writing (or)	3	GTEC 101 Safety: OSHA 30 & NFPA 70E	3	MATH 161 Technical Math for General Tech	3
ENGL 101 English Composition I	(3)	WELD 101 Blueprint Reading	2		
		WELD 102 Oxy Fuel Welding & Cutting	3		
		WELD 103 Shielded Metal Arc Welding I	3		
		WELD 105 Shielded Metal Arc Welding II	3		
		WELD 107 Shielded Metal Arc Welding III	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	3		
			<u>29</u>		

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

# Academic Programs

## WELDING, Diploma Program - 0500

Engineering & Technology Department

CIP Code: 48.0508

The Welding Technology diploma program prepares students with the knowledge and skills needed for immediate job entry. Emphasis is placed on the basic techniques of blueprint reading, oxy fuel welding, shielded metal arc welding, gas metal arc welding, and gas tungsten arc welding. Students weld on carbon steel, aluminum, and stainless steel. The diploma program is offered at the Harrisburg and York campuses.

### Career Opportunities

Graduates are employed as entry level maintenance workers, basic assembly welders, and welders' helpers in industry. (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

This curriculum is designed to prepare students to:

- Interpret welding blueprints
- Weld carbon steel, aluminum and stainless steel in various positions with the oxy fuel welding process
- Weld carbon steel in various positions with the shielded metal arc welding process
- Weld carbon steel, aluminum and stainless steel in various positions with the gas metal arc welding process
- Weld carbon steel, aluminum and stainless steel in various positions with the gas tungsten arc welding process

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 24)

General Education	Major Requirements		Other Required Courses	
	GTEC 101 Safety: OSHA 30 & NFPA 70E	3	*ENGL 901 Basic Communication Skills	1
	WELD 101 Blueprint Reading	2	MATH 161 Technical Math for General Technology	3
	WELD 102 Oxy Fuel Welding & Cutting	3		4
	WELD 103 Shielded Metal Arc Welding I	3		
	WELD 105 Shielded Metal Arc Welding II	3		
	WELD 120 Gas Metal Arc Welding I	3		
	WELD 130 Gas Tungsten Arc Welding I	3		
		20		

\*May be replaced with a higher level ENGL and MATH offerings.

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

# HACC



## Course Descriptions

# 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 states 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 020 or completion of 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 I 4:4:0

The conceptual framework of accounting and further discussion of the income statement, retained earnings statement balance sheet, and statement of cash flow. Also covered are revenue recognition and measurement of cash, receivables, inventory, operational assets, intangible assets, natural resources, and investments in debt and equity securities. *Prerequisite: ACCT 200 with a grade of C or higher.*

### ACCT 202 - Intermediate Accounting II 4:4:0

Critical study of pronouncements from the Financial Accounting Standards Board as they relate to financial reporting. Analysis of more complex accounting topics, including corporations' contributed capital, retained earnings, stock options, liabilities, statements of cash flow, pension plans, leases, earnings per share, income taxes, changes and error corrections, and financial statement analysis. *Prerequisite: ACCT 201 with a grade of C or higher.*

### ACCT 203 - Income Tax Accounting 4:4:0

The identification and application of various sources of tax law to various individual income tax situations with emphasis on planning. The taxation of corporations and partnerships as well as retirement plans are reviewed. Commonly filed tax forms are used to demonstrate compliance with tax law. *Prerequisite: ACCT 200 with a grade of C or higher or permission of Department Chair.*

### ACCT 204 - Managerial Cost Accounting 3:3:0

The concepts and applications of cost accounting from a procedural and managerial approach. The accumulation of cost data for planning, organizing, controlling cost, and decision

making. Factory overhead, responsibility accounting, job-order and process accounting, standard costs, variance analysis, direct costing, and cost/volume/profit analysis. *Prerequisite: ACCT 200 with a grade of C or higher or permission of the Department Chair.*

### ACCT 205 – Auditing 3:3:0

The ethical and legal responsibilities of the auditor; audit objectives and procedures; internal control; the audit program; testing and sampling; working papers and audit reports. *Prerequisite: ACCT 201 with a grade of C or higher or permission of the Department Chair.*

### ACCT 207 - Government and Not-for-Profit Accounting 4:4:0

Accounting theory and practice applied to governmental units and non-profit institutions. The course will provide an understanding of the classification and use of funds; fiscal procedures; budgetary control; financial statements and reports. *Prerequisite: ACCT 200 with a grade of C or higher or permission of the Department Chair.*

### ACCT 208 - Professional Bookkeeping 3:3:0

Completing adjusting entries for accruals and deferrals and using the adjusted trial balance to prepare financial statements. Entries for depreciation, payroll, and inventory (using various methods and in compliance with legal requirements) are covered. The design and implementation of procedures to protect businesses against fraud are emphasized. This course prepares students to take the National Certified Bookkeepers Exam. *Prerequisite: ACCT 101 and 200 with a C or higher.*

### ACCT 215 - Microcomputer Accounting 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. *Prerequisite: ACCT 200 and CIS 105 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

# Course Descriptions

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**

Designed to develop touch-typing on alphabetic and numeric keyboards. Students master the basic keyboard found on the computer. *Prerequisite: Eligibility for enrollment into 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 and 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 and AOS 110 with a C or higher. (D)*

### **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. *Prerequisite: AOS 101 with a grade of C or higher.*

## Allied Health

### **AH 140 - Introduction to Allied Health 3:3:0**

An introduction to the allied health professions. The course reviews the evolution and current status of health care delivery and introduces the student to the concepts of human growth and development, cultural diversity, safety in the workplace, communication skills, aspects of management, securing employment and strategies for becoming a successful employee. Special emphasis is placed on medical terminology and health care law and ethics. *Prerequisite: ENGL 057 or a combination of ENGL 003, or 007 and 051 with grades of C or higher.*

### **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.

# Course Descriptions

## **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.*

### **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. (Core B)(D)

## **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. (Core B)

## **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. (Core B)(D)

## **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. (D)

## **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. (Core 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. (Core 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 architectural drawing. This course emphasizes the development of visual cognition skills and the techniques of drafting. In addition, this course explores both manual drawing and computer-aided-drafting (CAD) methods to include orthographic and paraline drawings. A course fee is required.

## **ARCH 112 - Architectural Working Drawings I 3:1:6**

Preparation of complete working drawings for a wood-frame structure. Emphasis is placed on sheet layout, material indication, linework, dimensioning, and notation. A course fee is required. *Prerequisite: ARCH 110 and 111 with a grade of C or higher.*

## **ARCH 121 - History of Architecture I 3:3:0**

A history of architecture from Prehistory to the Gothic period, with an emphasis on the relationship between architecture and social, economic, aesthetic and technological developments. Methods of historical inquiry, comparative analysis, and the use of documents and sources are emphasized. *Prerequisite: Eligibility for enrollment into ENGL 101.*

## **ARCH 124 – Woodworking 1:1:1**

Designs and builds a comprehensive skill set for architecture students to safely and effectively use hand and power woodworking tools and machinery. Students complete projects using wood chisels, hand planes, dove and hand saws, drill press, and hand sanders as they work with scale models, adhesives, and finishes. A course fee is required.

## **ARCH 130 - Construction Materials and Methods 3:3:0**

Investigates building materials and systems of construction including structure, enclosure, and interiors. This course examines the impact of building codes on material application and explores

# Course Descriptions

sustainable design, as applied to construction material methods.

*Prerequisite: GTEC 110 with a grade of C or higher.*

## **ARCH 135 - Codes and Specifications 3:3:0**

Introduces codes and specifications. This course focuses on the use and application of the International Building Code and the CSI (Construction Specifications Institute) specification format in architectural and construction settings. *Prerequisite: Eligibility for enrollment into ENGL 101.*

## **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 101 and 102 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 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**

Prepare the site plans and related drawings used in architectural offices. Students learn to place a building on a site in preparing architectural site plans. Topics include topographic studies, zoning, accessibility, and parking layouts. The final portion of the course incorporates Geographic Information Systems (GIS). A course fee is required.

## **ARCH 221 - History of Architecture II 3:3:0**

Exploration of architectural history from the Renaissance to the present. *Prerequisite: Eligibility for enrollment into ENGL 101.*

## **ARCH 230 - Structural Concepts 4:3:3**

Continuation of ARCH 130 exploring the interaction and coordination of building systems and factors affecting their selection and application. Structural principles are discussed, including beam design and the use of load tables. Students solve practical problems through laboratory exercises. A course fee is required. *Prerequisite: ARCH 130 with a grade of C or higher; and MATH 020 or Math 913 or higher with a grade of C or higher; or placement through the College Testing and Placement Program into MATH 051 or higher.*

## **ARCH 233 - Renovations and Architectural Detailing 4:2:6**

Covers architectural detailing for construction drawings using Building Information Modeling (BIM) software. This course involves surveying and preparing drawings of existing structures, as well as reviewing the code issues that impact renovations. In addition, students research the application and adaptation of various systems and manufacturers' products. A course fee is required. *Prerequisite: ARCH 112 and 130 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 class 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.

## **ARCH 251 - Environmental Control Systems for Buildings 3:3:0**

Investigates the mechanical, electrical, and plumbing systems that are commonly employed in modern structures. This course specifically addresses heating and cooling load analysis, HVAC design, and power and lighting system design. The impact that sustainable design may have on equipment selection and design is also explored. *Prerequisite: GTEC 110 and ARCH 130 with a grade of C or higher.*

## **ARCH 253 - Sustainable Architecture 3:3:0**

An introduction to sustainable architecture that examines what constitutes green buildings, why they are important, and how to design them. Integrated design is explored utilizing the U.S. Green Building Council's LEED Green Building Rating System as the framework for reducing the environmental impacts of buildings. Building performance metrics are 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.

## **ARCH 291 - Arch Co-Op Work Experience 3:0:15**

Faculty-monitored employment in a registered architect's office for a minimum of fifteen hours per week. *Open only to students in the Architectural Technology Program. Prerequisite: ARCH 210, 230, and 233 with a grade of C or higher; Co-requisite: ARCH 212.*

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## 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 103 - Art Education I 3:2:3.4**

Geared toward the child's needs for artistic expression. It is a studio/discussion course providing opportunities for the handling of materials and for the evaluation of children's works at various stages of physical and mental development. A course fee is required.

### **ART 105 - Fundamentals of Two-Dimensional Design 3:2:3.4**

Covers the principles and elements of design, color composition, and their structural relationships as applied to problems of 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. (Occasional offering.) A course fee is required. *Prerequisite: ART 121 with a grade of C or higher.*

### **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 basic concepts of form, shape, mass, color, and texture using a variety of materials - paper, metal, plaster, clay, and wood - to produce a body 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. *Enrollment is restricted to students in the Graphic and Interactive Design Certificate and AAS programs. A course fee is required. 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. *Enrollment is restricted to students in the Graphic and Interactive Design Certificate and AAS programs. A course fee is required. 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 a range of drawing concepts and techniques including effective use of line, mass, value, composition, and perspective. Students apply skills through the study of still life, interior spaces, portraiture, and the human figure. A course fee is required.

### **ART 122 - Drawing II 3:2:3.4**

Provides students with an opportunity to further develop their knowledge of drawing concepts and techniques with emphasis on color mixing, application of materials and individual expression. Students apply skills through the study of still life, interior spaces, portraiture, and the human figure. A course fee is required.

### **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. *Enrollment is restricted to students in the Graphic and Interactive Design Certificate and AAS programs. 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. *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 materials and basic techniques with an emphasis on painting, color mixing, handling, and application of paint and materials. Students apply skills through the study of still life, interior spaces, portraiture, and the human figure. A course fee is required. *Pre/Co-requisite: ART 121 with a grade of C or higher.*

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- ART 132 - Painting II** 3:2:3.4  
Provides students with an opportunity to further develop their knowledge of painting concepts and techniques with emphasis on painting, color mixing, handling, and application of materials. 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.
- 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. *Enrollment is restricted to students in the Graphic and Interactive Design Certificate and AAS programs. A course fee is required. 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. *Enrollment is restricted to students in the Graphic and Interactive Design Certificate and AAS programs. A course fee is required. 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. *Enrollment is restricted to students in the Graphic and Interactive Design Certificate and AAS programs. A course fee is required. Prerequisite: ART 105, 121, 125 and 143 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. *Enrollment is restricted to students in the Graphic and Interactive Design Certificate and AAS programs. A course fee is required. 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. *Enrollment is restricted to students in the Graphic and Interactive Design Certificate and AAS programs. A course fee is required. 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 and Interactive 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. *Enrollment is restricted to students in the Graphic and Interactive Design Certificate and AAS programs. A course fee is required. Prerequisite: ART 140, 145, and 149 with grades of C or higher; Co-requisite: ART 114 and 146; or permission from the Program Director.*
- 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 Certificate and AAS programs. Prerequisite: Completion of ART 146, 147, and 149 with grades of C or higher or concurrent enrollment.*
- 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 Certificate and AAS programs. Prerequisite: Completion of ART 146, 147, and 149 with grades of C or higher or concurrent enrollment.*
- 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 Certificate and AAS programs. Prerequisite: Completion of ART 146, 147, and 149 with grades of C or higher or concurrent enrollment.*
- ART 149 - Design Practice** 3:2:3  
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. *Enrollment is restricted to students in the Graphic and Interactive Design Certificate and AAS programs. A course fee is required. 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.

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- 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 153 - Glass Lampworking I** 1:0.67:1  
An introductory class in lampworking glass beads on a mandrel and fusing glass jewelry in a kiln. A course fee is required.
- ART 154 - Glass Lampworking II** 1:0.67:1  
An intermediate class in lampworking glass beads on a mandrel and fusing glass jewelry in a kiln. A course fee is required. *Prerequisite: ART 153 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 162 - Sculpture II** 3:2:3.4  
Explores a variety of three-dimensional media and processes. This advanced studio course emphasizes the development of individual aesthetic approaches. (Occasional offering.) A course fee is required. *Prerequisite: ART 161 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 174 - QuarkXPress Essentials** 3:2:3.4  
Developing desktop publishing skills using QuarkXPress. The course emphasizes using style sheets, master pages, and effective typographical design. Students work on projects such as newsletters and brochures.
- ART 175 - Adobe Illustrator Essentials** 3:2:3.4  
The basics of computer art and the use of Illustrator taught through demonstration, discussion and hands-on exercises. Emphasis is on navigating in Illustrator, using the drawing and transformation tools and working with various kinds of images.
- 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 177 - Production Methods in Jewelry** 3:3:2  
A variety of metal techniques applicable to production work. Topics also include appropriateness of design and material to limited production runs, pricing and photographing the work. Field trips to working jewelers, galleries and craft shows as well as Internet searches improve the student's awareness of the client market. A course fee is required. *Prerequisite: ART 172 with a grade of C or higher.*
- 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 into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.* (Core A)(D)
- ART 182 - Art through the Ages II – (1300 to 20th 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 into ENGL 101 and completion of any reading courses required by the College Testing & Placement Program.* (Core A)(D)
- 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 into 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

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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 and 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: ART 182. Co-requisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required through the College Testing and Placement Program.*

## **ART 187 - Women and Art 3:3:0**

Study of the contributions of women to visual art in Europe and the Americas from the Middle Ages to the late 20th century. The investigation incorporates historical, sociological, anthropological, cultural, and technical elements and examines of the impact of social, economic, and religious conditions on work created by women. This study also considers images of women in art, beginning with prehistory. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by 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. (D)*

## **ART 194 - Italian Renaissance Art and Architecture – 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 111 or 115.*

## **ART 202 - Materials and Processes of Photography 3:3:2**

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. *Prerequisite: ART 111 or 115.*

## **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, 116, 117, 201, and 202.*

## **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, 117, and 201.*

## **ART 210 - Contemporary Crafts: Production and Marketing I 3:2:3.4**

Prepares students to design, produce, and market original crafts products. It is for the serious craftsperson who intends to do wholesale or retail crafts marketing. A course fee is required. *Prerequisite: ART 152, 172, or 214 with a grade of C or higher. Co-requisite: ART 217A; or permission of the Program Coordinator.*

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## **ART 211 - Contemporary Crafts: Production & Marketing II** 3:2:3.4

Participation in a wholesale and retail crafts market. Students get hand-on experience in production, display, and marketing. A course fee is required. *Prerequisite: ART 210 with a grade of C or higher. Co-requisite: ART 217B.*

## **ART 212 - Contemporary Crafts: Design and Production** 3:2:3.4

Production of professionally designed work in an apprenticeship environment. Topics of appropriateness of production, materials, and design modification facilitate the relationship between design and production. Field trips to production craft shops and galleries broaden the student's awareness of the local client/market relationship. A course fee is required. *Prerequisite: ART 211 with a grade of C or higher. Co-requisite: ART 217C.*

## **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. (Core C)

### **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. (Core C)

## **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. *Corequisite: 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.*

# Course Descriptions

## **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**

An overview of automotive service practices and procedures, shop equipment, use of shop manuals, basic diagnosis and minor repairs, identification of components and component nomenclature. A course fee is required.

## **AUTO 103 - Automotive Powerplants 3:2:3**

Major and minor engine servicing. Component identification, function, and the repair or replacement of worn or defective components. Engine disassembly, use of precision measuring tools, and assembly techniques are covered in detail. A course fee is required. *Pre or Co-requisite: AUTO 101.*

## **AUTO 105 - Fundamentals of Electrical/Electronics I 3:2:3**

Introduction of electrical, electronics, and magnetism principles as they relate to the automobile. Use of basic electrical/electronic equipment as it relates to batteries, charging, and starting systems and interpretation of wiring schematics are included. A course fee is required. *Pre or Co-requisite: AUTO 101.*

## **AUTO 107 - Fuel and Emission Systems 3:2:3**

Basic fuel system components, construction, and diagnosis. The use of diagnostic equipment and specialized tools is emphasized in laboratory exercises. Operation of exhaust emission controls, such as air injection, EGR, timing controls, PCV, and catalytic converters is included in this course. A course fee is required. *Pre or Co-requisite: AUTO 101.*

## **AUTO 151 - Braking Systems 3:2:3**

Fundamentals of brake hydraulics; theory and operation of drum and disc brakes. Troubleshooting and diagnostic procedures are introduced for various types of anti-lock braking and traction control systems. A course fee is required. *Pre or Co-requisite: AUTO 101.*

## **AUTO 153 - Suspension Systems 3:2:3**

The principles of operation and the service procedures used to diagnose and service wheel alignment, suspension and steering systems. Procedures for performing the PA State Vehicle Safety Inspection are included. A course fee is required. *Pre or Co-requisite: AUTO 101 with a grade of C or higher.*

## **AUTO 157 - Engine Performance Testing 3:2:3**

The theory and principles of operation and service procedures used to diagnose problems and service automobile engines. Performance testing using the oscilloscope, engine analyzer, exhaust gas analyzer and chassis dynamometer is included. A course fee is required. *Prerequisite: AUTO 107.*

## **AUTO 159 - Heating and Air Conditioning Systems 3:2:3**

Air conditioning components and basic refrigeration principles as applied in automobile service and replacement. The operation of air conditioning controls is stressed. Instructions on the use of proper diagnostic, recovery, and repair equipment are included. A course fee is required. *Prerequisite: AUTO 105.*

## **AUTO 191 - Cooperative Work Experience 2:0:20**

A cooperative work experience of part-time or full-time employment with an approved automotive repair facility. Students perform tasks consistent with topics studied in the prerequisite automotive courses. *Prerequisite: AUTO 101, 105, 107, 151, and 153.*

## **AUTO 203 - Manual Transmissions/Transaxles and Differentials 3:2:3**

Construction and operation of clutches, manual transmissions/transaxles, differentials, and four-wheel drive systems. Service and overhaul procedures for both manual transmissions and differentials are included. A course fee is required. *Prerequisite: AUTO 101.*

## **AUTO 205 - Intermediate Electrical/ Electronics 3:2:3**

Continuation of AUTO 105 covering automotive circuitry and electrical control of various vehicle components. Specialized electronics training is the main emphasis. A course fee is required. *Prerequisite: AUTO 105.*

## **AUTO 207 - Computerize Powertrain Controls 3:2:3**

Advanced study of the new technology in computerized powertrain controls, including diagnostic and repair procedures with the latest equipment. A course fee is required. *Prerequisite: 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**

An extension of AUTO 205 with an emphasis on complex electronic circuitry testing. Study includes PCM and other on-board electronic devices and displays used on today's vehicles. Use and function of today's automotive microprocessors are integrated throughout the course. A course fee is required. *Prerequisite: AUTO 205.*

# Course Descriptions

## Automotive (GM) Technology

### **AGM 101 - GM Automotive Fundamentals 3:2:3**

An overview of General Motors automotive service practices and procedures, shop equipment, use of shop manuals, basic diagnosis and minor repairs. Operating systems on current General Motors cars and trucks are introduced. A course fee is required.

### **AGM 103 - GM Automotive Powerplants 3:2:3**

Minor and major engine servicing. The course emphasizes component identification and function, and the repair or replacement of worn or defective components. The engines used are made by or for General Motors. A course fee is required. *Pre or Co-requisite: AGM 101.*

### **AGM 105 - GM Automotive Electrical Fundamentals/Electronics I 3:2:3**

Introduction of electrical, electronic and magnetism principles as they relate to the automobile. Additional content includes use of basic electrical/electronic test equipment for batteries, charging, and starting systems and interpretation of wiring schematics. A course fee is required. *Pre or Co-requisite: AGM 101.*

### **AGM 107 - GM Automotive Fuel Systems 3:2:3**

Basic fuel system components, construction, and diagnosis. The use and interpretation of various diagnostic equipment and tools are emphasized in laboratory exercises. A course fee is required. *Pre or Co-requisite: AGM 101.*

### **AGM 151 - GM Automotive Braking Systems 3:2:3**

Troubleshooting and servicing car and light truck drum/disc and four-wheel disc systems. Diagnostic procedures for anti-lock braking systems are introduced. Instruction and procedures for the brake inspection portion of a PA State Vehicle Safety Inspection are included. A course fee is required. *Prerequisite: AGM 105.*

### **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. *Pre or 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. *Pre or Co-requisite: AGM 101 or AUTO 101.*

### **AGM 153 - GM Automotive Steering and Suspension Systems 3:2:3**

Design, operation and service procedures used to diagnose and service General Motors suspension and steering 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 105.*

### **AGM 153A - GM Automotive Suspensions and 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. *Pre or 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. *Pre or Co-requisite: AGM 101 or AUTO 101.*

### **AGM 157 - GM Automotive Fuel Systems/Engine Performance Testing 3:2:3**

Feedback fuel systems, including throttle body and multi-port fuel injection. Design, operation and diagnostic procedures are outlined. Engine performance testing using the oscilloscope and other test equipment emphasizes proper fuel and ignition system diagnosis. A course fee is required. *Prerequisite: AGM 105 and 107.*

### **AGM 159 - GM Automotive Heating/Air Conditioning Systems 3:3:3**

Air conditioning components and basic refrigeration principles as applied in automobile service and replacement. Air conditioning controls using vacuum, electrical, and electronic modes are stressed, as well as environmental concerns including recovery and recycling. A course fee is required. *Prerequisite: AGM 105.*

### **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 Transmissions/ Transaxles and Differentials 2:0.5:4.5**

Construction and operation of manual transmissions/ transaxles, differentials and four-wheel drive systems. An in-depth study of service and overhaul procedures for both manual transmissions and differentials is included. A course fee is required. *Prerequisite: AGM 101.*

### **AGM 205 - GM Automotive Electrical Fundamentals/ Electronics II 3:2:3**

Continuation of AGM 105 covering automotive circuitry and including solid state devices, integrated circuitry, and electrical control of various vehicle components. GM Specialized Electronics Training (64 hours) is a main emphasis. A course fee is required. *Prerequisite: AGM 105.*

### **AGM 207 - GM Automotive Fuel Injection Systems 2:1:3**

Throttle body and multiport fuel system construction, operation,

# Course Descriptions

and diagnosis with an emphasis on distributorless ignition system diagnosis and repair. A course fee is required. *Prerequisite: 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 2:1:3**

An extension of AGM 205 with an emphasis on complex electronic circuitry testing. This study includes body control modules, programmers, audio systems, Techline terminals, air conditioning controls, and other on-board computers. Through the use of Techline terminals and the Fluke 87 digital volt/ohm meter, specific diagnostic procedures are studied. A course fee is required. *Prerequisite: AGM 205.*

## **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 AA, Certificate and Diploma programs. Co-requisite: CULI 113.*

### **BAKE 103 - Baking II 2:1:3**

Exposes the student to a continuation of various bread styles using advanced techniques and hands-on application for sourdough and artisan style breads. This course emphasizes the importance of proper dough handling and consistency of the finished product. A theme specific showpiece, utilizing different decorative doughs, is a part of the grading. Specialty dietary baking products are also covered. 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 AA, Certificate, and Diploma programs. Prerequisite: BAKE 101 with a grade of C or higher.*

### **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 AA, Certificate, and Diploma 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 113 - Pastry Arts II 2:1:3**

Focuses on advanced pastries. This course emphasizes cake structure, texture, and levelness. 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. Construction, assembly, decoration, and cost analysis of a tiered theme cake is a part of grading. 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 in the Culinary Arts AA, Certificate, and Diploma programs. Prerequisite: BAKE 111 with a grade of C or higher.*

### **BAKE 291 - Baking and Pastry Arts Internship 3:1:12**

Provides students with the opportunity to obtain employment in an approved bakery worksite for the equivalent of 180 hours of on-the-job training. Progress reports are required in addition to work visitation by the instructor. 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 the Culinary Arts AA Certificate, and Diploma programs. Prerequisite: BAKE 101 and 111 with a grade of C or higher; Co-requisite: BAKE 103.*

# Course Descriptions

## Banking

### **BANK 101 - AIB Principles of Banking** 3:0:0

Long recognized as the standard introduction to the banking industry. This course touches on nearly every aspect of banking, from the fundamentals of negotiable instruments to contemporary issues and developments within the industry.

### **BANK 103 - AIB Law and Banking: Applications** 3:3:0

Devoted to the laws and regulations that govern funds transactions, whether by check, EFT, wire transfers, or letters of credit. In addition focus is placed on issues of liability, wrongful payment and dishonor, electronic banking, deposit accounts, mutual funds and annuities.

### **BANK 105 - AIB Law & Banking: Principles** 3:3:0

A guide to legal and regulatory issues. This course has special emphasis on the Uniform Commercial Code.

### **BANK 107 - AIB Marketing Financial Services** 3:3:0

Provides a thorough immersion to marketing concepts and activities involved in specifically marketing financial services. The course is a how-to guide which takes a marketer from the basic understanding of marketing through the steps necessary to integrate and grow marketing at their institution. Concepts considered include developing a marketing plan, sales and sales management, communications, and public relations. The course uses case studies to illustrate various concepts and provides a complete tool kit of items to help a marketer integrate the ideas and concepts in their own bank.

### **BANK 133 - AIB Consumer Lending** 3:3:0

Introduces students to the consumer lending process, its importance to the bank and consumers, and the environment in which it functions. Participants learn the essentials about closed-end loans, indirect loans and related credit products, and open-end credit products. They also trace the consumer lending process from developing and taking loan applications to collection and recovery. The course explores what is involved in a credit investigation, decision making, loan pricing and loan policy. Participants develop a greater understanding for relationship building, new lending technologies and the importance of consumer regulations.

## 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

Biological organization; basic biochemistry; biophysics of living systems; cellular structures, reproduction and functions; photosynthesis; cellular respiration; ecology; structures and functions of plants; classification of the major divisions of the plant kingdom. 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. (Core C)

### **BIOL 102 - General Biology II** 4:3:3

Basic energy reactions of living things; metabolism, and life functions of animal systems; detailed examination of organ systems which, in the mammal, support Homeostasis; principles of heredity, reproduction and embryology; evolution as a process; structure, function and classification of major phyla of the animal kingdom. A course fee is required. *Prerequisite:* BIOL 101 with a grade of C or higher, or equivalent.

### **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. (Core C)

### **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:* Honors Studies Major or completion of all developmental reading and writing courses required as a result of the College Testing and Placement program. (Core C)

### **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

Designed for the non-science major as a review of contemporary and historical advances in biology. Topics of study include evolution and the diversity of life, the spectrum of animal and plant life, and ecology. A course fee is required. (Core C)

### **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. (Core C)

### **BIOL 121 - Anatomy and Physiology I** 4:3:3

Intended for students who contemplate careers in Allied Health fields. Basic body organization; functional biochemistry; cytology, histology, study of integumentary, skeletal, muscular, circulatory, and respiratory systems, and emphasis on the study of normal anatomy and physiology with clinical applications. A course fee is required. *Prerequisite:* High school biology and chemistry or HACC equivalents.

### **BIOL 122 - Anatomy and Physiology II** 4:3:3

A continuation of BIOL 121. A comprehensive study of the digestive, excretory, endocrine, reproductive, and nervous

# Course Descriptions

systems. A course fee is required. *Prerequisite: BIOL 121 with a grade of C or higher.*

## **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. *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

Designed for science majors. Topics include plant physiology, comparative anatomy, and plant classification. Reproduction and other major botanical concepts will be emphasized through the study of local flora, laboratory exercises and lectures. *Prerequisite: BIOL 101 with a grade of C or higher*

## **BIOL 215 - Introduction to Genetics** 4:3:3

Introduction to the fundamental concepts of genetics. The student gains an understanding of the physical nature of the genetic material, how the genetic material controls the inheritance of traits, classic and modern genetics, and how genetics applies to other areas of biology and to societal issues. The student experiences first-hand both the classical and molecular sides of genetics in the laboratory. *Prerequisite: BIOL 101 and 102 with a grade of C or higher, or the equivalent.*

## **BIOL 221 – Microbiology** 4:3:2

A comprehensive study of the structure and function of microorganisms. Control of microorganisms, immunity, and microbes in the news are also presented. Selected infectious diseases are discussed; laboratory activities emphasize procedures and techniques for the laboratory study of microorganisms and related areas. A course fee is required. *Prerequisite: high school biology and chemistry or HACC equivalents. (Core C)*

## **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 245 - Head/Neck Anatomy and Histology** 4:3:3

A detailed study of gross anatomical structures and relationships of the head and neck. The course includes histological and physiological fundamentals having importance in odontology. *Prerequisite: BIOL 121.*

## **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, foodwebs, 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. (Core C)*

## **Building Codes**

### **BLDC 101 - International Residential Code** 3:3:0

Applies the construction requirements cited in the most recent addition of the ICC International Residential Code for one and two-family dwellings. Topics include standards for footing, foundation, framing, electrical, plumbing and mechanical materials, and occupancy. Special emphasis is on the amended requirements of the Pennsylvania Uniform Construction Code.

### **BLDC 103 - Non-Structural Building Code** 3:3:0

Analyzes and applies the non-structural requirements as cited in the most recent edition of the ICC International Building Code.

# Course Descriptions

Topics covered are types of construction, occupancy group classifications, mixed uses, height and area requirements, means of egress, natural light and ventilation, sprinkler systems, flame spread, and smoke development. Special emphasis is on the amended requirements of the Pennsylvania Uniform Construction Code. *Prerequisite: BLDC 101 with a grade of C or higher; or permission of the Instructor.*

## **BLDC 106 - Handicapped Accessibility** 3:3:0

Analyzes the scope and addresses the specific legal and technical elements of ingress, egress, safety, sanitation, auditory and signage required for the physically impaired as cited in the most recent addition of the ICC International Building Code. Special emphasis is on the amended requirements of the Pennsylvania Uniform Construction Code. *Prerequisite: BLDC 103 with a grade of C or higher; or permission of the Instructor.*

## **BLDC 111 - Inspection Techniques** 2:2:0

Inspection of wood structures for compliance with the ICC International Residential Code, the ICC International Building Code, and sub-system codes. Covered are simple wood framing, alternative materials, and methods of construction and design. *Prerequisite: BLDC 103 with a grade of C or higher.*

## **BLDC 135 - Property Maintenance Code** 3:3:0

Analyzes the health, safety, and welfare requirements for buildings and exterior areas as cited in the most recent edition of the ICC International Property Maintenance Code. Community involvement and voluntary compliance techniques are emphasized in addition to the minimum requirements for reporting, notification, and legal action. *Prerequisite: BLDC 111 with a grade of C or higher; or permission of the Instructor.*

## **BLDC 201 - Structural Building Code** 3:3:0

Analyzes and applies the structural requirements as cited in the most recent edition of the ICC International Building Code. Topics include uniform and concentrated live loads, dead loads, environmental loads, compartmentalization and fire protection, surface coatings, exits, fire protection systems, and weather protection. Special emphasis is on the amended requirements of the Pennsylvania Uniform Construction Code. *Prerequisite: BLDC 103 and MATH 020 or 161, or higher with a grade of C or higher, or Placement through the College Testing and Placement Program into MATH 051 or higher; or permission of the Instructor.*

## **BLDC 203 - Energy Conservation Code** 3:3:0

Analyzes and applies the energy conservation requirements as cited in the most recent edition of the ICC International Energy Conservation Code. Topics include insulation, fenestration, ventilation, lighting, and sanitation. Special emphasis is on the amended requirements of the Pennsylvania Uniform Construction Code. *Prerequisite: BLDC 201 with a grade of C or higher; or permission of the Instructor.*

## **BLDC 207 - Building Plan Review** 4:4:0

Proper review of structural and non-structural plans to ensure compliance with ICC International Building Code and sub-system codes. *Prerequisite: BLDC 201, and BLDC 221, 223, or 225, both with grades of C or higher.*

## **BLDC 221 - Plumbing Code** 3:3:0

Analysis of the minimum design requirements for potable water sources; service and distribution systems; and septic, waste, and storm-water removal systems, as specified in the most recent editions of the ICC International Building Code and the ICC International Plumbing Code. Sizing, layout, support, and protection systems are covered. Code requirements for protection of the physically impaired and for special occupancies are discussed. *Prerequisite: BLDC 103 with a grade of C or higher; or permission of the Instructor.*

## **BLDC 223 - Mechanical Code** 3:3:0

Analysis of minimum safe, design requirements for heating, ventilation, and air conditioning systems, as specified in the most recent editions of the ICC International Building Code, the ICC International Mechanical Code, and the ICC International Fuel Gas Code. Energy conservation requirements and heat-loss and heat-gain calculations are emphasized. *Prerequisite: BLDC 103 with a grade of C or higher; or permission of the Instructor.*

## **BLDC 225 - Electrical Code** 3:3:0

Analysis of the design requirements for electrical service and distribution including sizing, layout, and protection devices as specified in the most recent editions of the ICC International Building Code, and the NFPA National Electrical Code. Code requirements for special uses and protection of the physically impaired are discussed along with the interrelationships of the electrical, structural, mechanical, and fire-protection systems. *Prerequisite: BLDC 103 with a grade of C or higher; or permission of the Instructor.*

## **BLDC 227 - Fire Code** 3:3:0

Analysis of fire-protection systems-maintenance and inspection procedures as specified in the latest editions of the ICC International Building Code and the ICC International Fire Code. The effect of both intended and unintended changes in building use and occupancy is considered, along with an appreciation for the relationship between the retrospective inspection code and the new construction code. Evacuation planning and detailed occupancy, life safety, and operational requirements are considered. *Prerequisite: BLDC 207 with a grade of C or higher; or permission of the Instructor.*

## **BLDC 230 - Code Administration** 3:3:0

Administration of governmental and independent construction and safety codes. Emphasis is on the legal aspects of financial, personnel, and technical record-keeping. Compliance with the Pennsylvania Uniform Construction Code and other pertinent state laws and local ordinances, including maintenance and disclosure of public records, is emphasized. *Prerequisite: BLDC 207 with a grade of C or higher; or permission of the Instructor.*

## **Building Construction Technology**

## **BCT 211 - Construction Design Methods** 3:3:0

Fundamentals of statistics; design of wood and steel structures, including beams, columns, joists, and trusses; shear and moment diagrams; mechanics of materials including Hooke's Law. *Prerequisite: MATH 020 with a grade of C or higher.*

# Course Descriptions

## **BCT 212 - Construction Contracts and Related Laws 3:3:0**

The legal factors associated with the operation of a construction company. Emphasis is on a practical approach to the law as it relates to such topics as construction contracts, interprofessional 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 and 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 are 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 110 and 130 and MATH 161 with grades of C or higher; or permission of the Department Chair.*

## **BCT 216 - Construction Planning and Scheduling 3:3:0**

The planning and scheduling process before and during the construction project. Emphasis is on the need for coordination of manpower, materials, equipment, project funding, and cash flow. The use of the computer in the planning and scheduling process is extensively integrated. *Prerequisite: ARCH 110 and 130 or permission of the Department Chair.*

## **BCT 217 - Construction Project Administration 3:3:0**

The procedures for effective project cost control and systematic methods of handling changes, claims, and disputes for both general and subcontracting. Construction accounting and the administrative issues associated with job performance are included. *Prerequisite: ARCH 110 and 130; or permission of the Department Chair.*

## **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 characteristics, theories, concepts, and

functions of business. Students are provided with the basic frameworks (for further study) for the fields of management, marketing, accounting, finance, human resources, labor relations, business law and ethics, and economics. They are challenged to develop critical thinking skills and to recognize the basic components of any business and how each part interrelates in a global environment. *Prerequisite: Eligibility for enrollment into ENGL 003, 007, or 057, as identified by the College Testing and Placement Program.*

## **BUSI 150 - Introduction to Agribusiness 3:3:0**

Introduction to agribusiness fundamentals. Topics include a comparison of agriculture and agribusiness, agribusiness types, organization, planning and operation, and agribusiness inputs and outputs. There is also an examination of agribusinesses involved with post-production processing and agricultural products.

## **BUSI 201 - Business Law I 3:3:0**

Discusses the enforcement of legal rights and agencies. This course covers the history and development of Anglo-American law, criminal and tort law as applied to business, contracts, and sales. This course also addresses the application of Article 2 of the Uniform Commercial Code (UCC) as it applies to the sale of goods. *Prerequisite: Eligibility for enrollment into ENGL 003, 007, or 057 as required by the College Testing and Placement Program.*

## **BUSI 202 - Business Law II 3:3:0**

Continues the competencies covered in BUSI 201. This course covers commercial paper, creditors' rights, agency and employment, partnerships and corporations, real and personal property, and bailments. *Prerequisite: BUSI 201 with a grade of C or higher.*

## **BUSI 209 - Legal Environment of Business 3:3:0**

Introduces the law as it affects profit and non-profit organizations. This course covers the elements of the legal process; legal rights and liabilities of employers, employees, and consumers; and laws governing relationships among businesses. This course also addresses environmental law, antitrust law, consumer protection, securities, and international law. *Prerequisite: Eligibility for enrollment into ENGL 003, 007, or 057 as required by the College Testing and Placement Program.*

## **BUSI 211 - Agricultural Law 3:3:0**

Basic knowledge and understanding of the legal system, theory, and concepts as they relate to agriculture. Topics covered include contracts, sales, secured transactions, real estate, environmental law, cooperatives, water law, and regulatory laws.

## **BUSI 227 - Principles of Agricultural Economics 3:3:0**

Agriculture in local and national economy. Topics covered include: distribution; size and organization of the farm business unit; policies affecting agriculture. Agricultural economics is simply economics applied to agricultural problems. *Prerequisite: ECON 201 with a grade of C or higher.*

## **BUSI 230 - Introduction to International Business 3:3:0**

The environmental and cultural aspects of international business and major functional areas, such as trade, investment, management, marketing, and the international monetary system. (D)

# Course Descriptions

## **BUSI 245 - Business Ethics 3:3:0**

General introduction to ethics as it effects decision-making in the business environment. Topics include ethical theory, moral issues, economic justice, capitalism, corporate social responsibility, individual moral decision-making, social and economic policy, and the environment. There is a strong emphasis in the use of case studies.

## **BUSI 250 - Management of Food Systems 3:3:0**

Introduces the logistics and management of the wholesale food, food service, and retail food systems. The emphasis is on product and process, merchandising the buying and selling function, finance, safety and sanitation supervision, customer service and community partnering.

## **BUSI 291 - Business Studies Internship 3:0:15**

Encompasses faculty-monitored employment of at least 225 hours per semester in an approved Business Studies Internship in management, marketing, or accounting. This internship experience allows students to apply the knowledge and skills they have acquired throughout a business curriculum. Students submit a final comprehensive reflective report highlighting the main achievements of their internship experience. *Enrollment is restricted to those students in the following programs: Accounting AA, Business Studies AA, Business Management AA, Real Estate Marketing AA, Healthcare Management AA, and Marketing AA. Prerequisite: ACCT 101, BUSI 201 or BUSI 209, MGMT 201, and MKTG 201 with grades of C or higher; Overall GPA of 2.0 or higher and Instructor approval of the Internship Work Plan.*

## **Cardiovascular Technology**

### **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. This course addresses topics relevant to patient care in addition to current trends in healthcare. *Enrollment is restricted to students in the Cardiovascular Technology AS programs. Non-majors need permission of the Program Director. Prerequisite: ENGL 003, 007, or 057 with a grade of C or higher.*

### **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 121 and MATH 020 with a grade of C or higher. Corequisite: CVT 102. Pre/Corequisite: 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 programs. Prerequisite: BIOL 121 and MATH 020 with a grade of C or higher. Corequisite: CVT 101. Pre or Co-requisite: CVT 100 with a grade 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 CVT 102 with grades of C or higher.*

### **CVT 200 - Cardiac Pathophysiology 6:6:0**

Introduces students to the cardiovascular system and provides an overview of various cardiac diseases. This course enables the student to gain an understanding of 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. *Enrollment is restricted to students in the Cardiovascular Technology AS programs. Prerequisite: CVT 101, 102, 103; BIOL 122, and MATH 103 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. Corequisite: 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*

# Course Descriptions

*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. *Enrollment is restricted to students in the Cardiovascular Invasive Technology AS program. A course fee is required. 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. *Enrollment is restricted to students in the Cardiovascular Invasive Technology AS program. A course fee is required. 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. *Enrollment is restricted to students in the Cardiovascular Invasive Technology AS program. A course fee is required. Prerequisite: CVT 215, CVT 215, and CVT 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. *Enrollment is restricted to students in the Cardiovascular Sonography AS program. A course fee is required. Prerequisite: CVT 101, CVT 102, CVT 103, and CVT 200 with a grade of C or higher. Co-requisite: CVT 220, CVT 222, and CVT 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. *Enrollment is restricted to students in the Cardiovascular*

# Course Descriptions

*Sonography AS program. A course fee is required. Prerequisite: CVT 101, 102, 103, 200 with a grade of C or better. Co-requisite: CVT 223*

## **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 in the Cardiovascular Sonography AS Program. Prerequisite: MATH 103 with a minimum grade of C. Co-requisite: CVT 220 and 223.*

## **CVT 223 - Concepts in Cardiac Physiologic Assessment 3:3:0**

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 during an echocardiographic examination and is aided by receiving current recommendations regarding appropriate assessment of each pathology in accordance with the standards established with the American Society of Echocardiography (ASE). *Enrollment is restricted to students in the Cardiovascular Sonography AS program. Prerequisite: CVT 200 with a grade of C or higher. Co-requisite: CVT 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 - Doppler Physics and Cardiac Hemodynamics 3:2:3**

Introduces students to the principles of Doppler physics including the Doppler Effect, Doppler equations, and related diagnostic tests. This course presents an overview of continuous and pulsed wave Doppler including aliasing, Nyquist limit, velocity calculations, and angle correction techniques. Color flow Doppler, tissue imaging, and Power Doppler concepts are also covered.

Cardiac hemodynamics for all valvular disease states is presented extensively including the relationship to cardiac anatomy, physiology, and cardiovascular function parameters. Quantitative evaluation methods utilized in the adult cardiac sonography laboratory to evaluate all cardiac pathologies are first presented and performed by the student. The laboratory component is designed class 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. *Enrollment is restricted to students in the Cardiovascular Sonography AS program. A course fee is required. Prerequisite: CVT 219, 220, 222, 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 - Intro 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.

# Course Descriptions

Enrollment is restricted to students in the Cardiovascular Sonography Technology AS program. Prerequisite: CVT 224 and CVT 226 with a grade of C or higher. Co-requisite: CVT 228.

## 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 120 - Building Foundations** 5:2:6

Focuses on plan reading for site layout and preparation of the foundation. The emphasis is placed on preparation of formwork and placement of concrete. The course also includes safety, concrete finishing, reinforcing, and estimating. Concrete cranes and rigging for formwork and rebar are also covered. 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 140 - Exterior Finishing** 5:2:6

Emphasizes external finishing including roofs and facade treatment. Steel framing and thermal protection are also covered. A course fee is required. Prerequisite: CARP 130 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.

### **CARP 160 - Interior Finishing II** 5:2:6

Advanced interior finishing. The course is a continuation of topics covered in CARP 150 with the addition of stairs and cabinet installation. A course fee is required. Prerequisite: CARP 150 with a grade of C or higher.

### **CARP 170 - Advanced Carpentry Topics** 5:2:6

Advanced systems for roofs, floors, walls and stairs. Basic welding applications, metal buildings, and an introduction to supervision are also discussed. A course fee is required. Prerequisite: CARP 160 with a grade of C or higher.

## Chemistry

### **CHEM 100 - Principles of Chemistry** 3:3:2

For students desiring an introduction to chemistry or requiring a course to update their knowledge of chemistry. Fundamentals stressed are atomic structure, bonding, molecular structure, solutions, acids and bases, chemical nomenclature, and stoichiometry. A course fee is required. Prerequisite: completion of all reading courses required by the College Testing and Placement Program and MATH 051 with a grade of C or higher. (Core C)

### **CHEM 101 - General Inorganic Chemistry I** 4:3:3

Emphasis on the principles and theories of chemistry. Concepts covered include: atomic theory and structure, bonding, periodicity, oxidation/reduction, stoichiometry, molecular geometry, gas laws, and solutions. The laboratory work reinforces the theoretical understanding and the quantitative nature of matter. A course fee is required. Prerequisite: MATH 103, ENGL 057 or a combination of ENGL 003, or 007 and 051 with grades of C or higher and either (1) high school academic chemistry or (2) CHEM 100 with grades of C or higher. (Core C)

### **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. (Core C)

### **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. (Core C)

### **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. (Core C)

### **CHEM 204 - Organic Chemistry II** 4:3:4

A continuation of CHEM 203. The properties and reactions of functional groups, spectroscopy, and multistep synthesis are emphasized. The laboratory 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.

# Course Descriptions

## 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. (Core A) (D)*

### 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. *Prerequisite: 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

Designed to prepare students to take the Civil Technology degree classes. Numerical and graphical methods are studied with strong emphasis on application 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 020 or higher; MATH 161; or permission of the Program Coordinator.*

### 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

Using MicroStation for highway development projects. Topics include 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, CVTE 102, and CVTE 103; or permission of the Program Coordinator.*

### 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 Program Coordinator.*

### 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.*

# Course Descriptions

## **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, and 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.*

## **Communication**

### **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: Honors Studies Major or 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.*

### **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.*

### **COMM 171 - Workshop in News Writing and 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

# Course Descriptions

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.*

## **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 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 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, 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 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. *Prerequisite: Completion of all developmental reading and writing courses required as a result of the College Testing and Placement Program.*

## **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 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 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. (Core B)(D)*

# Course Descriptions

## **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; or Honors Studies Major. (Core B)(D)*

## **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 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 272 - 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 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. Corequisite: 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. *Prerequisite: CVTE 110.*

### **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. *Prerequisite: 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. *Corequisite: CVTE 110.*

### **CAD 154 - Computer-Aided Drafting and Design 3:2:3**

The study of basic drafting concepts including orthographic projection, sections, and auxiliary views. Students are given an introduction to selected computer-aided drafting and design programs. Students create multi-view working drawings and study solids modeling techniques.

### **CAD 156 - AutoCAD for Architecture 3:1:6.25**

Introduces 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 are external references, blocks and attributes, customizing, and 3-D drawings.

### **CAD 158 - BIM Using Revit for Architecture and 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, provide 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.

### **CAD 164 - Advanced Computer-Aided Drafting and Design 2:1:4**

Advanced 3D topics in SolidWorks including sheet metal, cam, and gear design. Students examine applied problems in finite

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element analysis using COSMOS/Works. Applications in FLOW/Works, COSMOS/Motion, and Animator are also discussed. *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. *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 or 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 CIS 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 with a 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, 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: Honors Studies Major; or completion of all developmental reading and writing courses required as a result of the College Testing and Placement Program.*

### **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 be a 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. *Prerequisite: CIS 105, 110 with a grade of C or higher; or permission of the Instructor.*

### **CIS 129 - Operating Systems for Technicians 3:2:3**

An introductory course in Operating Systems Software. The course covers fundamental terms and functions of Operating Systems Software. Several different operating systems are installed, configured, and upgraded. Emphasis is on a lab-oriented, hands-on approach to understanding, diagnosing, and troubleshooting today's popular PC Operating Systems. Operating Systems studied include DOS, Windows 9X, Windows NT, Windows XP, and LINUX. *Prerequisite: CIS 127 with a grade of C or higher.*

### **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

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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 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 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. *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. *Prerequisite: CIS 222 with a grade of C or higher; or permission of the Instructor.*

## **CIS 224 - Introduction to Systems Analysis and 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 144, 240.*

## **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, login security and trustee assignments. Web Services, Groupwise and OneNet utilities are also covered. *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 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

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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 operating system. Focus is on C and C++ in the latest distributions available for this operating system. System installation and Object-oriented Programming, with CPP, Qt, and JAVA Development, are also 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, and MATH 202 with grades of C or higher.*

## **CIS 264 - Fundamentals of LINUX Administration 3:3:1.5**

Covers the basics of the LINUX operating system with an emphasis on system administration and security. Topics include: the installation and configuration of LINUX, logging into LINUX, 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 LINUX administration are covered. Other LINUX tools and utilities are also covered. *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 AA 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*

# Course Descriptions

*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, CIS 257 and CIS 247 or CIS 258; or permission of Instructor.*

## **Computer Networking Technology**

### **CNT 120 - Network Communications Technology I 3:3:0**

Covers business data communication concepts. This course provides an overview and discusses the networking standards, organizations, and government agencies involved in the field. The networking standards covered include the Open Systems Interconnection (OSI) Model, TCP/IP Protocol Suite, and the Institute of Electrical and Electronic Engineers (IEEE) networking specifications. Other topics covered are: basic terminology associated with networks, Local Area Networks (LANs), Metropolitan Area Networks (MANs), Wide Area Network (WANs), Peer-to-Peer networks, Client/ Server networks, networking media, IPv4 and IPv6 addressing, network topologies, backbone networks, Ethernet, Carrier Sense Multiple Access with Collision Detection (CSMA/CD), internetworking devices, Public Switched Telephone Network (PSTN), Virtual Private Networks (VPNs), Wireless Local Area Networks (WLANs), Network Operating Systems (NOSs) and network security. The technology of signaling is also covered and includes noise, error detection and correction, flow control techniques, data compression, and encoding technology. Additional focus is placed on the objectives on the Network+ exam to help students prepare for 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 051 or 045.*

### **CNT 125 - Network Communications Technology II 4:3:3**

Continues the competencies covered in CNT 120. This course addresses the concepts, technologies, components, and protocols

inherent in today's Local Area Network (LAN) and Ethernet environments. Students learn the following concepts through lecture and hands on laboratory exercises: peer-to-peer networks, client/server networks (Windows, Linux and Apple), Network Interface Cards (NICs), routers, routing protocols, switches, Virtual Local Area Networks (VLANs), VLAN Trunking, inter-VLAN routing, TCP/IP protocols, subnetting, Wireless Local Area Network (WLANs), encryption, firewalls, Voice over Internet Protocol (VoIP), Simple Network Management Protocol (SNMP), network monitoring/management, troubleshooting networks and network design. Students work with Windows, Linux, Apple and Virtual Machines on a regular basis. Further focus is on the Network+ exam to help students prepare for the Network+ certification exam. 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 the communications cabling choices that are currently available. Along with that topic, this course addresses the standards for their use, the tools and equipment utilized, installation methods, testing, and troubleshooting cable failures. Students learn the rules and standards that govern the design of cabling systems. Laboratory exercises entail students installing, testing, certifying, and troubleshooting a cable system according to a standards-based installation, as well as researching and preparing 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

# Course Descriptions

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 and cloud computing, virtual networking, and virtual machine performance. Laboratory exercises use common commercial and freely available virtualization software. *Prerequisite: CNT 120 and CIS 249 or 264 with grades of C or higher; 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**

Fundamentals of programming. A beginning programming language is introduced to the new programmer, who defines and writes simple programs. The programs utilize the particular capabilities found in the language. Gradually, 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 045 or 051 with a grade of C or higher or placement through the College Testing and Placement Program.*

### **CPS 115 - Visual Basic Programming I 3:3:0**

The concepts and techniques of programming in a Windows environment. Project assignments 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 included. No prior programming experience is necessary. *Prerequisite: Placement through the College Testing and Placement Program or completion of MATH 045 or 051 with a grade of C or higher.*

### **CPS 121 - JAVA Programming 3:3:0**

Defining and writing simple programs that emphasize object-oriented programming. Programming concepts such as algorithms, data types, classes, methods, looping, decision-making, arrays, and files are explored. JAVA Applications and Applets are developed using an appropriate development environment. Program design techniques are developed to enable the student to write more complex programs from a variety of fields in an efficient manner. This course is geared toward the computer science major but would 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 I 3:3:0**

Techniques of algorithm development and programming style. Two high level languages are employed for algorithm testing. A number of projects (e.g. character manipulation, polynomial operations, file processing) are assigned to the student for design, coding, and documentation. *Prerequisite: CPS 121 with a grade of C or higher.*

# Course Descriptions

## **CPS 162 - Computer Science II 3:3:0**

A continuation of CPS 161 that focuses 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 3:3:0**

Object oriented or OO programming. Students are introduced to the concept of classes and how abstraction, encapsulation, and inheritance fit into the object paradigm. Students learn OO analysis and design. Syntax and its idioms are covered with particular emphasis on programming using OO. *Prerequisite: CPS 121 or 162 with a grade of C or higher; or permission of the Instructor.*

## **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 are 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

# Course Descriptions

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 and 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.* (D)

## **CJ 243 - International and 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 AA 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

### **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 - Applied Hospitality Math** 2:2:0

Develops crucial math skills needed for success in food service and hotels. This course covers basic Math essentials, and industry specific applications that include decimals, fractions, percentages, measurements, yields, and costing. A course fee is required. *Prerequisite: Placement through the College Testing and Placement Program or completion of MATH 010 with a grade of C or higher.*

### **CULI 106 - Professional Bartending** 1:0.67:1

Covers the fundamentals of bar keeping. The course focuses on basic terminology, service standards, bartending service, product knowledge, legal aspects of serving alcohol, sales transactions and operations, and the art of mixology. A course fee is required. The Pennsylvania Liquor Control Board allows persons 18 years of age and older to serve wine and spirits. Since some course activities involve in-class mixology activities, brewery tours and a lab experience as a bartender, students must provide the same documentation of age to be served alcoholic beverages as would be required by a public establishment.

### **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.

# Course Descriptions

## **CULI 123 - Catering: Principles, Garnishing, and HorsD'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** 5:3:4

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. *Enrollment is restricted to students in the Culinary Arts AA, Certificate, and Diploma programs. A course fee is required. Co-requisite: CULI 113.*

## **CULI 143 - Culinary Arts II** 5:3:4

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** 5:3:4

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 AA, Certificate, and Diploma 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 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 running, receiving/ storeroom and dish room, and basic production. 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 AA and Certificate programs. Majors must maintain their enrollment in CULI 143 and 205 throughout the entire semester. Prerequisite: CULI 113 and CULI 133 with grades of C or higher. 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 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 garde manger, pizza, hosting, and bakery. 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 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 Culinary Arts AA and Certificate programs. Prerequisite: CULI 143 and CULI 205 with grades of C or higher.*

## **CULI 207 - Restaurant Operations III: Culinary** 2:0:12

Introduces students to the culinary industry 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 are to include bartending and line stations - roast, grill, and pasta. 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 AA and Certificate programs Prerequisite: CULI 206 with a grade 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

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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 3:0:22**

Provides students with the opportunity to gain hands-on experience working in the food service industry for a total of 320 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 AA program. Prerequisite: CULI 207 with a grade of C or higher.*

## **Dental Assisting**

### **DA 170 - Dental Assisting Pre-clinic 4:3:3**

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. *Enrollment is restricted to students in the Dental Assisting Certificate. Prerequisite: ENGL 101, COMM 101, BIOL 111 or 121 with grades of C or higher.*

### **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 procedural set-ups and the manipulation of dental materials. Focus is given to the types of procedures performed in the general dental office and specialty offices, the theory behind these procedures, and the instruments and materials associated with each procedure. 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: ENGL 101, COMM 101, and BIOL 111 or 121 with grades of C or higher.*

### **DA 172 - Dental Materials 4:2:5**

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. *Enrollment is restricted to students in the Dental Assisting Certificate. Non-majors need permission of the Program Director. A course fee is required. 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: COMM 101, ENGL 101, and BIOL 111 or 121 with grades 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: COMM 101, ENGL 101, and BIOL 111 or 121 with grades of C or higher.*

### **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

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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 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 AA program. Prerequisite: BIOL 221 with a grade of C or higher. Co-requisite: DH 110 and 120.*

### **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 AA program. Prerequisite: BIOL 121 and 122 with grades of C or higher. Co-requisite: BIOL 245 and DH 120.*

### **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 112 - Dental Hygiene Theory II 2:2:0**

Discusses preventive oral care services including: assessment, treatment planning, implementation, and evaluation of children and adults. A course fee is required. *Enrollment is restricted to students in the Dental Hygiene AA program. Prerequisite: DH 101, DH 110, and DH 120 with a 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, DH 110, and DH 120 with a grade of C or higher. Co-requisite: DH 112.*

### **DH 120 - Dental Anatomy 2:2:0**

The form, function, occlusion, and eruption of primary and permanent teeth. Study includes endodontic and coronal morphological considerations and periodontal health. *Prerequisite: BIOL 121 with a grade of C or higher. Co-requisite: BIOL 245 and DH 110.*

### **DH 121 - Periodontics I 2:2:0**

Studies the clinical presentation of periodontal structures including the histology and immunology in health and disease. In addition, this course also studies periodontal disease etiology, epidemiology, and diagnosis. *Enrollment is restricted to students*

# Course Descriptions

in the Dental Hygiene AA program. Prerequisite: BIOL 245, DH 101 and DH 120 with grades of C or higher. Corequisite: NUTR 104.

## **DH 130 - Medical/Dental Emergencies 1:1:0**

Studies the utilization of client assessment and medical conditions to determine potential emergencies that can arise during patient care. In addition, this course also studies medical emergency procedures and prevention techniques. Enrollment is restricted to students in the Dental Hygiene AA program. Prerequisite: DH 101 with a grade of C or higher.

## **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 AA 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 AA 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 AA 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. Emphasis is on injectable local anesthesia. A course fee is required. Prerequisite: MATH 051, BIOL 245, DH 112, DH 113, and DH 130 with a grade of C or higher. Co-requisite: DH 114.

## **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 AA program. Prerequisite: DH 113, 114, 121, 150, and NUTR 104 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 AA program. Prerequisite: DH 101, 113, 114, 121, 150, and NUTR 104 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 AA 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 AA program. Prerequisite: DH 211, 212, and 221 with grades of C or higher. Co-requisite: DH 223.

## **DH 230 - Oral Pathology 2:2:0**

Covers the characteristics necessary for students to recognize the difference between normal and abnormal conditions of the head and neck region. Enrollment is restricted to students in the Dental Hygiene AA program. Prerequisite: DH 111 and 112 with grades of C or higher.

## **DH 233 - Community Dental Health I 1:1:0**

Studies the role of the dental hygienist as an educator and planner for community dental health programs. This course explores global perspectives in oral health needs, as well as demand and utilization, with consideration given to cultural competency. Enrollment is restricted to students in the Dental Hygiene AA program. Prerequisite: DH 112 with a grade of C or higher.

## **DH 234 - Community Dental Health II 1:1:0**

Discusses the criteria utilized in the evaluation of community dental health programs. This course introduces biostatistics and the evaluation of evidence-based research in addition to exploring oral epidemiology and epidemiological research in dentistry. Enrollment is restricted to students in the Dental Hygiene AA program. Prerequisite: DH 233 with a grade of C or higher. Co-requisite: DH 223.

## **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 AA program. Prerequisite: BIOL 122, DH 112, and NUTR 104 with grades of C or higher.

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## **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 AA 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 AA program. Prerequisite: DH 251 with a grade of C or higher.*

## **Diagnostic Medical Sonography**

## **DMS 105 - Introduction to Health Care 4:3:3**

Provides an introduction to the role of a health care professional. This course presents concepts that include: patient care, medical ethics and law, medical terminology, maintaining clinical records, trends in health care, 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 AS program. Prerequisite: BIOL 122, COMM 101 or 203, ENGL 102, MATH 103, and PHYS 151 with a grade of C or higher.*

## **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 AS program. Prerequisite: BIOL 122, ENGL 102, COMM 101 or 203, MATH 103, and PHYS 151 with grades of C or higher.*

## **DMS 115 - Clinical Experience I 1:0:8**

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 one, eight hour day per week. A course fee is required. *Enrollment is restricted to students in the Diagnostic Medical Sonography AS program. Prerequisite: DMS 105 and DMS 110 with a grade of C or higher.*

## **DMS 120 - Diagnostic Medical Sonography Lab I 1:0:3**

Covers ultrasound scanning techniques using ultrasound equipment in the lab setting. This course also 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 AS program. Prerequisite: DMS 105 and DMS 110 with a grade 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 AS program. Prerequisite: DMS 115, 120, 130, 150, and 170 with grades of C or higher.*

## **DMS 130 - Abdominal Sonography I 3:3:0**

Details the normal anatomy and physiology of the abdomen. This course explains clinical and sonographic findings related to the pathology of the abdomen, as well as describing Doppler principles and uses. *Enrollment is restricted to students in the Diagnostic Medical Sonography AS program. Prerequisite: DMS 105 and DMS 110 with a grade of C or higher.*

## **DMS 140 - Diagnostic Medical Sonography Lab II 1:0:3**

Covers ultrasound scanning techniques using ultrasound equipment in the lab 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. *Enrollment is restricted to students in the Diagnostic Medical Sonography AS 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 also presented. *Enrollment is restricted to students in the Diagnostic Medical Sonography AS program. Prerequisite: DMS 105 and DMS 110 with a grade 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 AS program. Prerequisite: DMS 105 and DMS 110 with grades of C or higher.*

## **DMS 180 - High Resolution Imaging 2:2:0**

Details the normal anatomy and physiology of the neck, breast, scrotum, musculoskeletal, anterior abdominal wall, extremities, neonatal head, hips, and spine and superficial structures. This course explains 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 AS program. Prerequisite: DMS 115, 120, 130, 150, and 170 with grades of C or higher.*

## **DMS 210 - Introduction to Vascular Sonography 3:3:0**

Introduces students to vascular sonography. This course discusses the signs and symptoms of vascular disease. In addition, sonographic application is described and Doppler principles related to vascular imaging are covered. *Enrollment is restricted to students in the Diagnostic Medical Sonography AS program. Prerequisite: DMS 115, 120, 130, 150, and 170 with grades of C*

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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 AS program. Prerequisite: DMS 125, 140, 180, 210, and 230 with grades of C or higher.*

## **DMS 220 - Diagnostic Medical Sonography Lab III 1:0:3**

Covers ultrasound scanning techniques using ultrasound equipment in the lab 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 AS program. Prerequisite: DMS 125, 140, 180, 210, and 230 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 AS program. Prerequisite: DMS 215, 220, 250, and 270 with grades of C or higher.*

## **DMS 230 - Abdominal Sonography II 1:1:0**

Details the normal anatomy and physiology of the gastrointestinal tract, spleen, retroperitoneum, prostate, peritoneal cavity and non-cardiac chest. This course addresses emergency ultrasound and pediatric imaging; explains the sonographic findings related to the pathology of the aforementioned areas; and describes Doppler principles and uses. *Enrollment is restricted to students in the Diagnostic Medical Sonography AS program. Prerequisite: DMS 115, 120, 130, 150, and 170 with grades of C or higher.*

## **DMS 250 - OB/GYN Sonography II 3:3:0**

Introduces students to processes 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 AS program. Prerequisite: DMS 125, 140, 180, 210, and 230 with grades of C or higher.*

## **DMS 270 - Acoustical Principles II 3:3:0**

Continues the topics covered in DMS 170. This course addresses advanced principles in medical ultrasound imaging, instrumentation, hemodynamics, and Doppler. Doppler instrumentation and application are also included. Students are required to attempt the American Registry for Diagnostic Sonography (ARDMS) Sonography 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 AS program. Prerequisite: DMS 125, 140, 180, 210, and 230 with grades of C or higher.*

## **DMS 274 - Diagnostic Medical Sonography Topics 2:1:4**

Covers the sonographic review of anatomy, pathology, imaging techniques and integration of data. This course discusses associated imaging and invasive procedures. 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. *Enrollment is restricted to students in the Diagnostic Medical Sonography AS 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. (Core B)

### **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.* (Core B)

## **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 3:3:0**

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. *Enrollment is restricted to students in the Early Childhood- Elementary Education AA (5070), Early Childhood Care and Education Certificate (5170). Prerequisite: Completion of all developmental reading and writing courses required as a result of the College Testing and Placement Program. Students must complete all*

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*clearances (State Police, Child Abuse, FBI Fingerprint (ACT 34 & 141) and TB Test) and have documentation on file within the Academic Department Office before permission is granted to enroll in this course.*

## **EDUC 111 - Fundamentals of Early Care 3:3:0**

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.*

## **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 and Education 3:3:0**

Covers methods for the care and education of infants and toddlers, within the context of diverse family structures and cultures. Students examine the developmental characteristics and variations in temperament, ability, and rates of maturation. Emphasis is on responsive caregiver skills and in preparing stimulating environments to meet individual goals within each developmental domain. Ten hours of observation is required in both infant and toddler group settings. *Prerequisite: EDUC 111 with a grade of C or higher or concurrently enrolled in EDUC 111.*

## **EDUC 155 - Fundamentals of Family Child Care 3:3:0**

Introduces the essentials for operating a family child care home-based business to potential and existing child care 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. (D)*

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## **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 the 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 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 EDUC 111, PSYC 212, EDUC 140, EDUC 220, EDUC 260, and EDUC 270 with a grade of C or higher. For students in the Certificate Program only: EDUC 185 may be substituted in place of PSYC 212 by permission of the 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 multicultural, 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 the teaching process. Topics include instructional strategies; developing learning objectives; applying various taxonomies; and differentiating instruction. Classroom management and assessment techniques that foster student learning are presented. Twenty hours of classroom field experience is required. *Enrollment is restricted to those students in Early Childhood-Elementary Education (5070) and Early Care and Education (5501) programs. Prerequisite: EDUC 110 or 111, and PSYC 212 with a grade of C or higher.*

## **EDUC 291 - Early Care and Education Practicum 3:2:10**

A Capstone course. During 9 of the 15 weeks, students complete 10-hours (each week) 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. Students 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 must also meet weekly during the 15 weeks to reflect upon/discuss the implementation and integration of coursework as applied to children's learning and care. *Prerequisite: EDUC 110 or 111, EDUC 210 or 211, PSYC 212, EDUC 261, EDUC 270, and ENGL 101 with a grade of C or higher.*

## **EDUC 295 - Program Development and 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

# Course Descriptions

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. *Prerequisite: ELOC 153 and 172, and GTEC 130 with grades of C or higher; or permission of the Instructor or Program Coordinator.*

### **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. *Prerequisite: ELOC 157 or permission of the Instructor or Program Coordinator.*

### **ELOC 165 - Alarm and Phone Cabling 2:1:2**

Installation, troubleshooting and repair of single- and multi-line systems for telephones, fax machines, and alarms. A course fee is required. *Prerequisite: ELOC 157 with a grade of C or higher; or permission of the Program Coordinator.*

### **ELOC 168 - Introduction to Fiber Optics 3:2:2**

Introduction to fiber optics as used in modern communications systems. Students investigate the types, theory, and applications of fiber optics commonly used in the industry. Laboratory activities

include cleaving, connecting, and installing fiber optic cable in simple circuits. A course fee is required. *Prerequisite: ELOC 153 with a grade of C or higher; or permission of the Program Coordinator.*

### **ELOC 171 - Electrical Service 2:1:2**

The procedures for 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**

Layout of the National Electrical Code with emphasis on requirements for service, feeder, and branch circuits, conductor sizing and grounding. An analysis of appropriate wiring methods for residential and commercial buildings is provided.

### **ELOC 175 - Electrical System Troubleshooting 3:2:2**

Skills and procedures for troubleshooting electrical circuits. Students learn to systematically identify problems, isolate probable causes, repair malfunctions, and establish preventative maintenance systems. Laboratory work is completed on live problems found in typical industrial settings. A course fee is required. *Prerequisite: ELOC 153 or 151 and 152, and GTEC 130 with grades 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.

### **ELOC 291 - Cooperative Work Experience 3:0:15**

A part-time work experience with an approved electrical 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 ELOC courses and who are enrolled in either the Electrical Technology AAS or Certificate programs. Prerequisite: IA 201 and ELOC 163 with grades of C or higher; or permission of the Program Coordinator.*

## **Electronics**

### **ELEC 100 - Fundamentals of Electricity and 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. *Co-requisite: MATH 051.*

### **ELEC 101 - Equipment Utilization 1:0:3**

Introduction to basic electronic devices and special technical skills: use of voltmeters, ammeters, ohmmeters, and basic hand

# Course Descriptions

tools; electronic component identification, applications and testing; familiarization with schematic diagrams and soldering techniques; laboratory safety instruction. Previous electronic experience is not required for this course. A course fee is required. *Co-requisite: ELEC 100.*

## **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**

Study of digital logic circuit fundamentals. Topics include numbering systems, logic gates, Boolean algebra simplification, and combinational logic circuits. A course fee is required. *Prerequisite: ELEC 100 and MATH 051 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 Kirchhoff'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**

Is designed to provide fundamental knowledge of common industrial electronic components to students pursuing credits in the Mechatronics and/or other technology programs. Students learn lifelong skills in diagnosing, testing and repairing industrial applications of diodes, transistors, thyristors, rectifiers, voltage regulation, amplifiers, and SCR's. 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 ELEC 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 program and who are enrolled in either the Electronic Engineering Technology AS or Certificate programs; or permission of 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. *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 EMS 132.*

# Course Descriptions

## **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 5:5:0**

Emphasis on patient assessment, shock and fluid therapy, pharmacology, and field communications. *Prerequisite: EMS 131 and EMS 132.*

## **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 6:6:0**

Emphasis on diseases and the treatment of respiratory, cardiovascular, and neurological system emergencies, hematology, and blood disorders. *Prerequisite: EMS 231 and EMS 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 3:3:0**

Emphasis on medical emergencies, trauma, obstetrical/gynecological emergencies, pediatric/neonatal emergencies, and psychiatric problems. *Prerequisite: EMS 233 and EMS 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 EMS 234.*

## **EMS 238 - Introduction to Rescue 3:2:3**

Rescue of patients trapped in vehicles and structures with emphasis on safety. *Prerequisite: EMS 131 and EMS 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 2:2:0**

Emphasizes 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. *Enrollment is restricted to those students in the Paramedic-EMT AA and Certificate programs. Prerequisites:*

*EMS 235 and EMS 236 with a grade of C or higher.*

## **EMS 244 - Advanced Life Support Special Topics Hospital Experience 2:0:6**

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 AA and Certificate programs. Prerequisite: EMS 236 with a grade of C or higher. Co-requisite: EMS 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*

# Course Descriptions

for enrollment into ENGL 101.

## **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. *Prerequisite: MATH 103 and 104 with a grade of C or higher.*

## **ENGR 213 – Statics 3:3:0**

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 3:3:0**

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 Program Coordinator.*

## **English**

## **ENGL 001 - Strategy-Based Reading I 3:3:0**

Courses in reading improvement open to all students. While comprehension strategies are emphasized for most students, the courses are also intended to serve those students who need to improve their vocabulary and reading fluency. Students required to take reading may have to work through more than one semester. Students who must enroll in these courses are identified through the College Testing and Placement Program and are notified. *Prerequisite: ENGL 001 entry-level performance in the College Testing and Placement Program.*

## **ENGL 002 - Strategy-Based Reading II 3:3:0**

Courses in reading improvement open to all students. While comprehension strategies are emphasized for most students, the courses are also intended to serve those students who need to improve their vocabulary and reading fluency. Students required

to take reading may have to work through more than one semester. Students who must enroll in these courses are identified through the College Testing and Placement Program and are notified.

*Prerequisite: ENGL 002 entry-level performance in the College Testing and Placement Program, or ENGL 001 with a grade of C or higher.*

## **ENGL 003 - Strategy-Based Reading III 3:3:0**

Courses in reading improvement open to all students. While comprehension strategies are emphasized for most students, the courses are also intended to serve those students who need to improve their vocabulary and reading fluency. Students required to take reading may have to work through more than one semester. Students who must enroll in these courses are identified through the College Testing and Placement Program and are notified.

*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 into ENGL 003 and who choose to enroll into ENGL 101 within the same semester must maintain their enrollment into 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**

A skills-building sequence for non-native English speakers that teaches the grammatical structure, vocabulary, and sound system of American English. Integrated development of the listening, speaking, reading, and writing skills within each level. 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**

A skills-building sequence for non-native English speakers that teaches the grammatical structure, vocabulary, and sound system of American English. Integrated development of the listening, speaking, reading, and writing skills within each level. 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 with a grade of C or higher, or meeting the ENGL 026 exit criteria through the ESL portion of the College Testing and Placement Program.*

## **ENGL 028 - English as a Second Language 6:5:2.25**

A skills-building sequence for non-native English speakers that teaches the grammatical structure, vocabulary, and sound system of American English. Integrated development of the listening,

# Course Descriptions

speaking, reading, and writing skills within each level. 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 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

A skills-building sequence for non-native English speakers that teaches the grammatical structure, vocabulary, and sound system of American English. Integrated development of the listening, speaking, reading, and writing skills within each level. Focus on both fluency and accuracy. Students who must enroll in the ESL courses are identified through the ESL portion of the College Testing and Placement Program. *Prerequisite: ENGL 028 with a grade of C or higher, or meeting of 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 and Writing** 3:3:0

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 ENGL 003 and/or ENGL 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

The development of fluency in writing clear, forceful, effective prose. *Prerequisite: Placement through the College Testing and Placement Program or completion of ENGL 051 or 057 with a grade of C or higher; ENGL 003 or 007 is a Pre or Co-requisite.*

## **ENGL 101H - Honors English Composition I** 3:3:0

The development of fluency in writing clear, forceful, effective prose. 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: Honors Studies Major or completion of all developmental reading and writing courses required as a result of the College Testing and Placement Program.*

## **ENGL 102 - English Composition II** 3:3:0

Builds on English 101, connecting thinking, reading and writing. Research, interpretation, and argumentation emphasized. *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

Builds on English 101, connecting thinking, reading and writing. Research, interpretation, and argumentation emphasized. 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; Honors Studies Major.*

## **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 or 007 (when required by the College Placement Test) with a grade of C or higher.*

## **ENGL 107 - Creative Writing I** 3:3:0

A workshop in the writing of works of fiction and non-fiction in shorter forms. *Prerequisite: ENGL 101 or permission of the Instructor.*

## **ENGL 108 - Creative Writing II** 3:3:0

Builds on the principles discussed in ENGL 107 for the writing of more sophisticated forms of poetry, fiction, and plays. *Prerequisite: ENGL 107 or permission of the Instructor.*

## **ENGL 201 - Major English Writers I** 3:3:0

Representative works of British literature from the Middle ages through the Restoration and Eighteenth Century. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program. (Core A)*

# Course Descriptions

## **ENGL 202 - Major English Writers II 3:3:0**

Representative works of British literature from the Romantic period to the present. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.* (Core A)

## **ENGL 203 - Major American Writers I 3:3:0**

Texts from the earliest period through 1865. Typical writers discussed include Edwards, Hawthorne, Poe, Douglass, and Dickinson. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.* (Core A)

## **ENGL 204 - Major American Writers II 3:3:0**

Writers from 1865 to the present. Typical works discussed include those by Twain, Cather, Hemingway, Baldwin, Morrison and major poets. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.* (Core A)

## **ENGL 205 - World Literature I 3:3:0**

Representative works from antiquity to the end of the European Renaissance. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.* (Core A)

## **ENGL 206 - World Literature II 3:3:0**

Representative works from the Seventeenth Century to the present, including examples from Europe, the Middle East, Asia, Africa, and the Americas. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.* (Core A)(D)

## **ENGL 207 - Introduction to Literature 3:3:0**

Understanding and increasing human experience through literature. The major literary types (poetry, fiction, and drama) are defined and illustrated through examples drawn from English and American literature as well as other literatures of the world. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.* (Core A)

## **ENGL 207H - Honors Introduction to Literature 3:3:0**

Understanding and increasing human experience through literature. The major literary types (poetry, fiction, and drama) are defined and illustrated through examples drawn from English and American literature as well as other literatures of the world. 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: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program and/or an Honors Studies Major.* (Core A)

## **ENGL 217 - African-American Literature 3:3:0**

Race, class, gender, and politics as portrayed in African-American literature from colonial times to the present. The emphasis is on the ways African-American writers have depicted the perils and promise of reconstruction, the migration to urban life, and topics

in contemporary literature. The course also examines how historical and political movements account for various ways the urban experience is represented and how it is reflected in the shape of the narrative itself. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement program.* (Core A)

## **ENGL 246 – Shakespeare 3:3:0**

Reading of six or more plays. Included will be examples of comedies, tragedies and histories. *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 significant female writers from the 12th Century (Middle Ages) to the present. This course explores all genres - novels, poetry, short essays, drama, and short fiction. Readings include geographically defined female writers whose works reflect their diverse cultures, experiences, perspectives, and/or world views. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.* (D)

## **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**

Short stories, poems, novels, and essays by American Indian writers. The readings explore such topics as identity, cultural tension, and religion in the American Indian experience. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.* (D)

## **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,

# Course Descriptions

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. Student must be at least 21 years of age to participate in wine evaluation. A course fee is required.

### **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, ENVI 164, ENVI 173, and ENVI 183 with a grade 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.*

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## **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 ENVI 277 with a grade 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. Students must be at least 21 years of age to participate in wine evaluation. A course fee is required. *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.

## **Entrepreneur**

## **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.

## **ENTR 103 - Product Management for the Entrepreneur 3:3:0**

Covers topics necessary to manage products from the development stage through distribution. Topics include: prototype development, identifying resource needs, production, quality control and managing the product life cycle.

## **ENTR 203 - Finance and Accounting for the Entrepreneur 4:4:0**

Topics in finance and accounting necessary for the entrepreneur including: developing a financial plan, preparing a financial analysis, managing cash and company growth. Computerized accounting is also covered. Students complete a comprehensive financial plan tailored to their individual interest or business needs.

## **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. (Core C)*

## **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 the 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 the 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 the 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

# Course Descriptions

environmental professionals. Seminar may be taken more than once. A course fee is required. *Prerequisite: Permission of the 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 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 with a grade of C or higher, or permission of the Instructor.*

## **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 restricted to students in the Environmental Specialist AS 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 restricted to students in the Environmental Specialist AS program. Prerequisite: Permission of the Program Coordinator.*

# Course Descriptions

## 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: MATH 051 with a grade of C or higher; or Co-requisite: MATH 051; and eligibility for enrollment into ENGL 101.*

### **EXSC 104 - Exercise Measurement and Prescription 3:3:0**

Teaches the student how to evaluate and prescribe exercise to a variable population. The course covers aspects of health related physical fitness components (cardiorespiratory endurance, muscular strength, muscular endurance, flexibility, and body composition) and how to assess each of these components. The course also covers liability, certifications, and safety procedures that are relevant to the fitness industry. *Enrollment is restricted to students in the Exercise Science-Physical Education AS program. Prerequisite: MATH 020 with a grade of C or higher, and eligibility for enrollment into ENGL 101.*

### **EXSC 150 - Exercise for Special Populations 3:3:0**

The field of exercise science and how it affects people with special concerns relating to physical fitness. The course examines the physical state of these people as well as the proper exercise testing and prescription. The focus of the class is on metabolic disorders such as obesity, diabetes, and hypertension as well as coronary artery disease, stroke, osteoporosis, and physically challenged individuals. The course also examines the geriatric population as well as children. *Enrollment is restricted to students in the Exercise Science-Physical Education AS program. Prerequisite: EXSC 102 with a grade of C or higher and Co-requisite of EXSC 140.*

### **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 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 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. *Enrollment is restricted to students in the Exercise Science-Physical Education 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 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, EXSC 202, EXSC 203, and EXSC 206 with a grade of C or higher; Co-requisite: EXSC 206; or approval from the Program Coordinator.*

## Fire Science

### **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

# Course Descriptions

behavior change throughout the emergency services. *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 107 - Fire Service Management 3:3:0**

Theory and practice of public management applied to fire protection. Organizational structure and command are examined, as are personnel development and management, budgeting and fiscal management, and management systems and techniques within the context of contemporary fire protection. Course also covers policy development and advocacy by fire protection administrators in the public and private sectors.

## **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. *Prerequisite: MATH 051 and FIRE 101 with grades of C or higher.*

## **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, 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. *Prerequisite: FIRE 101, ENGL 101, and ENGL 102 or 104 with grades of C or higher. Corequisite: ENGL 102 or 104.*

## **FIRE 205 - Fire Alarm/Detection Systems 3:3:0**

A study of the nature of public and private fire protection, with an emphasis on analysis of systems of fire detection, fire alarm, and fire communications. *Prerequisite: FIRE 201 with a grade of C or higher.*

## **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 208 - Fire Suppression Systems 3:3:0**

The fundamentals of fire extinguishing systems including automatic sprinklers, standpipe systems, and non-water systems. *Prerequisite: FIRE 201 with a grade of C or higher.*

## **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).

## **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.

### **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.*

### **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.

### **FS 106 - Online Success 1:1:0**

Introduces students to the online learning environment. This course helps them learn to adapt previously established study

# Course Descriptions

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 125 - Becoming a Master Student 3:3:0**

Provides opportunities for students to learn and apply attitudes and behaviors that lead to success in both college and in life. Topics covered include choosing meaningful academic and personal goals, creating effective action plans, building support networks, developing self-esteem, and accepting personal responsibility. *Prerequisite Placement into ENGL 003 or higher as directed by the College Testing and Placement Program.*

## **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. (Core A)(D)*

## **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. (Core A)(D)*

## **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. (Core A)(D)*

## **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. (Core A)(D)*

## **Furniture**

## **FURN 260 - Introduction to Furniture Making 4:2:4**

Furniture making introduction. Students participate in a group furniture construction project in preparation for individual designing/building of furniture pieces. A historical overview prepares students to apply design sensibility and functional considerations to individual projects. A course fee is required. *Prerequisite: WOOD 102 with a grade of C or higher.*

## **General Technology**

## **GTEC 101 - Safety: OSHA-30 & NFPA-70E 3:3:0**

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**

Mechanical properties of materials used in manufacturing. Basic principles of materials selection, manufacturing processes, and the relationship of materials to manufacturing methods are explored. Material properties are examined in laboratory sessions with destructive and nondestructive tests. A course fee is required. *Prerequisite: MATH 051 with a grade 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).

## **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.

# Course Descriptions

## **GTEC 201 – Statics 3:3:0**

Force systems on rigid bodies and the response of those bodies to the applied forces; equilibrium of planar and non-planar force systems; centroids; moments of inertia. Algebra and trigonometry are used to solve applied examples. *Prerequisite: MATH 103 with a grade of C or higher. Co-requisite: MATH 104.*

## **GTEC 202 - Statistical Quality Control 3:3:0**

An introduction to improving 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 051 with a grade 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 Geographic Information Systems (GIS) 3:2:3**

Introduces the principles of physical geography and database administration. This course covers specific skills such as map and database editing, spatial operations, integration of multiple data sources and the basics of cartography. Students are also introduced to related technologies, such as remote sensing and Global Positioning Systems (GPS). Building upon the introduction to GIS, students then explore applications in various sectors. Practical examples from government, environmental studies, and the utility industry are discussed. Hands-on experience using the analytical tools provided by GIS, such as spatial analysis, is applied to solve case studies. The class culminates in individual projects using multiple sources of GIS data to solve problems in the student's area of interest. A course fee is required. (Core B)

### **GIS 141H - Honors Introduction to Geographic Information Systems 3:2:3**

Introduces the principles of physical geography and database administration. This course covers specific skills such as map and database editing, spatial operations, integration of multiple data sources, and the basics of cartography. Students are introduced to related technologies, such as remote sensing and Global Positioning Systems (GPS). Building upon the introduction to GIS, students then explore applications in various sectors. Practical examples from government, environmental studies, and the utility industry are discussed. Hands-on experience using the analytical tools provided by GIS, such as spatial analysis, is applied to solve case studies. The class culminates in individual projects using multiple sources of GIS data to solve problems in the student's area of interest. 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: Honors Studies Major or completion of all developmental reading and writing courses required as a result of the College Testing and Placement Program.* (Core B)

## **GIS 151 - Cartographic Design for GIS 3:2:3**

Provides an introduction to the techniques of cartography (map making) applicable to geographic information systems. Students will be introduced to cartographic principles, map design, map interpretation, map projections, map scale, types of thematic maps, and map accuracy. Techniques of map production in a geographical information system, including scanning, digitizing, and coordinate geometry is introduced. The course includes map production and presentation techniques in a computer-assisted environment. *Prerequisite: GIS 141 with a grade of C or higher.*

## **GIS 161 - Data Acquisition and Remote Sensing 4:3:3**

Fundamentals of data acquisition and remote sensing for geographic information systems. Topics include acquisition of existing data, data mining, documentation and metadata, data format conversion, data acquisition by remote sensing, photogrammetry, digitizing, scanning, and global positioning systems (GPS). Laboratory experience includes practical exercises using and interpreting remote sensing data and acquiring, downloading, and correcting GPS data. *Prerequisites: GIS 141 with a grade of C or higher.*

## **GIS 163 - Advanced Geographic Information Systems 4:3:3**

Advanced techniques and applications of geographic information systems (GIS). Lectures will cover advanced technical issues in GIS including complex data issues, databases, spatial modeling and analysis, elevation and terrain modeling, geographic analysis, and GIS management. Laboratory exercises give students hands-on experience with GIS software packages to handle geospatial information. *Prerequisite: GIS 151 and 161 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.

## **GIS 291 - Cooperative Work Experience in GIS 3:0:15**

Work experience in an approved business or government setting involving use of the knowledge and skills acquired in the GeoSpatial Technology program. Students are monitored by an advisor from the college. *Enrollment is restricted to students in the GeoSpatial Technology AAS program. Prerequisites: Completion of at least 30 credits in the GeoSpatial Technology AAS program and permission of the Program Coordinator.*

## **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). (Core B)(D)

# Course Descriptions

## **GEOG 230 - Introduction to Human Geography 4:3:0**

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. (Core B)(D)

### **Geology**

## **GEOL 101 - Physical Geology 4:3:3**

A study of the composition of the earth and the physical processes which tend to alter and shape the surface of the earth. Laboratory includes field trips in the vicinity of Harrisburg, the identification of common rocks and minerals, and the study and interpretation of topographic and geologic maps. A course fee is required. (Core C)

## **GEOL 101H - Honors Physical Geology 4:3:3**

A study of the composition of the earth and the physical processes which tend to alter and shape the surface of the earth. Laboratory includes field trips in the vicinity of Harrisburg, 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: Honors Studies Major or completion of all developmental reading and writing courses required as a result of the College Testing and Placement program.* (Core C)

## **GEOL 102 - Historical Geology 4:3:3**

Geologic history of the earth; development of plant and animal life through geologic time; development of various rock formations; study of the past, present, and possible future environments of man; an 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. (Core C)

## **GEOL 201 - Environmental Geology 4:3:3**

Studies geologic resources and processes, impact of geoenvironmental 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. *Co-requisite: MATH 020.* (Core C)

### **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 into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.* (Core A) (D)

## **GRMN 102 - Elementary German II 4:4:0**

Continuation of GRMN 101 with increased emphasis on speaking and reading. *Prerequisite: GRMN 101 or equivalent.* (Core A) (D)

## **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.* (Core 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.* (Core 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.

# Course Descriptions

## **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. *Prerequisite: PE 138 or PE 201 with a 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 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. (Core B)*

### **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. (Core B)*

### **GP 205 - International Relations 3:3:0**

An introduction to the major influences among nation-states. Emphasis is on 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.

# Course Descriptions

## Green Technology

### **GREN 101 - Introduction to Alternative Energy 3:3:0**

Provides a fundamental understanding of alternative energy systems. Emphasis is on both the micro- and macro- levels of alternative energy systems. Return on investment and future trends in the applications of renewable energy are also discussed.

### **GREN 102 - Alternative Energy Economics 3:3:0**

Introduces engineering economics and accounting principles for evaluating alternative energy projects. Specific focus on project development includes life-cycle cost analysis and other evaluation techniques. Infrastructure technologies, such as the Smart Grid and net-zero energy buildings, serve as case studies. *Prerequisite: MATH 161 or MATH 178 with a grade of C or higher.*

### **GREN 105 - Photovoltaic Energy and Systems I 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 and MATH 161 with a grade of C or higher.*

### **GREN 110 - Wind Energy and Systems I 3:2:2**

Introduces wind turbine technology and examines its environmental impact and feasibility for residential and commercial use. Through lecture and hands-on labs, students gain exposure to various wind turbine technologies and are able to compare various designs for output and performance. A course fee is required. *Prerequisite: ELOC 153 and MATH 161 with a grade of C or higher; or permission of the Program Coordinator.*

### **GREN 115 - Geothermal Energy and Systems I 3:2:3**

Provides a fundamental understanding of geothermal energy. Emphasis is on both the micro- and macro- levels of geothermal energy and heating/cooling systems. System identification, troubleshooting, measurement and verification, and system inspections are discussed. A course fee is required. *Prerequisite: MATH 161 and ELOC 153 with a grade of C or higher.*

### **GREN 125 - Distributed Generation and Storage I 4:2:4**

Prepares students to work in the alternative energy industry. This course covers alternative energy systems (fuel cell, kinetic, capacitor, batteries) and their interface with the Smart Grid or stand-alone. In addition, construction of energy systems are covered along with efficiencies, inspections, maintenance, reliability, and comparative analyses. Students design systems, calculate output, construct and measure power quality with comparative insight, analyze costs, and calculate environmental benefits - greenhouse - gas offset and local resource availability. Emphasis on the use of safe practices for operating basic electrical tools and related monitoring/testing equipment is also covered. A course fee is required. *Prerequisite: ELOC 153 with a grade of C*

*or higher; or permission of the Instructor or Program Coordinator.*

### **GREN 200 - Introduction to Energy Analysis 3:3:0**

Prepares students to perform audit projects. Emphasis is on reporting on recommendations to "structure envelopes" and on measuring energy and control systems with regard to "payback." Surveying utility rate structures, energy consumption, and energy profiling of buildings is also covered. *Prerequisite: MATH 161 with a grade of C or higher.*

### **GREN 205 - Photovoltaic Energy and Systems II 3:2:2**

Prepares students to design and manage a Photovoltaic Energy (PV) System. Students gain experience by installing the electrical and mechanical components, testing and commissioning the PV system, conducting maintenance, and troubleshooting activities after an installation has occurred. A course fee is required. *Prerequisite: GREN 105 with a grade of C or higher; or permission of the Program Coordinator.*

### **GREN 210 - Wind Energy and Systems II 3:2:2**

Builds upon the fundamentals introduced in GREN 110. This course includes important aspects associated with working on a jobsite such as safety, emergency response, maintenance, and site cleanup. Also, site installations are covered in more depth. A course fee is required. *Prerequisite: GREN 110 with a grade of C or higher; or permission of the Program Coordinator.*

### **GREN 215 - Geothermal Energy and Systems II 3:2:3**

Builds upon the fundamentals covered in GREN 115. Students gain a more in-depth understanding of geothermal energy systems and integration as they are introduced to specific policies relevant to the alternative energy field. Future trends in geothermal energy and systems are also emphasized. A course fee is required. *Prerequisite: GREN 115 with a grade of C or higher.*

### **GREN 218 - Sustainable Materials Management 3:3:0**

Introduces the sustainability principles and practices used in the creation of materials management systems. Students develop skills to plan, design, implement, and govern a materials management program, as well as, learn to prioritize and achieve sustainability goals. *Prerequisite: MATH 178 and ENGL 101 with a grade of C or higher. Co-requisite: ENVS 201; or permission of the Instructor.*

### **GREN 221 - Project Management and Design 3:3:0**

Introduces the fundamentals of project management and the integration of sustainable business practices. Students review case studies and prepare a project management plan that includes the creation of technical assistance procedures, training programs, contracts, scope-of-work plans, schedules, and budget tracking. *Prerequisite: MATH 178 and ENGL 104 with a grade of C or higher. Co-requisite: ENVS 201; or permission of the Instructor.*

### **GREN 225 - Distributed Generation and Storage II 4:2:4**

Continues the topics covered in GREN 125 with more emphasis on design, calculation, construction use, and the storage of energy. Increased utilization of monitoring equipment, for software analysis of power efficiencies, and environmental impact studies are also covered. A course fee is required. *Prerequisite: GREN 125 with a grade of C or higher; or permission of the Instructor or Program Coordinator.*

# Course Descriptions

## **GREN 228 - Environmental Marketing 3:3:0**

Introduces the integration of environmental issues with the development of marketing strategies. The course focus is on environmentally driven innovation and the subsequent eco-marketing strategies, used by businesses, to redesign and rebrand products and services. *Prerequisite: ENGL 104 with a grade of C or higher. Co-requisite: ENVS 201; or permission of the Instructor.*

## **GREN 250 - Energy Planned Project Development 3:3:0**

Introduces energy-based project planning. The course covers state and local building codes, including zoning and permits, with an emphasis on compliance with the Pennsylvania Uniform Commercial Code and pertinent state laws. Maintaining public records is also discussed.

## **GREN 260 - Energy Auditing 3:3:1**

Emphasizes the analytical skills necessary to improve building performance. The course covers diagnostic tools, thermal, air, and vapor barriers and their integration with structural and mechanical/electrical systems. A course fee is required. *Prerequisite: CIS 105 with a grade of C or higher.*

## **GREN 265 - Green Procurement 3:3:0**

Covers the principles and procedures, associated with sustainable resource management and utilization, used in all phases of Green Building Design and Construction. Students study the concepts of supply chain management, team collaboration, and the integrated design process. Specific focus is on the concept of "triple baseline", which includes health and safety, LEED certification, and the cost-benefit analysis of environmental impact. Case studies involving both local and national projects are used. A course fee is required. *Prerequisite: CIS 105 and MATH 161 with a grade of C or higher.*

## **GREN 275 - Environmental Economics 3:3:0**

Studies the economics relevant to the environment and sustainable development. Students learn economic methods in order to analyze environmental issues as they relate to water, air, energy, climate change, and regulation policies. Specific focus on project development includes cost-benefit evaluation techniques. The financial metrics of energy usage and micro- and macro-growth models also serve as case studies. *Prerequisite: CIS 105 and MATH 161 with a grade of C or higher.*

## **Health**

## **HLTH 101 - Healthful Living 3:3:0**

A study of current knowledge concerning attitudes and practices which promote and maintain the present and future health of the individual and the community. This course emphasizes the prevention of disease and a positive health attitude. Nutrition, fitness, drugs, and sexuality are some of the topics discussed.

## **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. *Prerequisite: HVAC 103 or permission of the Program Coordinator.*

## **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. *Prerequisite: HVAC 103 with a grade of C or higher, or permission of the Program Coordinator.*

## **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. *Corequisite: HVAC 101 or ELOC 153, or permission of the Program Coordinator.*

## **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 Program Coordinator.*

## **HVAC 109 - Heating Systems 4:2:4**

The fundamentals of heating systems including installation, trouble-shooting, controls and servicing. A course fee is required. *Co-requisite: HVAC 101 or ELOC 153 or permission of the Program Coordinator.*

## **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.

# Course Descriptions

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-aided software calculations. A course fee is required. *Prerequisite: HVAC 101 or permission of the Program Coordinator.*

## **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 Program Coordinator.*

## **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 Program Coordinator.*

## **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 Program Coordinator.*

## 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. (Core B)(D)

## **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: Honors Studies Major or completion of all developmental reading and writing courses required as a result of the College Testing and Placement Program.* (Core B)(D)

## **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. (Core B)(D)

## **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. (Core B)

## **HIST 103H - Honors United States History I** 3:3:0

History of persons and events that have contributed to the American way of life. Topics include settlement of the new continent, the American Revolution, construction of a constitution and government, and the development of an economic system. Problems of reconciling differences among various groups are considered in relation to the 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: Honors Studies Major or completion of all developmental reading and writing courses required as a result of the College Testing and Placement Program.* (Core B)

## **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." (Core B)

## **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. (Core B)

# Course Descriptions

## **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**

Survey of the development of civilization in the Middle East, Greece, Rome, and Europe from ancient times through the Reformation. (Core B)

## **HIST 202 - Western Civilization II 3:3:0**

Survey of the growth of civilization in Western and Eastern Europe after the Reformation to the present. (Core B)

## **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 and 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. *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.*

### **HBR 291 - Cooperative Work Experience 3:0:15**

Faculty monitored on the job training with a Home Building and Remodeling employer for a minimum of 15 hours per week. Students learn and practice technical skills on-the-job. *Open to all Home Building and Remodeling students who have completed 24 or more credit hours in a Home Building and Remodeling program with an overall GPA of 2.0 or higher, or with permission of the Program Coordinator.*

# Course Descriptions

## Honors Studies

### **HONS 101H - Honors Foundation Seminar: Education as Critical Inquiry** 3:3:0

Uses education as the primary subject of critical inquiry to prepare students for their college careers and a lifetime of interdisciplinary learning. The course focuses on the building of student learning communities using interdisciplinary curriculum and project-oriented activities. Emphasis is placed on collaborative learning and skills related to effective research, writing, and presentation. Electronic portfolio building, as a program requirement, is emphasized. 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: Honors Studies Major or completion of all developmental reading and writing courses required as a result of the College Testing and Placement Program.*

### **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 Studies program experiences through the analysis and presentation of their program electronic portfolios. 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; Honors Studies Major.*

## Horticulture

### **HORT 101 - Introduction to Horticulture** 3:2:2

Covers the basic principles of plant science and its practical application. Topics include taxonomic classification, basic botany, soil science, cultivation of specific crops, plant propagation, common plant pests and safe use of pesticides, introduction to pests and diseases, and landscape planting and maintenance practices. A course fee is required.

### **HORT 102 - PA Pesticide Applications** 1:1:0

Covers the principles of controlling plant pests and diseases, types of pesticides, chemical labeling, application safety practices, and pesticide application law. Students are prepared to take the Pennsylvania Private Pesticide Applicator Certification exam.

### **HORT 110 - Greenhouse Production I** 3:2:2

Basic greenhouse production theory and techniques. Hands-on production of Poinsettia plants for the holiday season, techniques of pricing, and marketing are also covered. A course fee is required.

### **HORT 120 - Landscape Design I** 3:3:0

An overview of the landscape design process, design principles, and elements to create a professional landscape plan. The emphasis is on design concepts, reading blueprints, site analysis, landscape graphics, plant specifications, and scale. Students produce simple landscape designs.

### **HORT 130 - Horticulture Business Management** 3:3:0

Introduces the fundamentals of owning, operating, and managing a successful wholesale or retail plant business. Topics include writing a business plan, creating an image, purchasing versus growing plant stock, controlling inventory, pricing and profitability, managing employees, marketing and promotion, and providing good customer service.

### **HORT 140 - Landscape Construction** 2:1:2

Design and construction principles for installing hardscape features, including patios, decks, walls, and other site amenities. This is a hands-on class and students gain experience installing various types of building materials, reading blueprints, and operating equipment. A course fee is required.

### **HORT 150 - Landscape Maintenance** 2:1:2

Covers aspects of proper landscape maintenance in residential and commercial settings including a wide variety of maintenance skills such as plant culture, turf management, client relationships, task scheduling, and proper care and use of maintenance equipment.

### **HORT 161 - Woody Plants: Tree Identification** 3:3:0

Concentrates on the identification, cultural requirements, and landscape use of ornamental deciduous and coniferous trees. Emphasis is on trees useful in the northeastern U.S. landscape including small flowering trees. Classes include lecture and field study in the College's Arboretum.

### **HORT 163 - Woody Plants: Shrub Identification** 3:3:0

Concentrates on the identification and cultural requirements of ornamental deciduous, coniferous, and broad leaved evergreen shrubs. Emphasis is on shrubs that are most valuable in the Mid-Atlantic region landscape. Classes include lecture and field study in the College's Arboretum.

### **HORT 165 - Herbaceous Plants: Perennials, Grasses, and Vines** 3:3:0

Identifies culture and landscape uses of perennials, grasses, groundcovers, and vines. Emphasis is on Spring and Summer blooming perennials and their cultivars.

### **HORT 167 - Herbaceous Plants: Perennials, Annuals, and Tropical Plants** 3:3:0

Identifies culture and landscape uses of annuals, tropical plants and perennials with an emphasis on Summer and Fall blooming selections. Annuals include vegetative cultivars and those with landscape and commercial merit.

### **HORT 200 - Entomology: Plants, Insects, and Diseases** 3:3:0

Covers pest and pathogen identification with an emphasis on the taxonomy, morphology, physiology, and the metamorphosis of insect pests common to the Mid-Atlantic region. Focus and exploration is on how pests and pathogens injure plants, recognizing the symptoms, and in planning and implementing a

# Course Descriptions

control and prevention program, using Integrated Pest Management techniques. The class also focuses on the various aspects of biotic and abiotic plant diseases - identifying symptoms, recognizing causes, and developing prevention, management, and treatment protocols.

## **HORT 210 - Greenhouse Production: Bedding Plants 3:2:2**

Covers greenhouse structure, operations, and production techniques of most popular and valuable bedding plants in the Mid-Atlantic region. Crop production schedules, plant pricing, and marketing are also covered. Students produce floral crops for HACC's Arboretum and for sale. A course fee is required.

## **HORT 220 - Landscape Design II 3:3:0**

In-depth course using skills learned in Landscape Design I. The emphasis is on hardscape and architectural elements, design aesthetics, contracting and estimating, CAD design, specialty gardens, working with clients, and special considerations for commercial design sites. Students produce detailed landscape designs from the client interview to final presentation.

*Prerequisite: HORT 120, 161, and 167 with a grade of C or higher.*

## **HORT 291 - Horticulture Cooperative Work Experience 3:0:15**

Focuses on expanding horticulture knowledge and skills through a custom cooperative work experience based on student interests and career goals. This 225 hour work experience includes mandatory hands on training assisting HACC's Horticulturists. Students assist in installing and maintaining special plant collections, seasonal floral displays, containers, and children's gardens, etc. at the Wildwood Arboretum. Students may also engage in additional cooperative work experience at a preapproved site and/or complete a preapproved horticulture community project. *Prerequisite: HORT 101, and HORT 161 or 163, and HORT 165 or 176, and HORT 150 with a grade of C or higher.*

## **Hospitality and 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. *Prerequisite: Eligibility for enrollment into ENGL 101 and 003.*

### **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, 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 AA and*

*Certificate, as well as the Hospitality and Tourism Management AA and Certificate programs. A course fee is required.*

*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.

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## **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. *Prerequisite: CIS 105.*

## **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 AA and Certificate programs. Prerequisite: HTMT 101, HTMT 154, HTMT 212, and HTMT 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 AA and Certificate programs. Prerequisite: CIS 105, HTMT 225 and HTMT 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: ENGL 101 with a grade of C or higher.*

## **HUMS 108 - Drugs and Alcohol: Use and Abuse 3:3:0**

Introductory study of the use of alcohol and drugs historical and social perspective. Acquaints students with models of prevention and community treatment facilities. Particularly relevant for work 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 Services 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.*

# Course Descriptions

## **HUMS 122 - Skills and Methods in Human Services II 3:3:0**

Case management procedures from intake to termination, including 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 121 with a grade of C or higher; and GPA of 2.0 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. (D)*

## **HUMS 215 - Field Work Practicum 4:2:17**

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 on campus weekly 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. 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. A course fee is required. *Enrollment is restricted to students in the Human Services AA and Certificate programs, as well as in the Social Services AA Transfer degree program. Prerequisite: HUMS 120, 122, and 206 with a grade 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 Advanced Therapeutic 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, and 217 with a grade of C or higher.*

## **Humanities**

## **HUM 101 - Modern Culture and the Arts 3:3:0**

Broadens the student's perception of and appreciation for the humanities by exploring the contribution of the arts to the individual and to society. Emphasis is given to modern developments in such areas as the visual, performing, literary, and environmental 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. (Core A)(D)*

# Course Descriptions

## **HUM 101H - Honors Modern Culture and the Arts** 3:3:0

Broadens the students' perception of an appreciation for the humanities by exploring the contribution of the arts to the individual and to society. Emphasis is given to modern developments in such areas as the visual, performing, literary, and environmental 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: Honors Studies Major or completion of all developmental reading and writing courses required as a result of the College Testing and Placement program.* (Core A)(D)

## **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

Creates an awareness and appreciation of the built environment. This course examines architecture as both a cultural phenomenon and an artistic and technological achievement. Function, structural principles, elements of design, and a chronological survey of western architecture development are also covered. *Prerequisite: Eligibility for enrollment into ENGL 101 and completion of any reading courses required by the College Testing and Placement Program.* (Core 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.* (D)

## **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.* (Core A) (D)

## **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: Honors Studies Major or completion of all developmental reading and writing courses required as a result of the College Testing and Placement Program.* (Core A)(D)

## **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 enrollment into ENGL 101 through the College Testing and Placement Program.* (Core 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: Honors Studies Major or completion of all developmental reading and writing courses required as a result of the College Testing and Placement Program.* (Core 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.

# Course Descriptions

## **IMT 202 - Mechanical Technology II 3:3:2**

Knowledge and skills in industrial plumbing, pipefitting and servicing HVAC systems. Course covers safety, plumbing tools, basic pipefitting, repairs, valves, soldering and brazing, bending and flaring, fittings, PVC and CPVC, and Quest-type plumbing. HVAC systems operation, troubleshooting and basic service are also covered. A course fee is required.

## **IMT 204 - Power Distribution Systems 2:2:0**

Traces the path of power distribution in an industrial environment from the high voltage sub-station down to the 480-Volt motor control centers used in manufacturing. *Prerequisite: IMT 102 with a grade of C or higher or permission of Program Coordinator.*

## **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.*

## **Industrial Automation**

### **IA 201 - Motors and Controls I 4:3:2**

The theory and operation of AC and DC motors and controls. Topics include basic AC and DC motors, basic motor control devices, motor starters, and basic control circuits. Students wire control circuits for specific motors and applications. A course fee is required. *Prerequisite: ELOC 153 or IMT 102, or permission of the Program Coordinator.*

### **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, or permission of the Program Coordinator.*

### **IA 205 - Computer Numerical Control – CNC 3:2:3**

Application of computer control of manufacturing methods. Numerical control and computer numerical control machining processes are integrated with computer-aided drafting techniques. Importing exchange files from CAD into a CAM program to create tool paths. A course fee is required. *Prerequisite: MDES 207 and CAD 154.*

### **IA 208 - PLC's and Automation 2:1:3**

Understanding ladder logic and its use in programming industrial programmable logic controllers (PLC's). Topics include using discrete I/O, timers, counters, and sequencers to control automated systems for manufacturing applications. Primary instruction is 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 - Robotics I 3:2:3**

Introduces the history, categories, and capabilities of robots. Robot power, coordinate systems, control, interfacing, sensors, and safety are discussed. Hands-on labs emphasize robotic

programming, operation, and construction. A course fee is required. *Prerequisite: ELOC 153 or ELEC 101; and IA 201 or IA 208 with grades of C or higher or permission of the Instructor.*

### **IA 213 - Advanced Topics in PLC's 3:2:3**

An advanced Programmable Logic Controller (PLC) class. Topics include interfacing and scaling analog I/O, PLC control of motor control devices, and introduction to PID control. This course also includes advanced software programming instructions and techniques. Primary instruction and techniques. Primary instruction in on Allen Bradley PLC's using AB software. A course fee is required. *Prerequisite: IA 208 with a C or higher.*

### **IA 221 - Sensor Technology 3:2:2**

An advanced course in electrical controls for automation and artificial intelligence systems. Students learn the types, characteristics, installation, and application of a variety of industrial sensors, which include micro-switches, reed sensors, temperature sensors, inductive sensors, capacitive sensors, and photoelectric sensors. Laboratory activities include the wiring of control circuits using sensor technology. A course fee is required. *Prerequisite: IA 201 with a grade of C or higher. Co-requisite: IA 208 or permission of the Program Coordinator.*

## **Library**

### **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

# Course Descriptions

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 202 - Office Management** 3:3:0

Introduces students to workflow systems, such as duplicating processes, filing, data management, automation, and computerized office applications. Students also discuss the importance of interpersonal communications, office safety, employee relations, customer service, and motivating personnel. *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 206 - Labor Relations** 3:3:0

Covers the structure and operations of labor organizations to include collective bargaining, contract negotiations, and labor agreements. This course also explores the history of the Labor movement in America. Further topics include the handling of grievances, the role of government in labor relations, and the issues and problems affecting the labor force today. *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 into 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: Honors Studies Major or completion of all developmental reading and writing courses required as a result of the College Testing and Placement Program.*

## **MGMT 227 - Project Management** 3:3:1

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.*

## **MGMT 230 - Principles of Supply Chain Management** 3:3:0

Designed to acquaint students with modern supply chain management concepts. Some of the topics covered include purchasing and inventory management, supplier relationships, using strategic sourcing, demand forecast and replenishment, aggregate planning and process management integration. The impact upon supply chain management of other theories such as Total Quality Management, Just in Time, and Customer Relationship Management are also discussed. *Prerequisite: MGMT 201.*

## **MGMT 235 - Business Logistics Management** 3:3:0

Issues in management as they relate to business logistics and related fields. The course covers the different dimensions of logistics, demand management, customer service, procurement, global logistics, transportation systems, transportation management, logistics relationships and third-party logistics. *Prerequisite: MGMT 201.*

# Course Descriptions

## 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 204 - Sales Management** 3:3:0

Management of selling function, including forecasting, organization of the sales force, recruiting, selection, training, compensation, retention and territory management. *Prerequisite: MKTG 212.*

### **MKTG 205 - Visual Merchandising** 3:2:2

Covers the principles of display through application and experimentation. Students learn the fundamental techniques of presenting and selling merchandise and recognize the significance these have in attracting consumers. Emphasis is placed on branding a store image through the use of color, fixtures, and other display materials. Guest speakers, field trips, case studies, and display activities are incorporated into the course. Student must secure their own supplies.

### **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 Merchandising** 3:3:0

The study of the background and knowledge necessary to buy merchandise profitably with emphasis on the role of the buyer, profit, markup, markdowns, inventory methods, stock turn, planned sales, planned stocks, planned purchases, open-to-buy, fashion merchandise, negotiations with vendors and use of the computer in merchandising. Field trips are a part of this course and may require additional payment by the student to defray costs.

### **MKTG 217 - Retail Management** 3:3:0

The concepts and practices in successful retail management. Emphasis on basic structure and environment, store management, careers, store location and layout, types of organizational structure, personnel, merchandise management, pricing, advertising and display, salesmanship, customer services, credit and collection, accounting and expense control, and community relations. Field trips are part of this course and may require additional payment by the student to defray costs.

### **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 internet 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: Completion of ENGL 002 or 007 with a grade of C or higher or placement through the College Testing and Placement Program into ENGL 003 or higher.*

### **MKTG 245 - Principles of International Marketing** 3:3:0

The implications of the expanding international market for U.S. products and the increasingly competitive international business environment. Students study the global marketplace and skills needed to make marketing decisions in a global context with special emphasis on political and cultural influences that distinguish U.S. and foreign markets. *Prerequisite: MKTG 201 or permission of Program Coordinator.*

## Mathematics

### **MATH 010 - Pre-Algebra** 4:4:0

Designed to review the basic operations of arithmetic and introduce algebraic representation and applications. A course fee is required. *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.*

### **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. 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. Co-requisite: ENGL 001.*

### **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

# Course Descriptions

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 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 010 with a grade of C or higher.* (Core C)

## **MATH 103 - College Algebra 3:3:0**

Fundamental algebraic operations, exponents and radicals, systems of equations, higher degree equations, logarithms, matrices, inequalities. *Prerequisite: Placement through the College Testing and Placement Program or completion of MATH 045 or 051 with a grade of C or higher.* (Core C)

## **MATH 104 – Trigonometry 3:3:0**

Trigonometric functions, relationships, and graphs; identities and trigonometric equations; composite, multiple, and half-angle formulas; complex numbers; DeMoivre's theorem. *Prerequisite: Placement through the College Testing and Placement Program or completion of MATH 045 or 051 with a grade of C or higher. MATH 103 with a grade of C or higher is strongly recommended.* (Core C)

## **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 are considered. *Prerequisite: MATH 103 with a grade of C or higher.* (Core C)

## **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 010 with a grade of C or higher or placement through the College Testing and Placement Program.* (Core C)

## **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 the conceptual treatment of Number Theory, modern Algebra, Geometry, fundamentals of Logic and Sets, as well as other topics. 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 045 or*

*MATH 051 with a grade of C or higher; Honors Studies Major or completion of all developmental reading and writing courses required as a result of the College Testing and Placement Program.* (Core C)

## **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 045 or 051 with a grade of C or higher.*

## **MATH 114 - Principles of Mathematics for Elementary Teachers II 3:3:0**

Topics include geometry with computer applications, measurement of geometric figures, the metric system, and an introduction to probability. *Prerequisite: Placement through the College Testing and Placement Program or completion of MATH 045 or 051 with a grade of C or higher.*

## **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.* (Core C)

## **MATH 121 - Calculus I 4:5:0**

Plane analytic geometry; functions, limits and continuity; differentiation and integration of algebraic and trigonometric functions with applications. *Prerequisite: MATH 119 or equivalent with a grade of C or higher.* (Core C)

## **MATH 122 - Calculus II 4:5:0**

A continuation of MATH 121. Transcendental functions; further techniques of integration with applications; polar coordinates; infinite series. *Prerequisite: MATH 121 with a grade of C or higher.* (Core C)

## **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 141 - Mathematics Seminar 2:2:0**

The role of the mathematician in an economic society; areas of specialization and functions of the mathematician. Ethics, career suitability, and problems of transfer are discussed. Guest speakers and off-campus events augment the course. *Prerequisite: MATH 045 or 051 and ENGL 051 or 057 with a grade of C or higher.*

# Course Descriptions

## **MATH 161 - Technical Mathematics for General Technology** 3:3:0

Basic arithmetic, algebra, trigonometry and other topics emphasizing application to specific technical areas are covered. Topics will be selected according to the needs of a particular diploma program. *Prerequisite: MATH 007 or MATH 010 with a grade of C or higher.*

## **MATH 162 - Technical Math for Electrical Technology** 3:3:0

Course covers the application of fundamental mathematical, algebraic, and trigonometric concepts related to electrical circuits. Training in the use of mathematics for solving problems in electrical technology is provided. *Prerequisite: MATH 007, or MATH 010 with a C or higher, or Placement through the College Testing and Placement Program.*

## **MATH 172 - Applied Mathematics for Automotive Technicians** 3:3:0

Review of the basic operations of arithmetic and beginning algebra applied to the automotive trade. Other topics include calculation of markup and markdown, insurance premiums, payroll deductions and taxes. *Prerequisite: ENGL 001 with a grade of C or higher; Placement into MATH 010 through the College Testing and Placement Program or completion of MATH 005 with a grade of C or higher.*

## **MATH 202 - Introduction to Statistics** 4:4:0

Designed for students enrolled in technical, business and liberal arts curricula. Topics include describing and summarizing data both graphically and numerically, probability, various distributions, parametric estimation and tests of significance, and exploration of bivariate data. *Prerequisite: Placement through the College Testing and Placement Program or completion of MATH 045 or 051, ENGL 057 or a combination of ENGL 003, or 007 and 051 with grades of C or higher. (Core C)*

## **MATH 203 - Mathematical Statistics** 4:3:3

Descriptive statistics, probability theory, discrete and continuous probability distributions, and statistical inferences for means and proportions. *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 the 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

A continuation of MATH 122. Vectors and vector-valued functions; partial differentiation; multiple integrals; space geometry; vector calculus. *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. *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. *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.

### **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. *Prerequisite: MDRF 101 with a grade of C or higher, or permission of the Program Coordinator.*

# Course Descriptions

## 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.

*Prerequisite: BIOL 111 or 121 with a grade of C or higher; or permission of the Instructor. Co-requisite: BIOL 111.*

### 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 AS and Certificate programs.*

### 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. *Prerequisite: AH 140 and BIOL 111 or 121 with a grade 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 AS and Certificate programs. Prerequisite: BIOL 111 or 121 with a grade of C or higher; Co-requisite: BIOL 111; or permission of the Instructor.*

### 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 AS and Certificate programs. Prerequisite: MATH 020, BIOL 111 or BIOL 121, and AH 150 with a grade of C or higher or AH 150 concurrently.*

### 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. *Prerequisite: AH 209 with a grade of C or higher or concurrently enrolled in AH 209.*

### 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. *Prerequisite: AH 140, 141, 150, and BIOL 111 or BIOL 121 and 122 with a grade 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 AS and Certificate programs. Prerequisite: BIOL 105 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 AS and Certificate programs. Prerequisite: CIS 105 with a grade 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

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 successfully pass a mock certification skills exam. A course fee is required. *Prerequisite: The completion of all program specific and science courses with grades of C or higher; successful completion of a comprehensive skills examination.*

## Medical Laboratory Technology

### MLT 100 - Orientation to Medical Laboratory Technology 2:2:1

Encompasses the role of the Medical Laboratory Technician within the healthcare 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 the laboratory science. Students review the skills needed to draw blood and prepare blood specimens for testing. A course fee is required. *Prerequisite: ENGL 102 and COMM 101 with a grade of C or higher. PBT 100 must be successfully complete, with a C grade or higher, within 24 months of enrolling into MLT 100. Non-majors need permission of the Program Director.*

# Course Descriptions

## **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. *Enrollment is restricted to students in the Medical Laboratory Technician AA program. Non-majors need permission of the Program Director. A course fee is required. Prerequisite: BIOL 111 and CHEM 101 with a grade of C or higher.*

## **MLT 122 – Immunology 2:2:1**

Studies serum immunity and reactions to antigens and antibodies as they apply to blood. In addition, this course discusses serologic procedures. *Enrollment is restricted to students in the Medical Laboratory Technician AA program. Non-majors need permission of the Program Director. A course fee is required. Prerequisite: BIOL 111 and CHEM 101 with a grade of C or higher.*

## **MLT 124 – Immunohematology 3:2:3**

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. *Enrollment is restricted to students in the Medical Laboratory Technician AA program. Non-majors need permission of the Program Director. A course fee is required. Prerequisite: MLT 100, MLT 120, MLT 122, and MLT 220 with a grade of C or higher.*

## **MLT 220 - Clinical Microbiology 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 AA program. Non-majors need permission of the Program Director. Prerequisite: BIOL 221 with a grade 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 AA program. Non-majors need permission of the Program Director. Prerequisite: MLT 100, MLT 120, MLT 122, and MLT 220 with a grade of C or higher.*

## **MLT 224 – Urinalysis 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 AA program. Non-majors need permission of the Program Director. Prerequisite: MLT 100, MLT 120, MLT 122, and MLT 220 with a grade 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 AA program. Prerequisite: MLT 124, MLT 222, and MLT 224 with a grade 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 AA program. Prerequisite: MLT 226 and MLT 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 AA program. Non-majors need permission of the Program Director. Prerequisite: MLT 124, MLT 222, and MLT 224 with a grade 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 AA 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 AA 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 AA program. Non-majors need permission of the Program Director. Prerequisite: MLT 226 and MLT 230 with a grade of C or higher.*

## **Metalwork Technology**

### **MWT 102 - Blueprint Reading: Metalworking 2:1:3**

Students develop the basic skills required for interpreting industrial prints.

### **MWT 111 - Introduction to Metalworking 3:2:3**

The layout equipment, bench work equipment, measurement procedures, safety practices, tools, materials, and skills of the machine trade. Students learn to (1) use blueprints and layout tools; (2) make parts to specification using arbor presses, hand tools, files, reamers, taps/dies, finishing tools, and assembly tools; (3) measure devices accurately; and (4) identify and use proper materials. Students are prepared to take the National Institute of Metalworking Skills (NIMS) Level I certification in layout and benchwork.

# Course Descriptions

## **MWT 112 - Basic Power Tools** 1:0.5:1.5

Basic power tools including drill presses, power saws, pedestal grinders, and hand power tools. Students learn to machine parts to specification using these tools. Students are prepared to take the National Institute of Metalworking Skills (NIMS) Level I certification in drilling.

## **MWT 212 - Turning Technology** 2:1:3

Basic and advanced skills in the use of the metal lathe. Students learn a variety of metal lathe operations, with stock held in chucks and between centers to make parts to specification. Students are prepared to take the National Institute of Metalworking Skills (NIMS) Level I certification in turning. *Prerequisite: MWT 111 or permission of the Program Coordinator.*

## **MWT 213 - Milling Technology** 3:2:3

The milling machine. Students learn basic and advanced milling operations to make parts to specification. Students are prepared to take the National Institute of Metalworking Skills (NIMS) Level I certification in milling. *Prerequisite: MWT 111 and MWT 112 or permission of the Program Coordinator.*

## **MWT 214 – Metrology** 2:1:3

The use of precision instruments for measurement and inspection of manufactured parts. The course includes the use of comparators, micrometers, surface plates and accessories, microscopes, hardness testing instruments, and other related equipment. Students gather and analyze quality assurance data and inspect parts using non-destructive testing techniques (NDT). Students are prepared to take the National Institute of Metalworking Skills (NIMS) Level I certification in measurement, materials and safety. *Prerequisite: MATH 174 or permission of the Program Coordinator.*

## **MWT 215 - Grinding Technology** 3:2:3

Precision grinding operations. Students use a variety of surface and form grinders and techniques to make parts to specification. Students are prepared to take the National Institute of Metalworking Skills (NIMS) Level I certification in grinding. *Prerequisite: MWT 111 and MWT 112 or permission of the Program Coordinator.*

## **MWT 216 - Specialized Industrial Processes** 3:2:3

Advanced manufacturing technologies, including electrical discharge machining (EDM), automatic screw machining, and precision assembly. A course fee is required. *Prerequisite: MWT 212, 213, and 215 or permission of the Program Coordinator.*

## **MWT 217 - Advanced CNC Programming** 2:1:3

A continuation of IA 204 including XYZ three-axis motion and the use of shop-floor programming systems. *Prerequisite: IA 204 or permission of the Program Coordinator.*

## **MWT 218 - Manufacturing Seminar** 1:1:0

Introduction to the manufacturing environment. One or more manufacturing industries are targeted for study and analysis. During visits to local companies, students investigate and assess the key elements of quality assurance, customer service, productivity, and cost control.

## **MWT 291A - Cooperative Work Experience** 3:0:300

Students perform machining tasks in a professional environment and are paid as part-time employees. Basic hand tools and measuring instruments must be purchased by the student as is customary in the trade.

## **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. (Core 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: Honors Studies Major or completion of all developmental reading and writing courses required as a result of the College Testing and Placement Program.* (Core 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. (Core A)(D)

### **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.

# Course Descriptions

- MUS 111 - Choir I** **1:0:3**  
The study, rehearsal, and performance of standard works of choral literature. Open to any student without audition.
- MUS 112 - Choir II** **1:0:3**  
The study, rehearsal, and performance of standard works of choral literature. Open to any student without audition.
- 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.*
- 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 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.
- MUS 212 - Choir IV** **1:0:3**  
The study, rehearsal, and performance of standard works of choral literature. Open to any student without audition.
- 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.*

# Course Descriptions

## **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 one 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 215PI 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 the Internet as a marketing tool for promoting recordings and performances.

### **MUSB 214 - Music Business Studies 3:3:0**

Introduces the music and entertainment industry with a focus on career choices. Topics include songwriting and publishing, copyright registration, royalty income, performance societies and music licensing. In addition, the roles of unions, music associations, guilds and talent agencies are explored. (Students may choose a 20-hour internship with local music professionals or to prepare a semester project.) *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**

The study of mass media, the music industry, and its influence on the development of American Popular Music markets. This course is devoted to the evaluation of the print publishing business, radio

broadcasting, recording industry, and music technology development. The impact television, film, and the Internet have on the distribution of diverse and numerous American Popular music styles are also discussed. *Prerequisite: Eligibility for enrollment into ENGL 051 as required by the College Testing and Placement Program.*

### **MUSB 225 - Entertainment and Music Promotion 3:3:0**

Encompasses the process of music promotion, music product distribution, and commerce. How one promotes a performance ensemble and supports artistic development is explored. Course covers how the interrelationship of the professional musician and music, as a product, is applied to the recording industry, music distribution, management, and product sales, as well as in advertisements, television, film and on the radio. Entertainment entrepreneurship is also explored. An optional "service learning" opportunity with area music businesses is offered. *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 and explains the computer hardware and software (including MIDI) used by producers to create new music and distribute music-related products and services. Topics include recording, editing, arranging, mixing and printing of music.

### **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**

An overview of the music production industry. Students experiment with the current technology of the audio trades and research the complexity involved in the recording studio and at live performances.

### **MUSB 229 - Commercial Songwriting and the Music Industry 3:3:0**

Encompasses the business of songwriting. This integrative course combines the foundations of songwriting theory and design to reflect current industry standards for publishing, recording, jingle advertisement, television, theatre and film.

### **MUSB 291 - Music Industry Internship 3:0:15**

Faculty monitored employment of at least 15-hours per week in an approved music industry establishment where students apply the knowledge and skills acquired in the music industry curriculum. Written documentation of the internship activities and other performance-evaluation measurements are used to determine the grade.

## **Nanofabrication**

### **NFAB 211 - Material, Safety, and Equipment Overview for Nanofabrication 3:2:3**

This course provides an overview of the materials, safety and

# Course Descriptions

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 are 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 include corrosive, flammable, and toxic materials, biological materials, carcinogenic materials, DI water, solvents, cleaners, photo resists, developers, metals, acids, and bases. The course also concentrates on safe equipment maintenance and operation. Students are given an overview of basic nanofabrication materials, equipment and equipment operation. This technical overview and operational introduction to processing equipment and characterization tools 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. *Prerequisite: Restricted, please 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. *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 includes 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. *Prerequisite: Restricted, please 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 are 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 are investigated. The third section discusses 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. *Prerequisite: Restricted, please see Instructor.*

## **NFAB 215 - Materials Modification in Nanofabrication 3:2:3**

This course covers in detail the processing techniques and specialty hardware used in modifying properties in nanofabrication. Material modification steps to be covered 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 are undertaken. *Prerequisite: Restricted, please 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 includes hands-on use of tools such as the Atomic Force Microscope (AFM), Scanning Electron Microscope (SEM), Fluorescence microscopes, and fourier transform infrared spectroscopy. *Prerequisite: Restricted, please 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, BIOL 111, and ENGL 101.*

# Course Descriptions

## **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 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 AA program. Prerequisite: BIOL 121 with a grade of C or higher. Co-requisite: NURS 142, NURS 143, BIOL 122, ENGL 101, and PSYC 101; 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 AA program. Prerequisite: BIOL 121, NURS 140, and NURS 142 with grades of C or higher. Co-requisite: NURS 143, NURS 144, BIOL 122, ENGL 101, and PSYC 101; or permission of the Nursing Faculty.*

## **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

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care systems, health policy, health/wellness/illness, illness, thermoregulation, tissue integrity, and violence as they all relate to the health and physical assessment clients. *Enrollment is restricted to students in the Nursing AA program. Prerequisite: BIOL 121 with a grade of C or higher. Co-requisite: NURS 140, NURS 143, BIOL 122, ENGL 101, and PSYC 101; or permission of the Nursing Faculty.*

## **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. *Enrollment is restricted to students in the Nursing AA program. Prerequisite: BIOL 121 with a grade of C or higher. Co-requisite: NURS 140, NURS 142, BIOL 122, ENGL 101, and PSYC 101; or permission of the Nursing Faculty.*

## **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. *Enrollment is restricted to students in the Nursing AA program. Prerequisite: BIOL 121, NURS 140, and NURS 142 with grades of C or higher. Co-requisite: NURS 141, NURS 143, BIOL 122, ENGL 101, and PSYC 101; or permission of the Nursing Faculty.*

## **NURS 145 - Transitional Concepts for Nursing Practice 4:4:0**

Introduces students to the health and physical assessment of clients. This course focuses on the recognition of findings that indicate an abnormal condition, as well as to provide basic concepts and skills related to Informatics in nursing practice. This course addresses 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 relate to health and physical assessment. In addition, this course presents concepts related to basic computer competency, information literacy, and evidence-based practice as aids to use in the decision making process and provision of research-based nursing care. The necessity of providing a "culture of safety," related to the use of Informatics in nursing practice, is stressed. This course is required by Licensed Practical Nurses (LPNs) seeking Advance Standing admission into the Nursing AA program. A course fee is required. *Enrollment is restricted to students in the Nursing AA program. Students must meet the criteria outlined for acceptance into the*

*Advanced Standing portion of the Nursing AA program and/or permission of the Nursing Faculty.*

## **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 AA program. Prerequisite: NURS 141, NURS 143, NURS 144, BIOL 122, ENGL 101, and PSYC 101 with grades of C or higher. Co-requisite: BIOL 221, SOCI 201, and PSYC 209; or permission of the Nursing Faculty.*

## **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 AA program. Prerequisite: NURS 150, BIOL 122, ENGL 101, and PSYC 101 with grades of C or higher. Co-requisite: BIOL 221, SOCI 201, and PSYC 209; or permission of the Nursing Faculty.*

## **NURS 220 - Pharmacology for Nurses 3:3:0**

An introduction to pharmacology and safe administration of drugs. Emphasis is placed on the study of groups of drugs, their actions, and their side effects with special focus on nursing implications and pharmacokinetics. *Prerequisite: NURS 104 or NURS 104A and NURS 104B with a grade of C or higher; Permission of the Nursing faculty; Nursing licensure - PN or RN.*

## **NURS 225 - Advanced Dosage Calculations 1:1:0**

Designed for students enrolled in NURS 104, or who are entering their second year of the Nursing program. The course builds upon concepts discussed in NURS 125 with strong emphasis on the critical thinking skills required to prepare and administer intravenous medications and advanced pediatric dosages. *Prerequisite: Permission of the Nursing Program Faculty.*

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## **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 AA program. Prerequisite: NURS 151, BIOL 221, SOCI 201, and PSYC 209 with grades of C or higher. Co-requisite: NURS 242, NURS 243, NURS 244, ENGL 102, COMM 101; or permission of the Nursing Faculty.*

## **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 AA program. Prerequisite: NURS 240, BIOL 221, SOCI 201, and PSYC 209 with grades of C or higher. Co-requisite: NURS 242, NURS 243, NURS 244, ENGL 102, and COMM 101; or permission of the Nursing Faculty.*

## **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 AA program. Prerequisite: NURS 151, BIOL 221, SOCI 201, and PSYC 209*

*with grades of C or higher. Co-requisite: NURS 243 and NURS 244; or permission of the Nursing Faculty.*

## **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 AA program. Prerequisite: NURS 151, BIOL 221, SOCI 201, and PSYC 209 with grades of C or higher. Co-requisite: NURS 242 and NURS 244; or permission of the Nursing Faculty.*

## **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 AA program. Prerequisite: NURS 151, BIOL 221, SOCI 201, and PSYC 209 with grades of C or higher. Co-requisite: NURS 242 and NURS 243; or permission of the Nursing Faculty.*

## **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

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required. *Enrollment is restricted to students in the Nursing AA program. Prerequisites: NURS 241, ENGL 102, and COMM 101 with grades of C or higher. Co-requisite: NURS 242, NURS 243, and NURS 244; or permission of the Nursing Faculty.*

## **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 AA program. Prerequisite: NURS 250 with a grade of C or higher. Co-requisite: NURS 242, NURS 243, and NURS 244; or permission of the Nursing Faculty.*

## **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. Topics covered include an outline of the organization and jurisdiction of federal and state courts; introduction to legal terminology; discussion of the role of the paralegal and the responsibilities of lawyer and paralegal; introduction to legal ethics as they apply to both lawyer and paralegal; introduction to legal research; survey of the general law areas, including contracts, torts, criminal law, property law, family law, business organizations, and estate law. *Pre or Co-requisite: ENGL 101.*

### **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 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. *Prerequisite: 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. *Prerequisite: PLGL 101 with a grade of C or higher.*

### **PLGL 205 - Business Organizations 3:3:0**

The study of the legal organization of business entities and the role of the paralegal in the formation of various business organizations. This includes a survey of the fundamental principles of law applicable to each type of business organization and the preparation of the documents necessary to the organization and operation of each. *Prerequisite: PLGL 101 with a grade of C or higher.*

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## **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. *Prerequisite: 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. *Prerequisite: PLGL 101 with a grade of C or higher.*

## **PLGL 209 - Real Estate Law for Paralegals 3:3:0**

Overview of the law relating to the transfer of residential real property. A survey of multiple forms of ownership, agreements of sale, title searching procedures, and mortgage documents. Students learn to draft deeds and prepare settlement sheets. *Prerequisite: PLGL 101 with a grade of C or higher.*

## **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. *Prerequisite: 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 into ENGL 101. (Core 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: Honors Studies Major or completion of all developmental reading and writing courses required as a result of the College Testing and Placement Program. (Core 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. (Core 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. (Core A)(D)

## **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. (Core 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. *Prerequisite: Honors Studies Major or completion of all developmental reading and writing courses required as a result of*

# Course Descriptions

the College Testing and Placement program. (Core A)

## 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, or 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: Phlebotomy Technician Diploma; Medical Assisting AS and Certificate; Practical Nursing Certificate; Paramedic/ EMT AA and Certificate; Cardiovascular Technology AS (Invasive/Sonography); Medical Laboratory Technician AA and Certificate; Nursing AA; 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 BIOL 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.

### **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. (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. (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. (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.* (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. *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. (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. (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

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recognizing potentially dangerous situations and preventing and de-escalating threatening situations. (W)

## **PE 141 - CardioKickboxing 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. (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. (W)

## **PE 148 - Ballet I 1:1:1**

This course defines and executes the technical steps of classical ballet. Grade I level includes exercise au milieu, grand adage, allegro, port de bras. Dancewear or similar attire is strongly recommended.

## **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.

## **PE 160 - Introduction to Latin Dance 1:1:1**

Involves movement based on Latin dances. A special focus is on the strengthening and stretching of muscles of the core for improved posture, balance, and flexibility. The course includes an introduction to the basic Latin dances: Rhumba, Cha-Cha, Merengue, Mambo/Salsa, and Samba.

## **PE 162 – Canoeing 1:1:1**

Skills and strategies of flat-water canoeing. Emphasis is on safety and skill development in solo and tandem paddling. Approved for American National Red Cross Basic Canoeing certification.

## **PE 163 - Introduction to Fly Fishing 1:1:1**

Designed to provide students with the basic skills needed for a successful fly fishing experience including, but not limited to: fly casting, basic knot tying, equipment, aquatic ecology and entomology, stream hydrology, and proper fishing safety and etiquette. A special emphasis is placed on how the sport of fly fishing contributes to environmental stewardship, community involvement, and the benefits of life-long physical activity and wellness.

## **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. (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. (W)

## **PE 174 - Introduction to Backpacking 1:1:1**

Designed to give students an introduction to the sport of backpacking. The objective of the course is to provide students with the information to determine the differences, advantages, and disadvantages of the equipment necessary for backpacking. In addition to covering such topics as boots, packs, sleeping bags, and tents, the course presents students with the concept of low-impact camping and mental and physical preparation for an outdoor adventure. Class meets four days in the classroom. The fifth day consists of a short day-hike lasting approximately three hours. An overnight backpacking trip takes place over a Saturday and Sunday.

## **PE 177 - Indoor and Outdoor Rock Climbing 1:1:1**

Designed for first-time and intermediate-level rock climbers looking to build techniques, strength, and endurance in both indoor and outdoor climbing. This physically rigorous course emphasizes stretching, balance, movement and training to allow students to progress to more difficult moves associated with more complex climbs. The technical emphasis of the course is limited to the top-rope belay system, tie-in, and belay techniques. This course does not cover anchor systems and advanced rope work. The culminating project involves an outdoor top-rope-climbing day-trip. A course fee is required.

## **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. (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. (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. (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

# Course Descriptions

on health benefits obtained through regular practice. (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. (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. (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. (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. (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 010 with a grade of C or higher; or demonstrated equivalent competency in mathematics.* (Core C)

### **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. (Core C)

## **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, special relativity, models of the atom, and electricity and magnetism. A course fee is required. *Prerequisite: MATH 051 or MATH 045 with a grade of C or higher.* (Core C)

### **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, MATH 119, or MATH 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. *Enrollment is restricted to students in the Radiology Technology AS Program. Prerequisite: PHYS 151 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.* (Core C)

### **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.* (Core C)

### **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.* (Core C)

### **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.*

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## 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.*

## 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. (Core B)*

### 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.

### 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. (Core B)*

## 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. (D)*

## 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. (Core B)*

## 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 bio-psychological, 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. (Core B)(D)*

## 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. *Prerequisite: PSYC 101 with a grade of C or higher, and eligibility for enrollment into 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. *Prerequisite: PSYC 241 with a grade of C or higher.*

## Radiologic Technology

## RADT 100 - Introduction to Radiographic Procedures 3:2:3

Didactic instruction and laboratory demonstration and practice of the fundamentals of basic radiographic imaging and procedures.

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*Enrollment is restricted to students accepted into the clinical component of the Radiologic Technology AS program. A course fee is required. Prerequisite: RADT 102, BIOL 121, MATH 103, and ENGL 101 with a grades of C or higher.*

## **RADT 101 - Imaging Equipment 3:2:2**

Provides a knowledge-base of stationary and mobile radiographic, fluoroscopic and tomographic equipment. Quality assurance as it relates to radiographic equipment is also included. A course fee is required. *Enrollment is restricted to students in the Radiologic Technology AS program. Prerequisite: RADT 102, RADT 108, and MATH 103 with grades of C or higher.*

## **RADT 102 - Introduction to Radiologic Technology 4:3:5.5**

Introduces 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 60 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, MATH 103, and BIOL 121.*

## **RADT 103 - Imaging and Processing 3:3:0.33**

Provides students with knowledge of factors that govern and influence the production and recording of radiologic images. The emphasis is placed on film and electronic imaging with related accessories. Class demonstrations/labs are used to demonstrate application of theory. A course fee is required. *Enrollment is restricted to students in the Radiologic Technology AS program. Co-requisite: PHYS 151, RADT 101 and 105.*

## **RADT 104 - Introduction Radiologic Technology for Radiology Informatics 4:3:6**

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 64 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**

Provides the student with an overview of the principles of radiation protection and the interaction of radiation with living systems. Laws and regulations governing radiation health and safety are discussed. *Enrollment is restricted to students in the Radiologic Technology AS program. Co-requisite: PHYS 151, RADT 101 and 103.*

## **RADT 106 - Radiologic Technology Clinical Introduction 3:0:24**

Applies the theory learned in RADT 100 in the clinical setting. This course requires students to spend 360 hours of clinical time at an approved healthcare facility. A course fee is required. *Enrollment is restricted to students accepted into the clinical component of the Radiologic Technology AS Program. Prerequisite: RADT 102, CIS 105, MATH 103, ENGL 101, and BIOL 121 with grades of C or higher.*

## **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. Emphasis is placed on the demonstration and practice of fluoroscopic and intermediate radiographic procedures. A course fee is required. *Enrollment is restricted to students accepted into the clinical component of the Radiologic Technology AS Program. Prerequisite: RADT 100 and 106 with grades of C or higher.*

## **RADT 108 - Radiation Characteristics and Production 3:3:0**

Reviews the content of atomic structure and terminology. This course establishes a knowledge-base of the nature and characteristics of radiation and X-ray production, as well as addresses the fundamentals of photon interactions with matter. *Enrollment is restricted to students in the Radiologic Technology AS program. Prerequisite: PHYS 151 and MATH 103 with grades of C or higher.*

## **RADT 109 - Radiologic Technology Clinical I 2:0:19**

Theory learned in RADT 107 applied in the clinical setting. The student spends 24 hours a week of clinical time at a healthcare facility. A course fee is required. *Enrollment is restricted to students accepted into the clinical component of the Radiologic Technology AS program. Prerequisite: RADT 100, 101, 103, 105, and 106 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: RADT 104 with a grade of C or higher; Eligibility for enrollment into MATH 103 as required by the College Placement and Testing Program.*

## **RADT 201 - Radiographic Procedures II 3:2:3**

Builds upon knowledge and skills obtained in RADT 107. This course is designed with both a didactic and laboratory component. Emphasis is placed on the demonstration and practice of advanced and special radiographic procedures. A course fee is required. *Enrollment is restricted to students accepted into the clinical component of the Radiologic Technology AS program. Prerequisite: RADT 107 and RADT 109 with grades of C or higher.*

## **RADT 203 - Radiologic Technology Clinical II 3:0:24**

Theory learned in RADT 201 applied in the clinical setting. The student spends 24 hours a week of clinical time at a healthcare facility. A course fee is required. *Enrollment is restricted to students accepted into the clinical component of the Radiologic Technology AS program. Prerequisite: RADT 107 and 109 with a grade of C or higher. Co-requisite: RADT 201 and 205.*

## **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. *Enrollment is restricted to students in the Radiologic Technology AS program.*

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## **RADT 207 - Radiologic Technology Clinical III 3:0:24**

Clinical experience gained under the direct supervision of a college and/or agency clinical instructor for a total of 360 hours. Clinical experience includes observation, patient care, radiographic procedures and simulation. A course fee is required.

*Enrollment is restricted to students in the Radiologic Technology AS program. Prerequisite: RADT 203 with a grade of C or higher. Co-requisite: RADT 209.*

## **RADT 209 - Image Analysis 2:1:3**

Provides a basis for analyzing radiographic images. Included is the importance of minimum imaging standards, discussion of a problem-solving technique for image evaluation, and the factors that can affect image quality. Actual images are included for analysis. A course fee is required. *Enrollment is restricted to students in the Radiologic Technology AS program. Prerequisite: RADT 201, 203, and 205 with grades 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 3:0:26**

Clinical experience gained under the direct supervision of a college and/or agency clinical instructor for a total of 384 hours.

The clinical experience includes observation, patient care, radiographic procedures, and simulation. A course fee is required.

*Enrollment is restricted to students in the Radiologic Technology AS program. Prerequisite: RADT 207 and 209 with grades of C or higher. Co-requisite: RADT 210.*

## **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. This course is restricted to ARRT or NMTCB credentialed technologists, or eligible graduates, in radiography or nuclear medicine. A course fee is required. *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 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 AS 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 AS 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)

# Course Descriptions

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 AS 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 AS degree. *Signature of the Radiologic Technology Program Director is required.*

## **Radiology Informatics**

### **RADI 100 - Digital Imaging and Communications in Medicine (DICOM) and Health Level 7 (HL7) I** 2:1.5:1.5

Introduces the student to the fundamental concepts and theory of Digital Imaging and Communications in Medicine (DICOM) and Health Level 7 (HL7) as it relates to the picture archiving and communication system (PACS) environment. A course fee is required.

### **RADI 101 - Digital Imaging and Communications in Medicine (DICOM) and Health Level 7 (HL7) II** 3:2.5:1.5

Builds upon the concepts of Digital Imaging and Communications in Medicine (DICOM) and Health Level 7 (HL7) covered in RADI 100 as it further incorporates the functional uses of these systems into other healthcare IT systems. In addition, students are introduced to concepts related to Integrating the Healthcare Enterprise (IHE). A course fee is required. *Prerequisite: RADI 100 with a grade of C or higher.*

### **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 and 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 (HER) 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.*

# Course Descriptions

## **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 AS program. Prerequisite: RADI 103 and RADT 110 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 AS 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 or Co-requisite: RE 101 with a grade of C or higher.*

### **RE 108 - Appraisal of Residential Property 3:3:0**

Covers the theory and principles of appraising industrial, commercial, and residential real estate. This course examines various approaches to appraising, such as cost, income, and replacement. Careful analysis is given to the interrelationships of these approaches.

### **RE 205 - Residential Real Estate Construction 2:2:0**

Traces the construction process of a house. Topics include construction terminology, laws and contracts, subdivision development, design, cost estimation, site preparation, and building components including mechanical systems.

## **Respiratory Care**

### **RESP 100 - Introduction to Respiratory Care 2:2:0**

Introduces respiratory care as an allied health specialty with emphasis on role delineation, history, and the organization of the profession. This course emphasizes the metric system and basic science concepts including gas physics. Cleaning and the sterilization of equipment and computer technology in respiratory care are also covered. *Prerequisite: Eligibility for enrollment into MATH 051. This course must be completed within 24 months of starting the respiratory therapy clinical component.*

### **RESP 120 - Cardiopulmonary Anatomy and Physiology 3:3:0**

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. *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. Co-requisite: ENGL 102 and BIOL 122, or the permission of the Program Director. RESP 100 must be successfully completed within 12 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. Non-majors need permission of the Program Director. Prerequisite: RESP 120, RESP 190, RESP 200 ENGL 102, and BIOL 122 with grades of C or higher. Majors need the American Heart Association Healthcare Provider CPR Certification.*

### **RESP 140 - Oxygen Administration 5:4:3**

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, 190 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, 190, and 200 with a grade of C or higher.*

### **RESP 160 - Patient Assessment 2:2:0**

Covers patient history, chest assessment, principles of chest roentgenology and interpretation, and ECG interpretation.

# Course Descriptions

*Enrollment is restricted to students in the Respiratory Therapist AS program. Prerequisite: RESP 120, 190, and 200 with a grade of C or higher.*

## **RESP 170 – Therapeutics 4:3:3**

Addresses procedures such as airway insertion, airway care, intermittent positive pressure breathing (IPPB), suctioning, and extubation. This course also covers indications, contraindications, and objectives for administration. A course fee is required.

*Enrollment is restricted to students in the Respiratory Therapist AS program. Prerequisite: RESP 130, 140, 150, and 160 with grades of C or higher.*

## **RESP 175 - Clinical Practice I 2:0:13**

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 130, 140, 150, and 160 with grades of C or higher.*

## **RESP 190 - Acid-Base Physiology 2:2:0**

Metabolic and respiratory acid-base balance with stress on arterial blood gas interpretation. Clinical laboratory studies are also included. *Enrollment is limited to students in the Respiratory Therapist program. Prerequisite: CHEM 100 with grade of C or higher. Co-requisite: RESP 120.*

## **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: RESP 100 with a grade of C or higher. Co-requisite: BIOL 122 and ENGL 102, or permission of the Program Director. RESP 100 must be successfully completed within 12 months of taking this class.*

## **RESP 205 - Clinical Practice II 2:0:16**

Experience under the direct supervision of a clinical instructor for an average of sixteen hours per week for fifteen weeks.

Therapeutic modalities include incentive spirometry (SMI) intermittent positive pressure breathing (IPPB), therapeutic gases, bronchopulmonary drainage, and exercise therapy. Airway care is emphasized. Indications, contraindications, and objectives for administration are stressed. 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 Therapy AS program. Prerequisite: RESP 170, 175, and 200 with grades of C or higher. Co-requisite: RESP 210 and 260.*

## **RESP 210 - Critical Care 5:4:4**

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, and exercise therapy. A course fee is required.

*Enrollment is restricted to students in the Respiratory Therapist AS program. Prerequisites: RESP 170 and 175 with a grade of C or higher.*

## **RESP 230 - Cardiopulmonary Laboratory Procedures 2:2:1**

Theory, application, and interpretation of pulmonary laboratory studies, including an introduction to the theory and application of non-invasive cardiovascular diagnostic techniques and sleep studies. Intubation and pulmonary stress testing are covered. A course fee is required. *Enrollment is restricted to students in the Respiratory Therapist AS program. Prerequisite: RESP 190, 200, 205, and 210 with grades of C or higher. Co-requisite: RESP 235, or permission of the Program Director.*

## **RESP 235 - Clinical Practice III 2:0:16**

Experience under the direct supervision of a clinical instructor for an average of sixteen hours per week. Topics include mechanical ventilation, arterial blood gas sampling, analysis and interpretation and hemodynamic monitoring. 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 205 and 210 with grades of C or higher, and American Heart Association Advanced Cardiac Life Support Certification. Co-requisite: RESP 230, 240 and 250.*

## **RESP 240 - Current Topics 1:1:0**

Review of current topics and in respiratory therapy to include legislative and research issues. *Enrollment is restricted to students in the Respiratory Therapist AS program, or permission of the Program Director. Prerequisite: RESP 205, 210, and 260 with grades of C or higher. Co-requisite: RESP 230, 235, and 250.*

## **RESP 245 - Clinical Practice IV 2:0:13**

Allows students to gain experience under the supervision of a clinical preceptor and/or clinical instructor for an average of sixteen hours per week. This course focuses on critical care, cardiopulmonary laboratory, pulmonary rehabilitation, and home-care. A research project is also required for presentation and publication. Clinical experience includes observation, patient rounds, clinical simulations, and practical work situations. A course fee is required. *Enrollment is restricted to students in the Respiratory Therapist AS program. Prerequisite: RESP 230, 235, 240, and 250 with a grade of C or higher. Co-requisite: RESP 270 or permission of the Program Director.*

## **RESP 260 - Education and Management Techniques 2:2:0**

Covers the techniques and responsibilities involved in respiratory care management and respiratory education. *Enrollment is restricted to students in the Respiratory Therapist AS program. Prerequisite: RESP 170 and 175 with a grade of C or higher.*

## **RESP 270 - Neonatal/Pediatric Respiratory Care 4:3:3**

Fetal development, assessment of the newborn, and pathophysiology of cardiopulmonary diseases common to neonates and pediatric patients. Emphasis is on treatments commonly used. *Enrollment is restricted to students in the Respiratory Therapist AS program. A course fee is required. Prerequisite: RESP 230, 235, 240, and 250 with grades of C or higher. Co-requisite: RESP 245.*

# Course Descriptions

## **RESP 275 - Clinical Practice V 3:0:24**

Experience under the direct supervision of a clinical instructor for an average of twenty-four hours per week. Topics include neonatal and pediatric respiratory care, management, critical care, and adult respiratory care review. Clinical experience includes observation, patient rounds, clinical simulation, and practical work situation. Case studies are assigned. A course fee is required. *Enrollment is restricted to students in the Respiratory Therapist AS program. Prerequisite: RESP 245 and 270 with grades of C or higher.*

## **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. (Core B)(D)*

### **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: Honors Studies Major or completion of all developmental reading and writing courses required as a result of the College Testing and Placement Program. (Core B)(D)*

### **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. (Core B)(D)*

### **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. (Core B)(D)*

### **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. (Core B)(D)*

## **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. (D)*

## **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. (Core A)(D)*

### **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. (Core A)(D)*

### **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. (Core A)(D)*

### **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. (Core A)(D)*

## **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

# Course Descriptions

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. *Prerequisite: MATH 051 or 161 or higher and ENGR 102 or ARCH 130 with grades of C or higher.*

## **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. *Prerequisite: CVTE 208, ENGR 102, and SET 201 with grades of C or higher; or permission of the Instructor.*

## **Surgical Technology**

### **SURG 101 - Concepts in Surgical Technology** 2:2:0

Introduces students to theories and concepts in the role of a surgical technologist. Topics include professionalism, communication, biomedical science, the biopsychosocial needs of the surgical patient, ethical/legal issues specific to the perioperative setting, patient, and work place safety. *Prerequisite: BIOL 105 and 221 with a grade of C or higher. Co-requisite: SURG 105, 110, and BIOL 121.*

### **SURG 105 – Pharmacology** 1:1:0

Introduces pharmacology for the surgical technologist. Emphasis is on pharmacologic principles in surgery, medications commonly utilized in the perioperative setting and basic anesthesia concepts. *Prerequisite: High school biology and chemistry or HACC equivalent or permission of the Instructor. Co-requisite: SURG 101 and 110.*

### **SURG 110 - Introduction to Surgical Technology** 4:3:3

Introduces the fundamentals of operating room techniques, emphasizing 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. *Prerequisite: BIOL 105 and 221 with grades of C or higher. High school biology and chemistry, or BIOL 111 or chemistry with grades of C or higher, placement through the College Testing and Placement Program. Co-requisite: SURG 101, 105 and BIOL 121.*

### **SURG 111 - Surgical Procedures I** 4:3:3

Develops the concepts learned in SURG 110. This is a lecture/laboratory course that covers the theory and practice for general, gynecology, genitourinary, plastics and reconstructive, otolaryngology, and endoscopy surgical procedures with an

emphasis on the steps and instrumentation used for these interventions. A course fee is required. *Prerequisite: BIOL 105, 121, and 221; SURG 101, 105, 110; all with grades of C or higher. Co-requisite: BIOL 122 and SURG 210.*

### **SURG 112 - Surgical Procedures II** 4:3:3

Expands the student's knowledge of surgical specialties and clinical practice. This lecture/laboratory course specifically addresses cardiovascular, thoracic, neurological, oral, ophthalmic, and orthopedic procedures. Considerations for pediatric and geriatric procedures are also discussed. A course fee is required. *Prerequisite: BIOL 105, 121, 222, 221; SURG 101, 105, 110, 111, 210; with grades of C or higher. Co-requisite: SURG 220.*

### **SURG 150 - Clinical Remediation I** 1:0:3

Designed for 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. Aseptic technique, instrumentation, procedural planning, pharmacology, and patient safety are reinforced. *Prerequisite: SURG 111 and 210 with a grade of C or higher.*

### **SURG 210 - Surgical Clinical Externship I** 4:0:16

A practicum developing concepts learned in SURG 110 and 111. Students are assigned to affiliated agencies where they practice skills related to surgical techniques and principles. They participate actively as members of the surgical team, developing the skills necessary to scrub and assist in circulating during surgical procedures under supervision. A course fee is required. *Prerequisite: BIOL 105, 121, 221; SURG 101, 105, 110; all with grades of C or higher. Co-requisite: BIOL 122 and SURG 111.*

### **SURG 220 - Surgical Clinical Externship II** 6:0:24

A practicum that further develops clinical proficiency. Students are assigned to affiliated agencies where they practice skills related to surgical techniques and principles with the goal of scrubbing independently for common surgical procedures. They participate as members of the surgical team, building on the skills developed in SURG 210. A course fee is required. *Prerequisite: BIOL 105, 121, 122, 221; SURG 101, 105, 110, 111, 210; all with grades of C or higher. Co-requisite: SURG 112.*

### **SURG 230 - Surgical Clinical Externship III** 9:2:28

A clinical practicum in which students participate as members of the surgical team in common surgical procedures and in all clinical specialties. Students participate in seminars with classmates and beginning students. This course prepares the student for entry-level independent practice and certification as a surgical technologist. A course fee is required. *Prerequisite: BIOL 105, 121, 122, and 221; SURG 101, 105, 110, 111, 112, 210, and 220 all 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*

# Course Descriptions

*Program. (Core A)*

## **THTR 110 - Introduction to Acting** 3:2:3

Introduces students to the theory and techniques of the actor's art through exercises, improvisations, and movement. This course emphasizes exploring appropriate voice and interpersonal relationships. *Prerequisite: Eligibility for enrollment into ENGL 101. Co-requisite: THTR 120 and 130 for Theatre majors.*

## **THTR 111 - Acting II** 3:2:3

Covers the transition between exercises involving student actors' portrayal of self and their subsequent portrayal of characters. *Prerequisite: THTR 110, THTR 120, and THTR 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. *Co-requisite: THTR 110 and THTR 130.*

## **THTR 121 - Theatre Voice II** 2:1:3

Development of vocal skills directly related to specific stage problems. Students are expected to prepare and present recitations in class as part of their practical experience. *Prerequisite: THTR 120; Co-requisite: THTR 131.*

## **THTR 130 - Theatre Movement I** 1:1:1

Basic stage movement for the actor, emphasizing motion and alignment. *Co-requisite: THTR 110 and THTR 120.*

## **THTR 131 - Theatre Movement II** 2:1:3

The development of a character through whole-body movement. Included is an introduction to the basic skills of stage combat. *Prerequisite: THTR 120 and 130. Co-requisite: THTR 121 and 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. *Prerequisite: THTR 110 with a grade of B or higher.*

## **THTR 142 - Scenic Design** 3:1:3

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** 3:1:3

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** 3:1:3

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

The history of the American musical stage from early opera to the hits of Broadway with emphasis on production and performing skills. The course culminates in a student revue.

## **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 210 - Acting III** 3:2:3

Prepares students by means of projects to analyze plays, to develop characterizations, and to discuss pivotal scenes. *Prerequisite: THTR 110, THTR 111, THTR 121, and THTR 131.*

## **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. *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. *Prerequisite: THTR 210 with a grade of B or higher.*

## **THTR 220 - Introduction to Modern Dance** 3:1:3

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. *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 THTR 110 with a grade of C or higher.*

## **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.

# Course Descriptions

## Web

### **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. Students enrolled in this course (whether in-class or in blended sections) must attend two three-hour meetings of combined sections with one occurring early in the term and the other taking place later in the semester. *Prerequisite: ENGL 057 or a combination of ENGL 003, or 007 and 057 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 are 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 121 - Electronic Commerce 3:3:0**

Covers electronic commerce methodologies and practices. Topics include electronic commerce software, security, online transactions, payment systems, business strategies, marketing, electronic data interchanges, ethics, and legal issues.

### **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: Students are to complete one of the following: ART 108, 109, 176, CIS 105, 110, CNT 120, CPS 113, 115, 121, CAD 154, WEB 101, 102, 110, or 125 with a grade of C or higher, or permission of the Instructor.*

### **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

# Course Descriptions

conversion to CSS, HyperText Markup Language (HTML), scalable design, and media elements. *Prerequisite: WEB 125 and WEB 133 with a grade 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) (AJAX). jQuery and JJson are also discussed. *Prerequisite: WEB*

*125 and WEB 143 with grades of C or higher.*

## **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 247 - C#.NET Programming 3:3:0**

An introduction to computer programming using the C# programming language. Emphasis on basics of good C# programming techniques and style through extensive practice in writing, running, and debugging programs. *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 256 - Advanced JAVA Development 3:3:0**

Covers intermediate to advanced application development techniques using JAVA, advanced object-oriented programming and data structures, JAVA applets and servlets, and JSP. This should be spelled out. Students are taught the skills required to develop complex JAVA code such as data structures, Artificial Intelligence, and servlets. The course examines JAVA programming as it is used in embedded systems, special hardware, and current business applications. *Prerequisite: WEB 144 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 258 - Advanced Windows Development 3:3:0**

Covers intermediate to advanced web application development using current development technologies available through

# Course Descriptions

Microsoft. The course also utilizes eXtensible Markup Language (XML) and current online data storage technologies. This course also addresses the creation of advanced data-driven Web and mobile applications with the latest technologies, XML, on-line data services, Web services, and supporting Microsoft technologies. *Prerequisite: WEB 253 with a grade of C or higher.*

## **WEB 259 - Advanced PHP Development 3:3:0**

Covers advanced Web application development using the Hypertext Preprocessor (PHP) programming language and Internet services. This course focuses on the creation of database-driven Web pages, PHP programming, Object-Oriented programming (OOP), "PEAR" Object Library, data structures, Internet services, and Artificial Intelligence (AI). In addition, various current Web technologies are also incorporated into PHP applications. *Prerequisite: WEB 255 with a grade of C or higher.*

## **WEB 260 - Web Server Administration 3:3:0**

Configure and manage Web servers and Web sites for both Linux and Windows. This course focuses on Web server concepts, Web site analytics, performance, security, and the skills needed to work with popular technologies, such as Apache, PHP, Internet Information Server (IIS), and Active Server Pages (ASP.NET) *Prerequisite: Web 143 or CNT 120 with grades of C or higher.*

## **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**

## **WELD 101 - Print Reading for Welders 2:2:0**

Basic skills introduced include interpreting typical welding drawings and symbols, orthographic projection, tolerancing, fitting and dimensioning systems.

## **WELD 102 - Oxy-Fuel Welding and Cutting 3:2:3**

Provides 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. Topics

include rod sizes, common flaws, and types of welds and joints. Safety is stressed. A course fee is required.

## **WELD 103 - Shielded Metal Arc Welding I 3:2:3**

Provides technical information and hands-on experience in flat and horizontal position shielded metal arc welding. Topics include electrode sizes, common flaws, and types of welds and joints. Safety is stressed. A course fee is required. *Prerequisite: WELD 102 with a grade of C or higher.*

## **WELD 105 - Shielded Metal Arc Welding II 3:2:3**

Provides technical information and hands-on experience in vertical and overhead position shielded metal arc welding. Topics include identification of common flaws, analysis of operating principles, and principles of non-fusion welding. Safety is stressed. A course fee is required. *Prerequisite: WELD 103 with a grade of C or higher.*

## **WELD 107 - Shielded Metal Arc Welding III 3:2:3**

Development of skills in shielded metal arc welding (SMAW) including hands-on experience in welding test plates in all positions and welding performed with and without use of backup material on steel. Safety is stressed. A course fee is required. *Prerequisite: WELD 105 with a grade of C or higher.*

## **WELD 109 - Gas Metal, Gas Tungsten and Flux Core Arc Welding 3:2:3**

Technical information and hands-on experience for all positions of steel, stainless steel, and aluminum gas tungsten arc welding (GTAW), and gas metal arc welding (GMAW). Topics include flux cored arc welding (FCAW) and other processes important in industrial applications as well as troubleshooting common equipment used as power sources. A course fee is required. *Prerequisite: WELD 107 with a grade of C or higher.*

## **WELD 111 - Welding Applications 3:2:3**

Technical information and hands-on experience in electric arc, oxygen-acetylene (MIG), and heliarc (TIG) welding. Other welding techniques also covered. A course fee is required.

## **WELD 120 - Gas Metal Arc Welding I 3:1.5:4.5**

Gas metal arc welding. This is the first in a series of courses which teach the student 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. *Prerequisite: WELD 101, 102, and 103; or permission of the Instructor or Program Coordinator.*

## **WELD 130 - Gas Tungsten Arc Welding I 3:1.5:4.5**

Gas tungsten arc welding. This is the first in a series of courses which teach the student the operation and application of gas tungsten arc welding (GTAW). The student selects proper current, prepares metal, and makes satisfactory welds on ferrous metals. The course includes fillet and groove welds in a variety of positions. A course fee is required. *Prerequisite: WELD 101, 102, and 103; or permission of the Instructor or Program Coordinator.*

## **WELD 220 - Gas Metal Arc Welding II 3:1.5:4.5**

Gas metal arc welding. This is the second in a series of courses which teach the student the operation and application of gas metal arc welding (GMAW). The student sets up, operates, and

# Course Descriptions

maintains a gas metal arc welder. The student makes satisfactory welds on aluminum and stainless steel in a variety of positions. The student also develops advanced skills in welding ferrous metals. A course fee is required. *Prerequisite: WELD 120, or permission of the Instructor or Program Coordinator.*

## **WELD 230 - Gas Tungsten Arc Welding II** 3:1.5:4.5

Gas tungsten arc welding. This is the second in a series of courses which teach the student the operation and application of gas tungsten arc welding (GTAW). The student selects proper current, prepares metal, and makes satisfactory welds. The course includes advanced welds on ferrous and non-ferrous metals as well as on pipe. A course fee is required. *Prerequisite: WELD 130, or permission of the Instructor or Program Coordinator.*

## **WELD 240 - Pipe Welding** 3:1.5:4.5

Welding of piping or tubing. Students develop skills in the welding of pipe or tubing using oxy-fuel, shielded metal arc (SMAW), gas metal arc (GMAW), gas tungsten arc (GTAW), and other welding processes. Weldments are made on pressure piping rotated and non-rotated positions in accordance with industry standards. A course fee is required. *Prerequisite: WELD 101, 102, and 103; or permission of the Instructor or Program Coordinator.*

## **WELD 291 - Welding Cooperative Work Experience** 3:0:15

On-the-job training (OJT). Faculty monitored OJT with a welding employer for a minimum of 15 hours per week (225 total hours). The student learns and practices technical skills on-the-job. *Prerequisite: Must have completed 24 hours of welding course work with an overall C average; and permission of the Program Coordinator.*

## **Woodworking**

### **WOOD 101 - Woodworking I** 4:2:4

The first in a series of three progressively informative courses. The course is designed to build a comprehensive skill set in the safe and effective use of hand and power woodworking tools and machinery. The skill set is applicable to cabinetry, millwork and furniture making. Students complete projects using both solid and sheet wood products. A course fee is required.

### **WOOD 102 - Woodworking II** 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.*

### **WOOD 103 - Woodworking III** 4:2:4

The third in a series of three progressively informative courses. The course is designed to build a comprehensive skill set in the safe and effective use of hand and power woodworking tools and machinery to prepare the student for advanced studies in cabinetry, millwork or furniture making, finishing, CNC, etc. The student is introduced to site preparation and off-site installation. The student continues working with specialized machine applications such as print reading, field measuring, machine set-up and maintenance. Students complete projects in cabinetry, architectural millwork, and furniture. A course fee is required.

*Prerequisite: WOOD 102 with a grade of C or higher.*

### **WOOD 110 - Wood Technology** 3:3:2

Covers all aspects of wood technology. The course includes identification, properties, machining, forestry practices, and resources sustainability. Many characteristics of wood are examined through hands-on laboratory experiences. A course fee is required. *Prerequisite: Eligibility for enrollment into ENGL 101.*

### **WOOD 220 – Finishing** 3:2:3

A comprehensive course in wood finishing materials and techniques. The course covers preparation, product selection, and application techniques. Students prepare a finishing sample board representing a wide variety of woods, finishes and applications. A course fee is required.

### **WOOD 240 - Architectural Millwork** 4:2:4

Addresses a broad range of architectural millwork applications including fabrications, finishing, and installation. Students complete projects which include doors, windows, stairs, trim, and fireplace mantles. A historical context is also covered. A course fee is required. *Prerequisite: WOOD 103 with a grade of C or higher.*

### **WOOD 250 – Cabinetmaking** 4:2:4

The design, fabrication, finishing, and installation of residential and commercial casework. Students build a relationship with a client and execute the job according to the client's expectations. Students also have the opportunity to construct a project for personal use. A course fee is required. *Prerequisite: WOOD 103 with a grade of C or higher.*



# College Leadership

# College Leadership



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The honorary degree of Doctor of Public Service is awarded to outstanding individuals in recognition of distinguished leadership and service.

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Benjamin David James, Ph.D. 2007  
Marion C. Alexander, 2008  
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Greg King, 2014



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