Westmoreland County Community College

catalog

2015-16

wccc.edu

A Message from the President

Welcome to Westmoreland County Community College. We are excited that you are considering WCCC to begin your educational journey.

Whatever your interest, WCCC offers a variety of options to meet your academic and career goals. Whether you want to earn an associate degree, transfer that degree to a baccalaureate program at a four-year university or prepare for a career, we can help you succeed.

We offer more than 65 transfer and career-track degree programs, and stackable certificates that provide you with "on ramps and off ramps" to immediate employment and advanced education.

To ease the transfer process for bachelor's degree seekers, we have agreements with numerous prestigious colleges and universities including California University of Pennsylvania, University of Pittsburgh (Oakland/Greensburg/Johnstown), Seton Hill University, Saint Vincent College, Indiana University of Pennsylvania and Pennsylvania State University, to name a few.

We know our students lead busy lives so we offer flexible scheduling at our nine locations, including the Youngwood campus and the Bushy Run, Latrobe, Mon Valley, New Kensington, Greene County, Fayette County and Indiana County education centers.

Our new facility, the Advanced Technology Center located at RIDC-Westmoreland in Mount Pleasant, offers programs in energy, industrial technology, manufacturing and more for new students and incumbent workers who need technical skills to advance in their current jobs.

Additionally, approximately 200 courses are available online each semester. So, with our nine locations and online classes you can learn where and when it's convenient for you.

To support you along your academic journey, we also provide a full array of student services, including tutoring, career counseling, financial aid and job placement assistance as well as child day care at the Youngwood campus.

As a WCCC student, you can participate in inter-collegiate and intramural sports, student clubs and organizations, and musical and cultural events on campus. You also have the opportunity to challenge yourself through our honors programs and research projects and assist with community service projects. In short, you can have a great collegiate experience at WCCC.

Thank you for considering WCCC. I wish you much success as you take advantage of all that we have to offer you.

President Tuesday Stanley
stanleyt@wccc.edu

Table of Contents

Notice of Nondiscrimination

Westmoreland County Community College will not discriminate in its educational programs, activities or employment practices based on race, color, national origin, sex, sexual orientation, disability, age, religion, ancestry, union membership or any other legally protected classification. Announcement of this policy is in accordance with state law including the Pennsylvania Human Relations Act and with federal law, including Titles VI and VII of the Civil Rights Act of 1964, Title IX of the Educational Amendments of 1972, Section 503 and 504 of the Rehabilitation Act of 1973, the Age Discrimination Act of 1975, and the Americans with Disabilities Act of 1990. Inquiries should be directed to the Affirmative Action Officer (presently Sylvia Detar) at 724-925-4190 or in Room 4100D, WCCC Business & Industry Center, Youngwood, PA 15697.

Telephone Directory

Admissions Office. 724-925-4077
Advanced Technology Center 724-925-4269
Bookstore. 724-925-4174
Campus Children's Center 724-925-4156
College Learning Center 724-925-4135
Continuing Education 724-925-4107
Counseling. 724-925-4121
Disabled Student Services 724-925-4121
Division Offices
- Computer Technology/Business . . 724-925-4004
- Distance Education, Education Centers & High School Partnerships 724-925-4177
- Public Service/Humanities/ Social Sciences/Mathematics . . . 724-925-4046
- Health Professions/Natural Sciences 724-925-4029
- Workforce Development/Technologies/ Culinary Arts/Physical Sciences/ Horticulture 724-925-4086

Education Centers
- Advanced Technology Center. 724-925-4269
- Bushy Run 724-327-8090
- Fayette County 724-437-3512
- Greene County 724-627-3464
- Indiana County. 724-357-1404
- Laurel. 724-539-3390
- Mon Valley 724-379-4119
- New Kensington 724-335-8110
- Public Safety Training Center 724-872-2447

Financial Aid 724-925-4063
Health/Fitness Center 724-925-4244
Library. 724-925-4100
Placement Assessment. 724-925-6893
Registration 724-925-4204
Student Activities. 724-925-4055
Student Placement. 724-925-4121
Student Records 724-925-4069
TDD. 724-925-4297
Transfer Services 724-925-4059
Tutoring. 724-925-4135
Veteran's Services 724-925-4056

For other WCCC offices call 724-925-4000.

2015-2016 ACADEMIC CALENDAR

Fall 2015

Classes begin	Aug. 20
Labor Day (college closed)	Sept. 7
No classes	Oct. 6
Thanksgiving recess	Nov. 25-28
Last day for student-initiated withdrawal	Dec. 7
Last day of classes/final exams	Dec. 16

Spring 2016

Dr. Martin Luther King Observance (college closed)	Jan. 18
Classes begin	Jan. 19
No classes	Feb. 25, March 23
Spring Break	March 24-26
Last day for student-initiated withdrawal	April 13
Last day of classes/final exams	May 12
Commencement	May 13

Mission/Vision/Values

MISSION

WCCC improves the quality of life of everyone we touch through education, training and cultural enrichment.

VISION

WCCC is a learning-centered college focused on student success, a catalyst for economic growth, a leader in workforce development, and a hub for cultural and artistic experiences.

VALUES

WCCC has a framework of cultures and values that embraces:

1. **Commitment to Teaching and Learning** (personal attention, individual choices, academic excellence, adaptive, promotes curiosity)
2. **Accountability** (responsibility, stewardship of resources, empowerment, results-oriented)
3. **Diversity** (respect for self and others, inclusion, value uniqueness)
4. **Collaboration and Cooperation** (teamwork, community partnerships)
5. **Social Responsibility** (promote active interest, awareness of world, being a good steward)
6. **Integrity** (honesty, ethical standards, dedication)
7. **Innovation** (creativity, commitment to growth, forward thinking)

ACCREDITATION

Westmoreland County Community College is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools, 3642 Market Street, Philadelphia, PA 19104, 267-284-5000. The Commission on Higher Education is an accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation.

Programs at the college are approved by the Pennsylvania State Department of Education for veteran's educational benefits. In addition, the following programs carry specific accreditation/approval by certifying/accreditation organizations:

- The associate in applied science degree Baking and Pastry program, Culinary Arts programs and Restaurant/Culinary Management program are accredited by the American Culinary Federation Education Foundation Accrediting Commission (ACFEFAC), a specialized accrediting agency recognized by the Council on Higher Education Accreditation (CHEA).

- The Dental Assisting and Dental Hygiene programs are accredited by the Commission on Dental Accreditation of the American Dental Association, a specialized accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation.

- The diploma in Medical Assisting, Youngwood campus, is accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org) upon the recommendation of the Medical Assisting Education Review Board (MAERB). Commission on Accreditation of Allied Health Education Programs, 1361 Park Street, Clearwater, FL, 727-210-2350.

- The Practical Nursing Diploma Program is fully approved and the Associate Degree Nursing Program is on full approval status by the Pennsylvania State Board of Nursing. The Associate Degree Nursing program is accredited by the Accreditation Commission for Education in Nursing (ACEN), 3343 Peachtree Road NE, Suite 850, Atlanta, GA 30326; 404-975-5000; www.acenursing.org for achievement of quality and excellence in nursing education.

- The associate of applied science degree Diagnostic Medical Sonography program is accredited through the Commission on Accreditation of Allied Health Education Programs (CAAHEP), 1361 Park St., Clearwater, FL 33756; 727-210-2350; www.caahep.org with 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.

This catalog reflects the most current information about Westmoreland County Community College and does not constitute a contract between the student(s) and WCCC. The college reserves the right to amend any provisions or requirements at any time. Admission to WCCC acknowledges notice and acceptance of the college's reservation of this right.

WCCC Profile

Founded: 1970

Location: Youngwood, Pa., approximately 6 miles south of Greensburg, off Route 119

Phone: 724-925-4000

Internet: www.wccc.edu

Enrollment: approximately 5,368 full- and part-time students

Programs: 63 associate degree, 16 diploma, and 57 certificate programs with options that prepare students for careers or transfer to baccalaureate degree programs at four-year institutions.

Degrees Granted: associate of arts degree, associate of fine arts degree, associate of applied science degree, diploma and certificate

Campus: The main campus is located in a rural setting a short distance from the New Stanton Interchange of the Pennsylvania Turnpike off Route 119. The 80-acre campus comprises four buildings. Founders Hall, Commissioners Hall and Science Hall house general classrooms, science laboratories, computer and desktop publishing laboratories, multimedia technology laboratory, culinary arts laboratory with dining facility, dental hygiene clinic, radiology technology laboratory, greenhouse, theater, art gallery, library, Student Services, College Learning Center, Campus Children's Center, bookstore, student lounges, cafeteria, gymnasium, fitness center, and indoor running track. The Business & Industry Center contains classrooms, laboratories, offices and training facilities for area employers. In addition, there are athletic fields for baseball, softball and other sporting activities. All buildings are easily accessible to the physically disabled. There are also designated parking spaces for the physically disabled. The WCCC smoking policy designates all buildings at the Youngwood campus and the education centers as smoke-free.

Off-Campus Centers: To provide access to quality educational opportunities to all area residents, the college operates eight off-campus education centers - WCCC-Bushy Run, Export; WCCC-Fayette, Uniontown; Greene County Center, Waynesburg; Indiana County Center, Indiana; WCCC-Latrobe, Latrobe; WCCC-Mon Valley, Belle Vernon; and WCCC-New Kensington, New Kensington - that serve all of Westmoreland, Fayette, Greene and Indiana counties.

The new WCCC Advanced Technology Center, located at RIDC-Westmoreland in the former Sony facility, houses the college's workforce development programs and provides the regions' employers with state-of-the-art facilities for advanced training in mechatronics, additive manufacturing, energy, machining and fabrication, and nanotechnology for students and local employers.

The WCCC Public Safety Training Center, located near Smithton, provides public safety training for fire, police and emergency services responders.

Faculty: 85 full-time teaching faculty and approximately 328 part-time faculty

Academic Calendar: two 15-week semesters (fall, spring); two 12-week Late-Start sessions (fall, spring); and 5-1/2-, 8- and 11-week summer sessions. Classes are conducted weekdays, evenings, Saturdays and online.

Directions - Youngwood Campus:
From Greensburg and Route 30: Take Route 119 South into Youngwood. At the second traffic light, Depot Street, turn left and proceed one mile to the college, located on the right.

From the New Stanton interchange of the Pennsylvania Turnpike (Exit 8/75): Take Route 119 North into Youngwood. At the fourth traffic light, Depot Street, turn right and proceed one mile to the college, located on the right.

WCCC Education Centers

WCCC maintains education centers that serve all of Westmoreland, Fayette, Greene and Indiana counties. Day and evening classes are conducted at WCCC-Bushy Run, Export; WCCC-Fayette, Uniontown; Greene County Center, Waynesburg; Indiana County Community College Center, Indiana; WCCC-Latrobe, Latrobe; WCCC-Mon Valley, Belle Vernon; and WCCC-New Kensington, New Kensington. In addition, online courses are offered to students at these sites. Student services such as counseling, advising and financial aid are also available at scheduled times. Students can also pay tuition and fees and purchase textbooks at the centers.

WCCC-Bushy Run

WCCC-Bushy Run is located at 6707 Mellon Road near Murrysville. The center houses traditional classrooms, a distance learning classroom, a computer laboratory, a science laboratory, accommodations for workforce development training, a student lounge with Wi-Fi and offices. 724-327-8090

DIRECTIONS: From Greensburg: Take Route 66 North to Route 22 heading west toward Pittsburgh. At the third traffic light, turn left onto Mellon Road and proceed approximately 1.5 miles to the Bushy Run Center on the left.

From Murrysville: Take Route 22 East toward Delmont. Turn right at the intersection onto Mellon Road and proceed 1.5 miles to the Bushy Run Center.

From Harrison City: At the intersection of Route 130 and Harrison City Export Road, travel north on Harrison City Export Road 3 miles. Bear right onto Mellon Road past the entrance to Westmoreland Country Club and proceed approximately 1 mile to the center on the right.

WCCC-Latrobe

WCCC-Latrobe is located at 130 Depot Street, Latrobe. The new center houses traditional, computer and multipurpose classrooms; a Collaborate classroom; allied health and science labs; student study areas; a conference room; and administrative offices.

DIRECTIONS: From Route 30: Take Route 981 North toward Latrobe. (Route 981 becomes Lloyd Avenue.) Cross the bridge and bear right onto Main Street then take the first left onto Jefferson Street. Turn left onto Depot Street. The center is on your right.

From Route 22-New Alexandria: Take Route 981 South and turn right onto PA 981/Industrial Boulevard at the traffic light. The center is on your right at the intersection of Depot and Jefferson streets.

WCCC-Mon Valley

WCCC-Mon Valley, located off Route 51 at 1181 Fells Church Road, Belle Vernon, houses traditional classrooms, a distance learning classroom, a computer laboratory, offices and a student lounge. 724-379-4119

DIRECTIONS: From Route 51 North: Make the first left turn at the traffic light past Bill's Golfland. Proceed on Fellsburg Road approximately 1/2 mile to the traffic light and turn right at the light; the Mon Valley Center is on the right.

From Route 51 South: Make the right turn at the United Gospel Alliance Church. Proceed 1 mile and turn left into the college parking lot before the traffic light.

WCCC-New Kensington

Opened in January 2009, WCCC-New Kensington is located at 1150 Fifth Avenue in downtown New Kensington. The center contains traditional classrooms, computer classrooms/labs, a science lab, administrative offices and a student lounge. The center is also home to PA CareerLink - Alle-Kiski, which provides services to the unemployed.
724-335-8110

DIRECTIONS: From C. L. Schmitt Bridge: At the second traffic signal, turn left onto 4th Avenue. Follow 4th Avenue up to 11th Street and turn right. Turn left onto 5th Avenue. WCCC is located on the right.

From Greensburg Road: At the Parnassus Intersection, (CVS), proceed straight through the traffic signal onto Industrial Boulevard. Stay on Industrial Boulevard through town and pass the C. L. Schmitt Bridge. At the stop sign, go straight and make a right onto 11th street (in front of the UniFirst). Proceed through first stop sign and turn left at the following stop sign onto 5th Avenue. WCCC is located on the right.

From Vandergrift/Leechburg; Follow Rte. 56 toward New Kensington. Turn right onto 7th Street (next to Valley High School track) and proceed straight to first traffic signal. Turn right onto Freeport Road and proceed to next traffic signal. Turn left onto Locust Street, cross the viaduct to next stop sign. Turn right onto 5th Avenue. WCCC is located on the right.

Advanced Technology Center

The Advanced Technology Center, located in RIDC-Westmoreland at 1001 Technology Drive in Mt. Pleasant, provides state-of-the-art classrooms, labs featuring specialized equipment for hands-on training and open, flexible instructional space for collaborative learning. In addition to housing the workforce development programs, the center provides advanced training for the region's employers. 724-925-4269

DIRECTIONS: From New Stanton - Take I-70 East toward US-119/Greensburg. Take Exit 1 to merge onto US-119 South toward Connellsville and then exit on Technology Drive. Proceed to traffic light and turn left (intersection of Old 119/State Route 3093) and then make the first right into facility.

From Greensburg: Follow US-119 South/ South Main St. Take the exit to stay on US-119 South toward Connellsville and exit on Technology Drive. Proceed to traffic light and turn left (intersection of Old 119/State Route 3093) and then make the first right into facility.

From Pittsburgh: Take I-376 East toward Monroeville then get on I-76 East. Take Exit 75 for US-119/PA-66 toward Greensburg. Take Exit 1 to merge onto US-119 South toward Connellsville Exit on Technology Drive.

Proceed to traffic light and turn left (intersection of Old 119/State Route 3093) and then make the first right into facility.

Public Safety Training Center

Designed for firefighter, police and emergency services personnel, the center is located in South Huntingdon Township. The facility features a six-story tower with an attached 2 1/2 story residential building that simulates industrial, commercial and residential structures. Also on site are a classroom/administration building, class A live burn building, outdoor firing range, rubble pile, outdoor training props and pond. 724-872-2447

DIRECTIONS: From I-70 W (New Stanton and PA Turnpike, exit 75) - Take I-70 West 8 miles from New Stanton to the Smithton exit (no. 49). Exit, and turn left at the stop sign onto Fitz Henry Road. Proceed 1 mile and turn right onto Reduction Road. Proceed 1 mile to the PSTC entrance on the left.

From I-70 E (Belle Vernon and I-79) - Proceed on I-70 East to the Smithton exit (no. 49). Exit and turn left at the stop sign onto Fitz Henry Road. Proceed 1 mile and turn right onto Reduction Road. Proceed 1 mile to the PSTC entrance on the left.

WCCC-Fayette

Located at the Fayette County Community Action Agency Inc. Campus in Uniontown, WCCC-Fayette houses two traditional classrooms, a computer classroom, a videoconferencing classroom and administrative offices. 724-437-3512

DIRECTIONS: From U.S. 119 South: Take the PA Route 51 ramp to Pittsburgh Street. Turn left on Route 51 South/Pittsburgh Road and continue to follow Route 51 South. Turn left onto W. Penn Street and then turn left onto North Beeson Boulevard.

From PA 21 Roy E. Furman Highway: Turn right onto US 40 East. Turn left onto Beeson Boulevard.

Greene County Education Center

The Greene County Education Center is located in the EverGreene Technology Park in Waynesburg. Easily accessible from I-79, the center contains two computer labs, a nursing lab, six classrooms and a student lounge. 724-627-3464

DIRECTIONS: From I-79 South: Take Exit 14 (Waynesburg). At the bottom of the exit ramp, turn left onto Roy E. Furman Highway. Proceed to the second traffic light and make a left onto Progress Drive. Go straight on Progress Drive until the road splits. Bear to the right and follow the road to EverGreene Technology Park. WCCC is located in the first building on the right.

From I-79 North: Take Exit 14 (Waynesburg). At the bottom of the exit ramp, turn left onto Roy E. Furman Highway. Proceed to the first traffic light and make a left onto Progress Drive and follow the directions listed above.

From Route 21 West: Make a right onto Progress Drive at the light just after the Greene County Airport and follow the directions listed above.

From Route 21 East: Proceed under I-79 and follow the directions from I-79 South listed above.

Indiana County Community College Center of WCCC

The Indiana County Community College Center is located at 45 Airport Road, Indiana, near the Jimmy Stewart Airport. Easily accessible from routes 286 and 119, the center contains a computer lab, a nursing lab, six classrooms, an office and a student lounge. 724-357-1404

DIRECTIONS: From Punxsutawney: Take Route 119 South to the Clymer/Indiana Exit and exit at Clymer Route 286. At the end of the exit ramp, turn right onto Airport Road. Continue approximately 100 yards and turn left into the parking lot.

From Blairsville: Take Route 119 North to the Clymer/Indiana Exit and exit at Clymer Route 286. At the end of the exit ramp, turn right onto Airport Road. Continue approximately 100 yards and turn left into the parking lot.

ADMISSIONS

High school graduates or those who hold a GED high school equivalency are granted admission to the college. Individuals 18 years of age and older who have not earned a high school diploma or a GED may be admitted to the college if they can demonstrate their ability to benefit from the college experience. After successfully completing 30 credits at WCCC, they may be eligible to petition for a Commonwealth Secondary School Diploma. Forms for Commonwealth Secondary School Diplomas are available at the Department of Education, GED, Harrisburg.

Requirements for Admission

1. Submit the online Application for Admission at wccc.edu. Readmit students who have previously taken courses at WCCC for college credit should contact the Student Records Office to update their academic record.
2. Upon receipt of the Application for Admission, the Admissions Office will send information on placement assessment and registration.
3. Take the placement assessment and register for classes.
4. Transfer students desiring credit for prior coursework completed must submit an official transcript from regionally accredited colleges and complete the Request to Transfer Credit to WCCC Form.
5. In order to complete the admission process, students must request that their high school send an official copy of their transcript to the WCCC Admissions Office. GED holders must submit their GED certificate with the Application for Admission. Financial aid processing cannot be completed without these transcripts.
6. International students must submit official English-translated academic credentials, TOEFL scores of 61 or higher (TOEFLiBT), a statement of financial support for the entire period of enrollment, and provide documentation of immigration status.

Admission to Specific Programs

In addition to the general requirements, some programs have specific admission requirements. The requirements for the dental assisting, dental hygiene, diagnostic medical sonography, expanded functions dental assisting, nursing, medical assisting, phlebotomy and radiology technology programs are listed on the pages describing these programs. (See program index pages 37, 38.)

Students who do not meet the requirements for a specific program may become eligible after completing appropriate course work.

Full- and Part-time Students

Full-time students register for 12 or more credits a semester; part-time students register for fewer than 12 credits a semester.

Since many programs and courses fill to capacity well before the beginning of each semester, early inquiry is advised.

Students interested in attending WCCC are encouraged to contact the Admissions Office at 724-925-4077 or 1-800-262-2103 for more information, an application, an interview, or a campus tour.

College in the High School Programs

Early College

This program is designed for motivated students with good academic and attendance records who wish to get a head start on college. While still in high school, students can complete up to 30 semester hours of general education coursework or even earn a college certificate by enrolling in regularly scheduled online and/or on-campus courses at WCCC. Students considering the Early College Program must be in their junior or senior year of high school, have a 2.5 cumulative grade point average on a 4.0 scale, and meet the college's requirements for entry into the course. They must also obtain written permission from a high school administrator and a parent/guardian, and meet with the WCCC Admissions-Special Programs coordinator.

Dual Enrollment

Students can receive college credit for specific classes without even leaving high school. Unlike the Early College Program, students take dual enrollment classes in their regular school with high school teachers who have been certified to teach the course. This program allows high school students to fit college courses into a busy schedule while taking classes in a familiar environment. Interested students must be a sophomore, junior or senior with a 2.5 cumulative grade point average on a 4.0 scale, and meet the college's requirements for entry into the course. Permission from a high school administrator is also required.

SOAR

SOAR (Students Occupationally and Academically Ready) is a career and technical educational plan that prepares students for college and careers in a diverse, high-performing workforce through articulation with the Pennsylvania Department of Education and local Career and Technology Centers (CTC). Students who have completed their Program of Study at a CTC with a minimum 2.5 cumulative grade point average are eligible for college credit for up to three years after graduating from high school. Students interested in this program are encouraged to work with their CTC teachers to complete the official POS paperwork.

The SOAR logo on an academic program description in this catalog indicates that for that degree, the college offers to award free college credit to qualifying graduates of Pennsylvania secondary Career and Technical Programs of Study according to a statewide articulation agreement with the Pennsylvania Department of Education (PDE). Under these Perkins IV Statewide Articulation Agreements, the college will award college credits to students who have met all of the criteria for qualification and have submitted all required documentation under the terms and conditions of the agreement. High school seniors and graduates who are completers of PDE Bureau of Career and Technical Education-approved secondary SOAR Programs of Study (POS), should submit the required documentation to the Admissions coordinator of special programs at 724-925-4064 in order to receive the advanced placement credits.

Requirements for receiving advanced placement credits include:

- Earn a high school diploma, achieve a 2.5 or higher grade point average on a 4.0 scale in the aligned technical course, and complete the secondary school component of the PDE-approved Program of Study
- Achieve competent or advanced level on the secondary end-of-program assessment (e.g., NOCTI)
- Achieve proficiency on all the PDE-approved Program of Study secondary competencies
- Furnish documentation as required by the agreement
  - Copy of high school diploma
  - Official student transcript
  - Completed secondary competency task list indicating proficiency on each task, with the official PDE competency cover sheet signed by your secondary program instructor
  - PA Skills Certificate of PA Certificate of Competency from the technical end-of-program assessment
  - Copies of any industry certifications earned
  - The POS Perkins Statewide Articulation Agreement Documentation Coversheet completed by your secondary school

For more information, go to www.wccc.edu, click on the Future Students tab, click Academic Information and then SOAR. Details on the WCCC degrees that are currently aligned with SOAR Programs of Study can be found by following the Soar Programs at WCCC hyperlink; information on SOAR and the required document templates can be found by clicking on the SOAR logo.

At the time of catalog publication, 32 WCCC degrees have been aligned to the related secondary Programs of Study and approved by PDE under the statewide articulation agreement. The chart on the following pages lists the WCCC degrees aligned with secondary Programs of Study.

CIP Code and Secondary Program Names	WCCC Program	Credits	Courses	HS Grad Year
52.0302 Accounting	Accounting, AAS	9	ACC 155 ACC 230 ACC 234	2010 - 2015
52.0401 Administrative Assistant & Secretarial Science	Office Technology, AAS, Office Administration Option	12	OFT 140 OFT 190 CPT 195 CPT 150	2010 - 2015
12.0501 Baking Pastry Arts/Baker/ Pastry Chef	Baking and Pastry, AAS Apprenticeship	10	BKP 141 BKP 245 FSM 103 *FSM 118- 2 cr if Serv-Safe Certification is provided	2013 - 2015
	Baking and Pastry, AAS Non-Apprenticeship	10		
	Restaurant Culinary Management, AAS	7		
43.0107 Criminal Justice/Police Science	Criminal Justice, AAS	9	CRJ 155 CRJ 163 CRJ 160	2013 - 2015
11.0901 Computer Systems Networking & Telecommunications	Computer Technology, AAS, Networking Option	9	CPT 155 CPT 163 CPT 160	2011 - 2013
	Computer Information Security, AAS	9		
	Computer Technology, AAS, Technical Support Option	9		
11.0901 Computer Systems Networking & Telecommunications	Computer Technology, AAS, Networking Option	9	CPT 145 CPT 181 CPT 183	2013 - 2015
	Computer Technology, AAS, Technical Support Option	9		
15.1202 Computer Technology/ Computer Systems Technology	Computer Technology, AAS, Networking	9	CPT 150 CPT 182 CPT 248	2011 - 2013
	Computer Technology, AAS, Technical Support	9		
	Computer Technology, AAS Telecommunications	9		
10.9999 Communications Technology/ Technicians & Support Services	Computer Technology, AAS, Technical Support	9	CPT 145 CPT 150 CPT 181	2012 - 2014
	Computer Technology, AAS, Networking	9		
51.0601 Dental Assisting/Assistant	Dental Assisting, Diploma	8	DAS 100 DAS 103	2013 - 2015
15.1301 Drafting & Design Technology	Engineering Technology, AAS	12	DFT 105 DFT 106 DFT 258	2011 - 2015
	Drafting and Design Technology, AAS, CADD/CAM Option	12		
	Drafting and Design Technology, AAS Mechanical	12		
15.0303 Electrical, Electronic & Communications Technology	Electronics Engineering, AAS	8	ELC 102 ELC 106	2011 - 2013
	Manufacturing Technology, AAS, Nanofabrication	8		
	Computer Systems Electronics, AAS, Electro-Optics	8		
	Computer Systems Electronics Technology, AAS, Networking	8		

CIP Code and Secondary Program Names	WCCC Program	Credits	Courses	HS Grad Year
15.0303 Electrical, Electronic & Communications Technology	Electronics Engineering Technology, AAS General Option	12	ELC 102 ELC 106 ELC 191	2013 - 2015
10.0399 Graphic Communications, Other	Graphic Communications, AAS Graphics & Publishing	9	GCT 115 GCT 131 GCT 151	2013 - 2015
47.0201 Heating, Air Conditioning, Ventilation & Refrigeration Control Systems	Heating, Ventilation, Air-Conditioning and Refrigeration, AAS	11	HAC 101 HAC 170 HAC 250	2011 - 2015
43.9999 Homeland Security, Law Enforcement, Firefighting and Related Protective Services	Homeland Security, AAS	9	CRJ 155 CRJ 225 HSM 109	2011 - 2013
43.9999 Homeland Security, Law Enforcement, Firefighting and Related Protective Services	Homeland Security, AAS	9	CRJ 155 HSM 102 HSM 109	2014 - 2016
01.0601 Horticultural Operations, Applied Horticulture	Horticulture, AAS Floriculture	9	HOR 105 HOR 170 HOR 241	2014 - 2015
12.0508 Institutional Food Workers	Baking and Pastry, AAS (APP, NA) Culinary Arts, AAS, (APP, NA)	11	BKP 141 FSM 103 FSM 105	2011 - 2013
12.0508 Institutional Food Workers	Culinary Arts, AAS, (APP, NA) Baking and Pastry, AAS (APP, NA) Restaurant/Culinary Management, AAS Dietetic Technology/Nutritional Services Mgmt.	11 11 11 10	BKP 141 FSM 103 FSM 105 *FSM 118- 2 cr if Serv-Safe Certicate is provided	2014 - 2016
48.0501 Machine Tool Technology	Machine Technology, AAS Computer Numerical Control Technology, AAS *MTT 215 not required course	12 9	MTT 215 MTT 100 MTT 105 MTT 110	2011 - 2013
48.0501 Machine Tool Technology	Machine Technology, AAS Computer Numerical Control Technology, AAS	12 12	MTT 111 CNC 111 MTT 101	2013 - 2015
51.0801 Medical/Clinical Assistant	Medical Assisting, Diploma	3	BIO 107	2013 - 2015
52.1801 Sales Distribution & Marketing Operations	Business, AAS, Marketing	9	BUS 240 MKT 242 MKT 254	2010 - 2015
11.0801 Web Page, Digital/Multimedia & Information Resources Design	Web Technology, AAS Web Applications Option Graphic Communications, AAS Graphics & Publishing Option/ Publishing Concentration Graphic Communications, AAS Web & Mobile Design Option	9	WEB 110 WEB 140 GCT 124	2013 - 2015
48.0508 Welding Technology/Welder	Welding Engineering Technology, AAS	10	WEL 125 WEL 135 DFT 110	2010 - 2012
48.0508 Welding Technology/Welder	Welding Engineering Technology, AAS	2	DFT 110	2013 - 2015

Prior Learning Assessment

Students may receive academic credit for prior learning enabling them to begin college work at advanced levels and shorten the time required to obtain degrees, diplomas or certificates. Credit for prior learning may be granted by any of the following methods: transfer credit, courses taken at area career and technology centers, College Level Examination Program, credit by examination, and credit for experiential learning.

Credit can be granted only for those courses which are listed in the WCCC catalog. The courses must meet the requirements of the program in which the student is enrolled. Credits obtained for prior learning are recorded with a grade of CR and are not used in the computation of grade point average. These credits are not applied to VA benefits, Selective Service deferment, Social Security benefits or scholastic honors. A maximum of 30 credits may be awarded to students for prior learning.

The award of credit for prior learning is subject to the approval of the appropriate faculty member and dean. Students who are interested in obtaining credit for prior learning can find out more under Future Students and Admissions at wccc.edu. Instructions are listed under Credit for Prior Learning.

Transfer of Credit

Credits earned at other regionally accredited colleges may apply to programs at WCCC as long as the grade is "C" or higher. Students must complete an Application for Admission and a Request for Transfer of Credits to WCCC form, and must have official transcripts sent directly to the WCCC Admissions Office with descriptions of courses to be considered for transfer.

Evaluation and acceptance of credits completed 10 years prior to the transfer request date shall be made at the discretion of the college.

CLEP — College Level Examination Program

The College-Level Examination Program (CLEP) gives you the opportunity to earn college credit for what you already know with qualifying scores on one or more CLEP examinations. These exams test your knowledge of introductory college-level subjects.

A list of acceptable CLEP exams and scores is available at the WCCC Admissions Office. CLEP exam scores must be sent directly to the Admissions Office from the College Entrance Examination Board.

WCCC serves as an official CLEP testing center. Exams are offered by individual appointment only through the Learning Support Services Testing Center.

Appointments and more information about CLEP can be obtained by calling 724-925-4133,

Credit by Examination

Students may demonstrate mastery of WCCC courses and obtain credit by taking examinations except for the following:

1) developmental courses
2) a course previously completed
3) a course which is a prerequisite for a course previously completed
4) a course currently registered for

To apply, students must complete the Petition for Credit by Examination form which is available in the division offices and at the Student Information Center.

A $30 fee is charged for each exam. Passing the exam is recorded on the transcript with CR. Failure to pass the exam is not recorded. Credit by exam may be attempted only once per course.

Credit for Career & Technology Center Courses

Students may receive credit for approved occupational courses completed at area career and technology centers. Contact the Admissions Office for a list of approved courses.

Advanced Placement Examinations

Credit may be awarded to students who attain a score of three or higher on the College Board Advanced Placement Examination. Students must complete a Request for Transfer of Credits to WCCC Form and must have official Advanced Placement Examination scores sent directly to the WCCC Admissions Office to considered for credit.

Credit for Military Training

Credit may be awarded to students who take the Defense Activity for Nontraditional Education Support (DANTES) exam for skills acquired during military service. Also, military courses may be submitted for review on an individual basis by submitting a Joint Services Transcript. Credit is normally awarded based upon the recommendations of the American Council on Education.

Portfolio Development

Those who believe that they have acquired college level competencies through life and work experience may seek credit through portfolio development. Students are required to develop written documents which describe their competencies and relate them to WCCC courses.

The award of credit is based upon assessment of the student portfolio. A maximum of 21 semester hours of credit for experiential learning may be applied to associate degree graduation requirements. A $125 fee is charged for assessment of each course. See your advisor for further information. Portfolios are managed electronically through a statewide system called College Credit Fast Track. The system can be accessed through the WCCC website or directly at www.ccfasttrack.org.

Placement Assessment

All students are required to attend a Placement Assessment and Educational Planning Session to evaluate placement assessment scores, high school or GED transcript(s), and SAT/ACT scores (if submitted). These are used to determine appropriate freshman courses, pursue developmental course work prior to taking other credit courses, or consider noncredit academic preparation before enrolling in credit course offerings. The Placement Assessment and Educational Planning Session is required of full-time and part-time degree-seeking students, visiting high school students, some visiting college students, and non-degree seeking students upon completion of 12 credit hours.

Students who have an associate or bachelor's degree from an accredited community college or university may be exempt upon receipt of college transcripts. Visiting college students or transfer students may also be exempted upon receipt of college transcripts that validate satisfactory completion of prerequisites in reading, composition and mathematics. Also, SAT or ACT scores may exempt students from the Accuplacer assessment upon receipt of high school transcripts. Applicants for nursing and other allied health programs may be required to complete the Accuplacer regardless of degrees completed.

New part-time students who do not plan to pursue a degree or diploma are not required to take the Accuplacer. However, the assessment is required prior to enrolling in mathematics or English courses and any course with a prerequisite of ENG 095. Furthermore, students not seeking a degree are required to take the Accuplacer assessment after the completion of 12 credits in order to continue their enrollment.

Call the Placement Assessment Office at the Youngwood campus at 724-925-6893 or your nearest WCCC center to schedule the Accuplacer. There is no fee for the assessment.

Registration

Registration begins approximately April 1 for the fall sessions, November 1 for the spring sessions and December 1 for the summer sessions. Class schedules can be viewed online at wccc.edu.

New students who have completed the Application for Admission will receive a letter from the college explaining the placement testing, advising and registration procedures. Counselors are available to assist students in planning course work for the first semester.

Students should become familiar with the required courses for their programs of study found in this catalog on pages 39-215.

Students intending to transfer should consult the catalog of the college they wish to attend or, if possible, consult with a counselor at that college. Transfer students may also receive assistance from a WCCC counselor and/or use materials in the transfer library in the Student Services Success Center.

All students, new and returning, have several opportunities to register for classes and receive academic advising. Students may register by phone or in person at the Student Services Success Center. Returning students may also register online at wccc.edu. Telephone registrations are accepted from 8 a.m. to 5 p.m., Monday through Friday. Students may register in-person from 8 a.m. to 7 p.m. Monday through Thursday and 8 a.m to 5 p.m., Friday. Registration procedures are printed in all the class schedules.

Priority Registration for Veteran Students

Act 46 of 2014 requires public institutions of higher education in Pennsylvania to provide veteran students, as defined in the Act, with preference in course scheduling. Non-compliance may be reported to the Pennsylvania Department of Education by submitting the Higher Education Student Complaint form found at www.education.state.pa.us *(Note: Act 46 applies to veteran students admitted to credit courses and programs offered at the institution).*

For purposes of this policy, a veteran student is defined as an individual who:

- Served in the United States Armed Forces, including a reserve component and National Guard and was discharged/released from service under conditions other than dishonorable
- Has been admitted to Westmoreland County Community College
- Resides in Pennsylvania while attending Westmoreland County Community College

Veteran students who have met all other registration requirements will be given course scheduling preference. Course scheduling preference means that veteran students are permitted to register for classes prior to the regular registration periods as published in the Academic Calendar.

Eligibility of veteran students for course scheduling preference will be identified through college database records. Veteran students must verify status by submitting documentation to the WCCC Registrar. Documentation may be either a DD-214 form or NGB-22 form which needs to be submitted one-time only.

Continuing veteran students who are eligible for course scheduling preference will be made aware of the earlier registration time through an email and the MyWCCC student portal; no additional action must be taken by the veteran student.

New veteran students are offered course scheduling preference through participation in new student orientation session; prospective students are apprised of course scheduling preference through email communication and the college portal. Course registration is required and offered one week prior to early advising for returning students each semester.

Interested veterans should contact Janice T. Grabowski, WCCC director of Admissions/Registrar, at 724-925-4123 or grabowskij@wccc.edu; or Wendy Seman, Financial Aid assistant, at 724-925-4056 or semanw@wccc.edu.

Developmental Education

Roughly three-quarters of the students who come to WCCC qualify for developmental courses based on placement testing results. These courses in reading, writing and mathematics are specifically designed to prepare students for success in their academic careers. Students may qualify for one to three development courses per semester for one or two semesters. While developmental courses serve as prerequisites, they are not applied to degree requirements. Those students who actively participate in the developmental program are more likely to succeed and complete their course of study.

Personal Development Courses

First-time, full-time students who place into one or more developmental courses are required to take those courses and take PDV 160 (Strategies for Academic Success). This is a one-credit course designed to help students succeed in college by exploring such topics as time management, note taking, study habits, goal setting and college resources.

Auditing Courses

Auditing is the practice of registering for a course, paying the associated tuition and fees, and waiving the receipt of credit and a letter grade.

Students may audit a course with the approval of the instructor. Forms for this purpose are available in the Student Services Success Center and must be submitted no later than the end of the second week of a semester. Those currently receiving financial aid should contact the Financial Aid Office before changing a course from credit to audit. Courses taken for audit are not included in determining academic load for veteran certification or eligibility for financial aid. Course audits are indicated on student transcripts with the designation "AU."

Cross Registration

The college has cross-registration arrangements with the University of Pittsburgh at Greensburg (UPG) and Seton Hill University (SHU). This allows WCCC full-time students to register for courses at these institutions and for students at UPG and SHU to register for courses at WCCC. The student must be enrolled full-time for a minimum of 12 credits and in good academic standing. A student may cross-register only for courses which meet degree requirements and which are approved by the institution from which the student will graduate. Students must complete a Cross Registration form available in the WCCC Admissions Office and obtain appropriate signatures for approval.

Change of Schedule

Students are fully responsible for completing adds and drops according to instructions and making certain that changes in their schedules will not adversely affect their progress toward graduation.

Students may not add/register/switch any course after the course has met for the first time. Students should review their class schedule and make any revisions before the start of the semester.

Students should note that adding courses may increase the amount due for tuition and fees, while dropping courses may make them eligible for refunds. Those receiving financial aid should contact the Financial Aid Office to determine if their aid award is affected by the change in their schedule.

Change of Major

Students who wish to change their major program must complete a Change of Major Form in the Student Information Center. Course substitutions approved under the former major must be resubmitted for approval in the new program of study.

Withdrawal From Courses

Withdrawal from a course becomes official only after a Student Withdrawal Request is processed by the Records Office. Students who wish to withdraw from a course or courses should request Student Withdrawal Request forms at the Student Services Success Center in Founders Hall. Forms are also available at the education centers.

- Students who drop classes within the first three weeks of the semester will be dropped from the course and no record of the course will appear on the transcript.
- Students who officially withdraw from a course after the third week but prior to the last day of the seventh week of the semester will receive a "W" on the transcript indicating withdrawal from the course.
- Students who withdraw after the seventh week but before the thirteenth week of the semester will receive a W or F grade as determined by the instructor.
- Withdrawals are not permitted after the thirteenth week.
- Students who initially attend class but, due to poor attendance and/or participation, are not making satisfactory progress, may be recommended for withdrawal by the instructor after the third week and prior to the end of the twelfth week of the semester. Students recommended for withdrawal are notified by the Records Office and receive a "W" on the transcript.

Military Withdrawal

Whenever any member of the PA National Guard or other reserve component of the armed forces of the United States shall be called or ordered to active duty, other than active duty for training, including, in case of members of the PA National Guard, active State duty, the college shall grant the member or member's spouse a military leave or absence from their education. The member or member's spouse shall receive an "M" (Military Withdrawal) on their transcript for all classes they are unable to complete due to a military leave of absence.

WCCC Graduate Transfers

Westmoreland County Community College maintains transfer articulation agreements with many four-year colleges and universities in the region. The agreements denote program requirements and course equivalencies to facilitate student transfer to senior institutions. In consultation with a counselor, students can use the agreements as guides to plan a program of studies most appropriate for transfer to a senior institution.WCCC graduates have successfully transferred to many colleges and universities.

Articulation Agreements

An articulation agreement written between two institutions allows course credit at one college/university to be accepted or transferred and applied toward a degree or certificate at another college/university. Admission into a particular major could have a GPA requirement higher than admission to the college.

- Pennsylvania State System of Higher Education Universities (PaTRAC)
- American Public University
- Art Institute of Pittsburgh
- Bellevue University
- Bethany College
- Burlington College
- California University of Pennsylvania
- Carlow University
- Chatham University
- Clarion University of Pennsylvania
- Concordia University
- Duquesne University
- Edinboro University
- Franklin University
- Geneva College
- Immaculata University
- Indiana University of Pennsylvania
- Kaplan University
- LaRoche College
- Pennsylvania College of Technology
- Pennsylvania State University/Fayette
- Pennsylvania State University/Greater Allegheny
- Pennsylvania State University/New Kensington
- University of Pittsburgh/Oakland
- University of Pittsburgh/Greensburg
- Point Park University
- Potomac College
- Robert Morris University
- Saint Joseph University
- Saint Vincent College
- Seton Hill University
- Slippery Rock University of Pennsylvania
- Stark State College
- Strayer University
- University of Phoenix
- West Liberty University

Course-to-Course Agreements

Course-to-course articulation is when one college or university compares the content of courses to the content of courses at another college or university and determines transferability. Students use course articulation to ensure that the courses they complete will not have to be repeated at the institution to which they are transferring. Course articulation is usually completed when a student actually decides to transfer and may or may not be explained in a written document between the two institutions.

- Pennsylvania State System of Higher Education Universities (PaTRAC)
  - Bloomsburg
  - California
  - Carlow University
  - Cheney
  - Clarion
  - East Stroudsburg
  - Edinboro
  - Indiana
  - Kutztown
  - Lackawanna University
  - Lock Haven
  - Mansfield
  - Millersville
  - Neumann University
  - Pennsylvania College of Technology
  - Saint Francis University
  - Shippensburg
  - Slippery Rock
  - West Chester
- Pennsylvania State University
- University of Pittsburgh
- University of Pittsburgh/Bradford
- University of Pittsburgh/Greensburg
- University of Pittsburgh/Johnstown
- Duquesne University
- Gannon University
- Geneva College
- Grove City College
- LaRoche College
- Point Park College
- Saint Vincent College
- Seton Hill University
- Washington and Jefferson College
- West Virginia University

Degree Completion Programs

Some colleges and universities have programs that require an associate of arts or associate of applied science degree prior to admission. These programs guarantee junior status to associate degree holders and require two years of additional study. These programs are sometimes referred to as capstone programs. Degree completion programs do not necessarily require students to obtain a bachelor degree in the same field as their associate degree.

Program-to-Program Agreements

Pennsylvania's Public School Code of 1949 requires the colleges and universities that participate in the commonwealth's Statewide College Credit Transfer System to develop agreements that will allow students to transfer full associate of arts (A.A.) degrees and the associate of applied science (A.A.S.) degree in PreK-Grade–4 Education, into parallel bachelor's degree programs at the participating institutions with junior standing. Westmoreland County Community College has also negotiated program-to-program agreements with several additional universities listed below. These agreements allow WCCC graduates to move to a senior institution and have all their credits transfer and be counted toward graduation.

- Pennsylvania State Systems of Higher Education Universities (PaTRAC) (A.A.S.) (PreK-Grade–4 Education)
  - Bloomsburg
  - California
  - Carlow University
  - Cheney
  - Clarion
  - East Stroudsburg
  - Edinboro
  - Indiana
  - Kutztown
  - Lackawanna University
  - Lock Haven
  - Mansfield
  - Millersville
  - Neumann University
  - Pennsylvania College of Technology
  - Saint Francis University
  - Shippensburg
  - Slippery Rock
  - West Chester

The colleges and universities listed below have degree completion program agreements that require students to complete an associate of arts, associate of fine arts or an associate of applied science degree at WCCC.

- Art Institute of Pittsburgh
- Bellevue University
- California University of Pennsylvania
- Concordia University
- Duquesne University
- Franklin University
- Geneva College
- Immaculata University
- Kaplan University
- LaRoche College
- Pennsylvania College of Technology
- Point Park University
- Potomac College
- Robert Morris University
- Saint Vincent College
- Seton Hill University
- Stark State College
- Strayer University
- University of Phoenix
- West Liberty University

Reverse Transfer Agreements

The reverse transfer agreement is designed to support students who earned college-level credits toward an associate degree while enrolled at WCCC, but did not complete sufficient credits to earn their community college certificate, diploma or degree.

Reverse transfer agreements streamline the process of transferring credits earned by students working toward their bachelor's degree back to WCCC to be evaluated for credit toward completion of certificate, diploma or associate degree.

- California University of Pennsylvania
- Indiana University of Pennsylvania
- Saint Vincent College
- University of Phoenix

Tuition and Course Fees

Tuition and fees listed in this catalog are subject to change by the Board of Trustees. When changes are made, notice will be given as far in advance as possible.

1. Tuition
   a. Tuition per credit: 1-11 credits, 19 or more credits
   Westmoreland County Residents . . . . . $122 per credit
   Out-of-County Residents . . . . . $244 per credit
   Out-of-State Residents . . . . . $366 per credit
   b. Flat Rate: 12-18 credits
   Westmoreland County Residents $1,830
   Out-of-County Residents $3,660
   Out-of-State Residents $5,490
2. General Fee . . . . . $ 39 per credit
3. Capital Fee
   Out-of-County Residents . . . . $ 6 per credit
   Out-of-State Residents . . . . . $ 6 per credit
4. Lab Fees *(Most laboratory courses have a fee. The fees range from $10 to $25)* . . . . . $ varies

Other Fees

1. Books & Supplies - These costs vary according to individual courses.
2. Credit by exam, per course. . . . . $ 30
3. Assessment of Experiential Learning, per course . . . . . $ 75
4. Returned check fee. . . . . $ 25
   This fee is assessed if you pay by check and your bank returns the check to the college for any reason.

Payment Policy

The college accepts payment in the form of check and MasterCard or Visa. Payment by check or credit card may be made at the Student Services Success Center, Room 130, Founders Hall, Youngwood campus. Checks are also accepted at the education centers. Check and credit card payments may also be made by mail. In addition, credit card payments may be made by telephone or online. Checks should be made payable to WCCC, and the student's social security number or student ID number must be written on the check. You remain obligated for all tuition and fees unless you officially drop during the refund period.

Students cannot register for classes, receive grade reports, obtain transcripts, or graduate until all financial obligations to the college have been satisfied. If payment is not received by the due dates established each term, your registration is subject to deletion.

Refund Policy

All refunds to students or payers are calculated from the official starting date of the course. The number of weeks to determine refunds is calculated by counting the actual days from the starting date of the course and not by counting the course meeting dates. All refund checks will be mailed to students and will not be held for pick-up.

For courses meeting for one week or less — If you officially drop before the course starts, you may be eligible to receive a 100% refund of tuition and fees. There are no refunds after that date.

For courses two-weeks through four-weeks long — If you officially drop through the first three days of the course, you may be eligible to receive a 100% refund of tuition and fees. There are no refunds after that date.

For courses five-weeks through nine-weeks long — If you officially drop through the first week of the course, you may be eligible to receive a 100% refund of tuition and fees. There are no refunds after the first week of the course.

For courses of 10-weeks through 19-weeks long — If you officially drop through the second week of the course, you may be eligible to receive a 100% refund of tuition and fees. There are no refunds after the second week of the course.

For courses 20-weeks through 29-weeks long — If you officially drop through the second week of the course, you may be eligible to receive a 100% refund of tuition and fees. If you officially drop during the third or fourth week of the course, you may be eligible to receive a 60% refund of tuition. There are no refunds after the fourth week of the course.

For courses of 30-weeks or longer — If you officially drop through the third week of the course, you may be eligible to receive a 100% refund of tuition and fees. If you officially drop during the fourth, fifth or sixth week of the course, you may be eligible to receive a 60% refund of tuition. There are no refunds after the sixth week of the course.

You must contact the Registration Center during the refund period to officially drop a course. If you do not officially drop, you remain obligated for all tuition and fees.

Tuition Payment Plan

Offered by WCCC in conjunction with Higher One, the Tuition Payment Plan lets students pay educational expenses in five payments. The payment plan is offered during the fall and spring semesters only. The payment plan is not offered for Continuing Education classes. **Enrollment in the Tuition Payment Plan must be finalized by the payment due date on your billing statement.** For more information, visit tuitionpaymentplan.com/wccc or call 1-800-635-0120. **Higher One assesses an enrollment fee for this service.**

Expenses and Financial Aid

Financial Aid

Financial aid is a grant, scholarship, loan or employment opportunity which assists students with their educational expenses. Most financial aid is awarded on the basis of financial need, or the difference between the cost of education (tuition, fees, books, transportation, etc.), and the amount parents and/or students can contribute toward these expenses.

WCCC participates in several state and federal financial aid programs. (See the chart on page 16.)

Basic Eligibility Criteria

In order to be eligible for many forms of financial aid a student must:

- Be a citizen or eligible noncitizen of the United States.
- Be enrolled in a degree, diploma or certificate program (audited courses do not count toward enrollment status and registered classes must count toward program of study).
- Have a high school diploma, or a recognized equivalent such as a General Education Development (GED) certificate, or completed a high school education in a home school setting approved under state law.
- Be registered with Selective Service if a male.
- Be in good academic standing and maintain satisfactory progress according to college, state, VA and federal regulations.

How to Apply

1. Complete the Free Application for Federal Student Aid (FAFSA) online at www.fafsa.ed.gov as soon as possible after January 1. In order for the Financial Aid Office to receive the application information from the processor, students must include WCCC as one of the colleges they plan to attend. WCCC's Title IV code is 010176.
2. Submit tax transcripts, corrections and any other requested documentation to the Financial Aid Office in a timely manner.
3. To ensure timely consideration, students should have paperwork on file in the Financial Aid Office by April 15 for the upcoming fall term.

The FAFSA is available online at www.fafsa.ed.gov. The loan application is available online at studentloans.gov.

Satisfactory Academic Progress for Financial Aid

To continue to receive financial aid from the government-funded programs listed below, students must maintain financial eligibility and satisfactory academic progress in their courses of study according to the standards and practices of the granting agency and the college.

The standards include a quantitative measure (minimum standards of completion) as well as qualitative measure (grade point average). Freshman students after attempting 24 credits must maintain a 1.7 grade point average or may lose financial aid for future semesters. Sophomore students after attempting more than 25 credits must maintain a 2.0 grade point average or may lose financial aid for future semesters.

The minimum standards of completion are as follows:

Pell Grant and Federal College Work-Study — Students must successfully complete 70% of the credits they attempt.

PHEAA Grant — Students must successfully complete at least 24 credits per academic year if full-time and 12 credits if part-time.

Direct Loan/PLUS — Students must successfully complete 70% of the credits attempted per year. In addition, they must successfully complete 30 credits each year in order to qualify for level two in the loan program. Website to apply is studentloans.gov.

Academic progress will be reviewed each term to determine future eligibility. Eligibility will be based on a student's past academic performance at the college. Academic performance is reviewed after each semester or loan term. Courses with an I (incomplete), W (withdrawal) or an F grade will be considered as courses attempted but not successfully completed. Financial aid may be used for repeated courses; however, only once for a previously passed class (grade of "D" or better).

Financial aid is awarded for courses that count toward a student's degree, diploma or certificate. Students who complete more than 150% of their original program credits will have their aid eligibility reviewed. Aid may not continue to pay for future programs. Students will have to complete an appeal request, and have it approved to get aid. For the complete policy visit wccc.edu/sap.

Return of Title IV Student Aid Requirements for Students Who Withdraw from WCCC

Up through the 60 percent point in each payment period of enrollment, a pro rated schedule is used to determine the amount of Title IV funds the student has earned at the time of the withdrawal. After the 60 percent point in the payment period or period of enrollment, a student has earned 100 percent of the Title IV funds (Federal Pell Grant, Federal Stafford Subsidized and Unsubsidized Loans, Federal PLUS loan and Federal Nursing Loan).

In accordance with federal regulations, students who withdraw on or before the 60 percent of the award period will be required to repay the unearned portion of the Federal Title IV student aid program. The student must complete a withdrawal form that is available from the Records Office.

An example: Student totally withdraws at the end of the fourth week of a 16-week term. The school's refund policy ends at the second week of classes. The student's tuition for the term is $2,000 and the student had a Pell Grant for $2,400. Since the student was in school for four weeks, the student earned 25% of their aid, 25% x $2,400, which is $600. Therefore the student's unearned portion of the Pell Grant must be returned to the grant and the student would owe the balance of the school's tuition, $2,000 - $600 (earned aid) is, $1,400 to the school. Students who have questions about dropping classes should always check with the Financial Aid office for clarification.

FINANCIAL AID PROGRAMS

TYPE OF AID	SOURCE	AWARD AMOUNTS	WHO IS ELIGIBLE TO APPLY	HOW TO APPLY	WHEN TO APPLY
Pell Grant	Federal Govt.	Yearly award may range from $400 to $5,500 as determined by a federal formula. Based on financial need.	Any student intending to enroll in a credit course at WCCC and must have a high school diploma or GED to qualify	Complete Free Application for Federal Student Aid. Must reapply each year. www.fafsa.ed.gov	After January 1/ at least 2 months before semester
PHEAA Grants PA Higher Educ. Assistance Agency	State of PA	Range from $200 to $2,400 per year. Amount determined by state formula. Based on financial need.	Full-time or part-time (at least 6 credits) student enrolled in two-year associate degree program, a U.S. citizen, PA resident, high school grad or GED recipient	Complete Free Application for Federal Student Aid. Must reapply each year.	By August 1
Direct Loan	Federal Govt.	Base amounts, $3,500 first-year student and $4,500 second-year student.	Student must be enrolled at least half-time (6 credits) and a U.S. citizen Website: studentloans.gov	Complete Free Application for Federal Student Aid and Master Promissory Note. See wccc.edu.	3 months before semester
PLUS (Parents Loan for Undergraduate Students)	Federal Govt.	Up to cost of education minus other aid. Student must be a "dependent."	Students enrolled at least half-time who pass the the necessary credit approval	Forms available from PHEAA or see wccc.edu	2 months before semester
WCCC Work-Study Program	WCCC	Determined by WCCC Financial Aid Office	Any student enrolled at least half-time (6 credits)	Complete a student employment application	Apply any time
Federal College Work-Study Program	Federal Government	Variable; based on unmet financial need	Any student intending to enroll in a credit course at WCCC	Complete Free Application for Federal Student Aid. Must reapply each year.	Apply any time
State Vocational Rehabilitation Educational Assistance	State & Federal Government	Variable; determined by Office of Vocational Rehabilitation (OVR)	Mentally, physically or emotionally disabled students intending to enroll in a credit course at WCCC	Contact local OVR for application forms	3 months before semester
Scholarships	WCCC Foundation	Variable; see listings on pages 15-19 or contact the WCCC scholarship coordinator, 724-925-4215	Based on criteria of scholarship	Application available in WCCC Financial Aid Office or at wccc.edu	Varies by scholarship; as soon as possible
Veterans Benefits	Veterans Administration	Variable; depends on program	Based on VA program eligibility requirements	Applications available from WCCC Financial Aid Office	2 months before semester

Scholarships

Listed on the following pages are a number of scholarships available at WCCC. Interested students must submit a WCCC Scholarship Application Form. Students may inquire about scholarships at any time, but preference will be given to students who apply by May 1 unless an earlier date is indicated. Application forms are available from the WCCC Financial Aid Office, high school counselors or online at www.wccc.edu. This list is subject to change based on funding available.

ACADEMIC SCHOLARSHIPS

Scholarship	Donor	Amount	Eligibility Criteria
President's	WCCC	• Full tuition and fees for two years - lab fees not included (Westmoreland County graduates) • Half tuition and fees for two years - lab fees not included (graduates from Fayette, Greene and Indiana counties) • Renewable for second year based on 3.0 GPA	• 2014 Westmoreland County high school graduates • 2014 Fayette, Greene and Indiana county high school graduates • Top 10 percent of their class • High school transcript required
Trustees' Meritorious	WCCC	• Full tuition for two years - fees not included (Westmoreland County graduates) • Half tuition for two years - fees not included (graduates from Fayette, Greene and Indiana counties) • Renewable for second year based on 2.5 GPA	• 2014 Westmoreland County high school graduates • 2014 Fayette, Greene and Indiana county high school graduates • Minimum 3.0 GPA • High school transcript required
Phi Theta Kappa Academic Excellence	Phi Theta Kappa Fraternity & Friends	• $500/term	• Academic history • Requires short essay and two letters of recommendation**

GENERAL SCHOLARSHIPS

Scholarship	Donor	Amount	Eligibility Criteria
Adam Eidemiller	Adam Eidemiller, Inc.	• Varies	• Based on financial need*
Allegheny Education	Allegheny Education	• Varies	• Based on financial need*
American Legion Post 446 Honoring America's Veterans	American Legion Post 446	• Varies	• Must be a veteran (w/discharge other than dishonorable) • Based on financial need* • Minimum 2.0 GPA
Boenning & Scattergood	Boenning & Scattergood, Inc.	• Varies	• Based on financial need*
Carlow University	Carlow University	• Varies	• Based on financial need*'
Celli-Flynn Brennan Architects & Planners	Celli-Flynn Brennan Architects & Planners	• Varies	• Based on financial need*
James "Jack" and Maryann Cherubini Scholarship	Jack & Maryann Cherubini	• Varies	• Based on financial need* • Minimum 3.0 GPA
Malvina P. Criner Memorial Endowment	Estate of Malvina P. Criner	• Varies	• Based on financial need*

GENERAL SCHOLARSHIPS *(CONTINUED)*

Scholarship	Donor	Amount	Eligibility Criteria
Deluzio & Company	Deluzio & Company	• Varies	• Based on financial need*
Elliott Company	Elliott Company	• Varies	• Based on financial need*
EMCOR Services - Scalise Industries	EMCOR Services - Scalise Industries	• Varies	• Based on financial need*
First Niagara Bank	First Niagara Bank	• Varies	• Based on financial need*
Gateway Financial Services	Gateway Financial Services	• Varies	• Based on financial need*
Highmark Blue Cross/ Blue Shield	Highmark Blue Cross/Blue Shield	• Varies	• Based on financial need*
Humanitarian Award	WCCC Educational Foundation	• $250/term • Renewable for second year	• Westmoreland County resident • Minimum 3.5 GPA • Short essay stating need required**
International Union of Operating Engineers – Local 66	International Union of Operating Engineers – Local 66	• Varies	• Based on financial need*
ITS Corporation	ITS Corporation	• Varies	• Based on financial need*
Laurel Mountain Traffic Association Scholarship	Laurel Mountain Traffic Association	• Varies	• Based on financial need*
McDowell Associates	McDowell Associates	• Varies	• Based on financial need*
Nikki's 2nd Chance Scholarship	Jennifer Kominsky	• Varies	• Based on financial need* • Full-time student • Preference given to residents of Westmoreland County • Essay required**
Premo Pappafava	General Carbide Corporation	• Varies	• Based on financial need*
Rolling Rock Club	Rolling Rock Club	• Varies	• Based on financial need*
Smail Auto Group	Smail Auto Group	• Varies	• Based on financial need*
The Wright Thing to Do Scholarship	John & Linda Wright	• $250/term	• Full- or part-time student • Must maintain a GPA of 2.5 to receive for the spring award • Preference given to Westmoreland County residents • Based on need
United Association of Plumbers & Pipefitters Award	UA of Plumbers & Pipefitters	• Varies	• Based on financial need*
UPS	UPS	• Varies	• Based on financial need*
Walmart	Walmart	• Varies	• Based on financial need*

SCHOLARSHIPS

SPECIAL CRITERIA SCHOLARSHIPS

Scholarship	Donor	Amount	Eligibility Criteria
Alumni Association	WCCC Alumni Association	• $500/term • Multiple awards	• Full- or part-time student • Preference given to family members of WCCC alumni (state relationship on application)
Scott Brewer Early Child Care Club	Early Childhood Education Club	• Varies • Multiple awards	• Based on financial need* • Used in WCCC Children's Center
Grant E. & Betty J. Cooper	The Estate of Betty J. Cooper	• $250/term	• Must be a graduate of a high school in Mt. Pleasant Township • Must demonstrate financial need*
Dr. Nancy I. Davis	Dr. Nancy I. Davis	• $250/term	• Must be full-time student • Must be enrolled at the WCCC Greene County Center • Based on financial need* • Minimum 2.5 GPA
Delmont-Salem Rotary Club Scholarship	Rotary Club of Delmont-Salem	• $125/term	• Must be enrolled at WCCC-Bushy Run for a minimum of 3 credits • Minimum 2.5 GPA • Preference given to residents of Delmont and Salem Township • Recipient is required to attend Delmont-Salem Rotary meeting at end of semester
Eberly Family Fund	Eberly Family Fund	• $500/term • Multiple awards	• Preference given to Fayette, Washington and Greene county students • Based on financial need*
Eberly Family Fund – Uniontown	Eberly Family Fund	• $500	• Based on financial need* • Minimum 2.5 GPA • Preference given to Fayette County residents • Must attend WCCC-Feyette
Ford Business Machines	Ford Business Machines	• $250	• Preference will be given to Uniontown, Fayette County students • Based on financial need*
Greater Rostraver Chamber of Commerce	Greater Rostraver Chamber of Commerce	• Varies	• Full-time WCCC student • Minimum 2.0 GPA • Resident of Belle Vernon, North Belle Vernon, Forward Township, Elizabeth Township, Washington Township, Perryopolis & surrounding municipalities of Allegheny, Westmoreland and Fayette counties
Dr. Martin Luther King, Jr. Meritorious	WCCC Black Awareness Committee	• Full-time $250/term • Part-time $125/term	• African-American student • Based on academic history, community service and financial need* • Requires short essay**
McFeely Rogers Foundation	McFeely Rogers Foundation	• Varies	• Based on financial need* • Must be enrolled at WCCC-Latrobe
Never Enough Boutique	Never Enough Boutique & Friends	• $750/term	• Women who need training to enter or re-enter the workforce • Based on financial need* • Requires short essay stating need**

SPECIAL CRITERIA SCHOLARSHIPS *(CONTINUED)*

Scholarship	Donor	Amount	Eligibility Criteria
New Alexandria Lions Club	New Alexandria Lions Club	• $750	• Based on financial need* • Minimum 3.0 GPA • Preference will be given to residents of the New Alexandria Lions Club service area
New Beginnings	Dr. Steven C. & Karen G. Ender & Friends	• $250/term	• Must be a first-time student age 24 or older • Must be enrolled at least part-time (6 cr.) • Based on financial need*
Oliver K. Painter Memorial	Oliver K. Painter	• $250/term	• Must be a Mt. Pleasant or Southmoreland high school senior (awarded on a rotating basis)
Pennsylvania Governor's Conference for Women	WCCC Educational Foundation	• Varies	• Minimum 3.0 GPA • Traditional student • First semester • Must be female • Must complete volunteer work or community activism • Short essay describing leadership experience** • Based on financial need*
Reschini Agency, Inc.	Reschini Foundation	• Full tuition • Up to $2,500/semester	• Must be a family member of a Reschini employee (state relationship on application) • Preference given to employees of the Reschini Agency, Inc. • Based on financial need*
S & T Wealth Management Supporting Higher Education	S & T Bank	• Varies	• Must be a full- or part-time student • Preference given to residents of the S & T Bank Market: Allegheny, Armstrong, Blair, Butler, Cambria, Clarion, Clearfield,Indiana, Jefferson, • Based on financial need*
Sage's Army Scholarship	Sage's Army, Inc.	• $1,000	• Based on financial need* • Minimum 2.5 GPA • Must be a Pathways program student • Must submit an essay**
Slickville Lions Club Scholarship	Slickville Lions Club	• Varies	• Based on financial need* • Must have a family member in the Slickville Lions Club or reside in the Slickville Lions Club service area
Paul R. & Anne F. Smiy Family Foundation Scholarship	Estate of Paul R. Smiy	• Varies	• Based on financial need* • Minimum 2.5 GPA • Preference will be given to Jeannette, Norwin, Penn Trafford residents
Madeleine Case Sorber Memorial Scholarship	Mary Linda Armacost	• $2,000 • Multiple Awards	• Based on financial need* • Minimum 2.5 GPA • Must be female • African American student • Preference with be given to Jeannette residents from Jeannette High School

SCHOLARSHIPS

SPECIAL CRITERIA SCHOLARSHIPS *(CONTINUED)*

Scholarship	Donor	Amount	Eligibility Criteria
Youngwood Lions	Youngwood Lions	• $225/term	• Resident of New Stanton-Youngwood area • Must attend Lions Club meeting • Based on financial need* • Given to second-year students • Minimum 2.5 GPA
Windy Ridge Retreat Center/Allegheny Power/Greene Center Scholarship	Windy Ridge Retreat Center	• $500/term • Multiple awards	• Students must be enrolled at the WCCC Greene County Center and remain enrolled there • 3 years immediate past residency in Greene County (will need proof) • Candidate for an AAS in the following areas of study - Business, Education, Medical, Sciences, Information Technology • Must maintain a 2.5 to receive further awards

PROGRAM SPECIFIC SCHOLARSHPS

Scholarship	Donor	Amount	Eligibility Criteria
Arts Janessa Fleming Memorial Scholarship	Fleming Family & Friends	• $1,000	• Based on financial need* • Minimum 2.5 GPA • Must be enrolled in an Arts program • Preference will be given to students with disabilities
Business First Commonwealth Bank	First Commonwealth Bank	• Varies	• Minimum 2.5 GPA • Based on financial need * • Must be enrolled in a Business program
Omnova Solutions	Omnnova Solutions, Inc.	• Varies	• Based on financial need* • Must be enrolled in a Business program
Dr. Thomas Lloyd Memorial	Friends of Dr. Thomas Lloyd	• $100/term	• Must have completed 12 credits • Awarded to the applicant with highest GPA • Must be enrolled in a Business Management program
William F. and Marjorie S. Ferrier Scholarship	Ferrier Family Legacy Fund at CFWC	• $1,500	• Based on financial need* • Minimum 2.5 GPA • Must be enrolled in a Business program
Career Technology Hamill Career Technology	Hamill Mfg.	• $750/term	• Must graduate from a career-technical school • Must be enrolled in a SOAR Program • Minimum of 2.0 GPA • Based on financial need*
L. Robert Kimball & Associates, Inc.	L. Robert Kimball & Associates, Inc.	• Varies	• Based on financial need* • Must be enrolled in a Career Technology .program
The Williams Foundation	Williams Foundation	• $500/term	• Based on financial need* • Must be enrolled in a SOAR program

PROGRAM SPECIFIC SCHOLARSHIPS *(CONTINUED)*

Scholarship	Donor	Amount	Eligibility Criteria
Criminal Justice			
E.E. "Duck" Cooley	WCCC Criminal Justice Fraternity	• $200/spring term	• Second semester • Minimum 3.0 GPA • Active member of CRJ Fraternity
Eli Award	WCCC Criminal Justice Fraternity	• $200/fall term	• Returning student • Minimum 3.0 GPA • Active member of CRJ Fraternity
Cecil Yates Memorial	Friends & relatives of Cecil Yates	• $200/term	• Returning student • Based on financial need* • Must be enrolled in Criminal Justice
Corporal Jason Alan Shaffer Memorial	Family & friends of Corporal Shaffer	• $125/term	• Criminal Justice major • Derry Area High School graduate preferred • Minimum 2.0 GPA • Based on financial need*
CRJ Hall of Fame Scholarship honoring Cyril Wecht	Proceeds from the CRJ Hall of Fame dinner	• $500	• Based on financial need* • Minimum 2.5 GPA • Must be enrolled in Criminal Justice or law enforcement program
Culinary Arts/Hospitality			
American Culinary Federation	ACF Laurel Highlands Chapter	• $500/semester	• Junior member of the ACF Laurel Highlands Chapter • 10 credits or more in the major • Based on academic achievement • Must be enrolled in the Culinary Arts or Baking & Pastry Apprenticeship program
Chef Regis Holden	Regis Holden	• $250/term	• Full time student • Minimum 2.5 GPA • Based on financial need * • Must be enrolled in the Culinary Arts Apprenticeship or Non-Apprenticeship associate degree program
Chef Richard Rosendale Scholarship	Chef Richard Rosendale	• $500	• Full-time student • Must have at least a 2.5 GPA • Based on financial need* • Must be enrolled in the Culinary Arts Apprenticeship or Non-Apprenticeship associate degree program
Donald D. Mateer Foundation	Donald D. Mateer Foundation	• Varies • Renewable second year	• New student • Based on financial need* • Minimum 2.75 GPA to renew
Center for Culinary Arts/Hospitality Hall of Fame Scholarship honoring Chef Robert E. Boyd	Culinary Hall of Fame	• $500	• Full-time student • Must have at least a 2.5 GPA • Based on financial need* • Must be enrolled in the Culinary Arts Apprenticeship or Non-Apprenticeship associate degree program

PROGRAM SPECIFIC SCHOLARSHIPS *(CONTINUED)*

Scholarship	Donor	Amount	Eligibility Criteria
Culinary Arts/Hospitality (continued)			
Center for Culinary Arts/Hospitality Hall of Fame Scholarship honoring Chef Chris Cwierz	Culinary Hall of Fame	• $500	• Full-time student • Must have at least a 2.5 GPA • Based on financial need* • Must be enrolled in the Culinary Arts Apprenticeship or Non-Apprenticeship associate degree program
Seven Springs	Seven Springs	• Varies	• Based on financial need*
Nemacolin Woodlands Resort	Nemacolin Woodlands Resort	• Varies • Multiple Awards	• Must be enrolled in the Nemacolin Woodlands Program • Based on financial need*
Wiley Publishers Book	Wiley Publishers	• Books for one year	• Culinary student enrolled in the Nemacolin Woodlands program • Based on financial need*
Chef Anthony Braun Scholarship	Chef Anthony Braun	• $500	• Based on financial need* • Full-time student • Minimum 2.5 GPA • Must be enrolled in a Culinary Arts Apprenticeship or Non-Apprenticeship program
Christopher S. Walters Memorial Scholarship	Amie Walters	• $500	• Based on financial need* • Full-time student • Minimum 2.5 GPA • Must be enrolled in a Culinary Arts Apprenticeship or Non-Apprenticeship program
Ebert Ulery Jr. Culinary Scholarship	Chef Robert Boyd	• $1,000	• Based on financial need* • Full-time student • Minimum 2.5 GPA • Must be enrolled in a Culinary Arts Apprenticeship or Non-Apprenticeship program
June Smith Millison Scholarship	Mr. & Mrs. Wayne Smith	• $1,200	• Based on financial need* • Full-time student • Must be a returning student, in the second year of study • Minimum 2.5 GPA • Must be enrolled in a Culinary Arts Apprenticeship or Non-Apprenticeship program
Ruthie Diffenderfer Memorial Scholarship	Diffenderfer Family & Friends	• Varies	• Based on financial need* • Full-time student • Minimum 2.5 GPA • Must be enrolled in a Culinary Arts Apprenticeship or Non-Apprenticeship program
Dental Program Susan "Abby" Belli Memorial Scholarship	Husband, Family and Friends of Susan "Abby" Belli	• Equipment Costs	• Based on fiancial need* • Nontraditional student • Dental Hygiene student

PROGRAM SPECIFIC SCHOLARSHIPS *(CONTINUED)*

Scholarship	Donor	Amount	Eligibility Criteria
Diagnostic Medical Sonography			
Un-LOCKE Your Success in DMS	Laura & Bobby Locke	•$250/term	• Full- or part-time student • Minimum 2.5 GPA • Based on financial need* • Must be enrolled in the Diagnostic Medical Sonography program
Fine Arts			
John Pollins Memorial Scholarship	Anonymous	• Varies	• Currently enrolled in the Associate of Fine Arts degree program • Must maintain a 3.0 GPA • Must register for Touchstone class • Essay required**
AFA Visual Arts Fund	Anonymous	• Varies	• Must be enrolled in the WCCC Associate ofFine Arts program • Scholarship may be used for books and fees • Essay required**
Fire Science Technology			
George L. Wilson Co. Scholarship to benefit Washington Twp. V.F.C. #102	George L. Wilson Company	• Varies • Multiple Awards	• Based on financial need* • Must be enrolled in a Fire Science program • Minimum GPA 3.0 • Must be an approved and active member ofWTVFC #102 with at least two years experience
Graphic Design			
Gregory Hricenak Graphic Design	Anonymous	• Varies	• Minimum 3.2 GPA
Human Services			
Jack Wagner Memorial Human Services Scholarship	Joyce Clohessy	• $500 • Two awards	• Full- or part-time student • Must maintain a GPA of 3.0 • Based on financial need* • One award for a current WCCC student • One award for a transfer student accepted into a program for human services or social work • Student must demonstrate participation in community service • Preference given to students active in the Human Services Club • Essay required**
Math or Science Major			
Dr. Daniel Krezenski	Friends of Dr. Daniel Krezenski	• $125/term	• Full-time student • Based on academic history • Based on financial need*
Natural Gas			
Chesapeake Energy	Chesapeake Energy Corp.	• Varies	• Based on financial need* • Must be enrolled in a Natural Gas Industry program of study

SCHOLARSHIPS

PROGRAM SPECIFIC SCHOLARSHIPS *(CONTINUED)*

Scholarship	Donor	Amount	Eligibility Criteria
Natural Gas (continued)			
American Gas Association Scholarship Fund	American Gas Association	• $6,000 • Multiple awards	• Based on financial need* • Full-time student, second semester • Minimum 2.5 GPA • Must be enrolled in Natural Gas, Petroleum Technology or Welding
XTO Energy Scholarship	XTO Energy	• Varies • Multiple awards	• Based on financial need* • Must be enrolled in a Natural Gas/Oil Industry program of study
Machine Technology Alyssa Ryan Lang	General Nuclear Corporation	• $1,000	• Must be enrolled in the Machine Technology program • Must be a Westmoreland County resident • Must demonstrate financial need* • Minimum 3.0 GPA
Nursing Roylene Penska	Family of Roylene Penska	• $250/term	• Returning student • Minimum 3.0 GPA • Must be a Westmoreland County resident • Must be enrolled in the Nursing program
Iva Jones King Memorial	Ed & Priscilla King Hogan	• Two awards • $250/term	• Based on financial need* • Minimum 3.0 GPA • Must be enrolled in the Nursing program • Preference given to Yough or Belle Vernon residents
Bridget McGrath Memorial	Family & Friends of the McGrath Family	• $500/term	• Full-time Nursing student • Must maintain a minimum 2.5 GPA • Must be employed a minimum of 20 hours a week • Essay required**
Latrobe Area Hospital Charitable Foundation	Latrobe Hospital Charitable Found.	• Varies	• Must be enrolled in the Nursing program • Based on financial need*
Excela Health Scholarship	Excela Health	• Varies	• Must be enrolled in the Nursing program • Based on financial need*
Aimee Rusinko Kakos Evening & Weekend Nursing Scholarship	Aimee Rusinko Kakos	• Multiple	• Returning student, second semester, second year • Must be enrolled in the Evening & Weekend Nursing program • Based on financial need*
The Thorne Group	The Thorne Group	• Varies	• Based on fiancial need* • Greensburg-Salem high school graduate • Must be enrolled in the Nursing program

PROGRAM SPECIFIC SCHOLARSHIPS *(CONTINUED)*

Scholarship	Donor	Amount	Eligibility Criteria
Robert E. Feathers and Betty Lanber Feathers Scholarship	Robert E. Feathers and Betty Lanber Feathers	• Varies	• Based on financial need* • Full-time student • Minimum 3.0 GPA • Must be enrolled in the Nursing program or taking Nursing prerequisites • Preference will be given employees of Redstone Highlands - Greensburg
Lovis "Loving Heart" Scholarship	Lovis Family and Friends	• $500	• Based on financial need* • Minimum 2.5 GPA • Must be enrolled in the Nursing program
Office Technology (Medical) & Medical Assisting			
Beverly Diehl Memorial	Daughters & friends of Beverly Diehl	• $200/term	• Returning student • Preference given to nontraditional students • Minimum 2.0 GPA • Based on financial need*
Paralegal			
Gene McDonald Scholarship	Gene McDonald Family	• $250 • Two awards	• Freshman student • Based on financial need* • Renewable based on 2.5 GPA • Available for three semesters
Psychology/Humanities Transfer			
Bruck Elizabeth Dorczuk Memorial	Joseph & Vicki Dorczuk	• $500/term	• Psychology or humanities transfer student • Minimum 3.0 GPA • Based on financial need*
Science			
OMNOVA Solutions Scholarship	OMNOVA Solutions, Inc.	• Varies	• Based on financial need* • GPA at least 2.5 • Science student
Visual Arts Major			
Gregory Hricenak Visual Arts	Family & friends of Greg Hricenak	• $350/term	• Minimum 2.5 GPA • Based on financial need*
Workforce Development			
Dr. Daniel J. and Ann Obara Scholarship	Dr. Daniel J. and Ann Obara Scholarship	• Varies	• Based on financial need* • Minimum 3.0 GPA • Must be enrolled in a Workforce Development program at the ATC • Must be pursuing an AAS degree

SCHOLARSHIPS REQUIRING SEPARATE APPLICATION

Retrieve from www.wccc.edu quick links and scholarships

Scholarship	Donor	Amount	Eligibility Criteria
Kiwanis of Greensburg	Kiwanis of Greensburg	• $1,000	• Graduates of Greensburg Central, Greensburg-Salem, Hempfield or Greater Latrobe high schools • Minimum 2.5 GPA • Based on financial need*

SCHOLARSHIPS

SCHOLARSHIPS REQUIRING SEPARATE APPLICATION

Scholarship	Donor	Amount	Eligibility Criteria
Delmar Foundation	Delmar Foundation	• Up to $5,000/academic year	• Based on financial need* • Must reside in the Franklin Regional School District • Minimum GPA and separate application required
Murrysville – Export Rotary Scholarship	Murrysville – Export Rotary Club	• Varies	• Visit the website at, http://murrysville-exportrotary.com/index.php
Part-time Studies Michael J. Kakos Memorial	Michael & Aimee Rusinko Kakos	• Amount varies - spring term award	• Mt. Pleasant High School graduate • Must be a part-time student
Criminal Justice Michael J. Kakos Memorial Scholarship for Criminal Justice	Michael J. & Aimee Rusinko Kakos	• $500/second semester	• Criminal Justice major • Returning students • Preference will be given to graduates of Mt. Pleasant High School residing in Mt. Pleasant Township or who attended Norvelt Elementary School
Early Childhood Education Agnes Kakos Memorial	Michael & Aimee Rusinko Kakos	• Amount varies - spring award	• Mt. Pleasant High School graduate or attended Norvelt Elementary School
Horticulture George Rusinko Memorial	Michael & Aimee Rusinko Kakos	• Varies - awarded in spring	• Mt. Pleasant High School graduate or attended Norvelt Elementary School
Nursing Agnes Rusinko Memorial	Michael & Aimee Rusinko Kakos	• Varies - awarded in spring	• Mt. Pleasant High School graduate or resident of Mt. Pleasant Township or attended Norvelt Elementary School

*Based on financial need - requires completion of the Free Application for Federal Student Aid (FAFSA).

**Essay criteria located at wccc.edu under Admissions/Aid Scholarships.

Unit of Credit

A credit hour is the unit of credit students earn at WCCC. One credit hour usually corresponds to one 50 minute class meeting each week for 15 weeks. A course worth three hours of credit, therefore, usually requires three 50 minute class meetings plus additional work outside the class each week.

Grades and Grade Points

Letter grades are assigned to inform students how well they have learned the material in their course(s). For each letter grade there is a corresponding number called grade points. The table below shows the grades and their grade point equivalents.

Grade	Academic Achievement		Grade Points
A	superior	=	4.0
B	considerable	=	3.0
C	satisfactory	=	2.0
D	marginal	=	1.0
F	unsatisfactory	=	0.0
W	withdrawn	=	0.0
M	Military withdrawal	=	0.0
I	incomplete	=	grade to be computed upon completion of course
AU	audit	=	no credit

The Grade Point Average (GPA) is computed by multiplying the point value of each grade earned by the number of semester hours of the course for which the grade is received and then dividing by the total number of hours of work attempted. Courses numbered below 100 are not calculated into the grade point average.

Example of Grade Point Average Calculation

Grades		Grade Point Value		Semester Hours of Credit		Grade Hours
C	=	2.0	x	3	=	6
B	=	3.0	x	4	=	12
A	=	4.0	x	3	=	12
C	=	2.0	x	3	=	6
B	=	3.0	x	3	=	9
				16		45

45 grade points ÷ 16 semester hours = 2.81 grade point average or GPA

Academic Forgiveness

Students who return to Westmoreland County Community College after a four-year absence may petition that the credits with D and F grades earned during their previous enrollment at the college be removed from the computation of the cumulative grade point average. This petition may be made only after completion of 12 new credits with a grade point average of 2.0 or higher for these 12 credits. Once approved, previously earned credits with D and F grades are not used for calculating the student's grade point average, however, they remain on the transcript with an appropriate notation. Students should meet with a counselor or their faculty advisor to initiate the process.

Repeating Courses

Students may repeat courses; however only the grade and credits earned the last time will be included in the calculation of grade point average.

Incomplete Grades

"Incomplete" is appropriate when the student has completed most of the course requirements, and has contracted to make up the remaining or outstanding work. The grade of "incomplete" is given only at the discretion of the instructor if, in the instructor's judgment, the student has furnished satisfactory evidence that the work cannot be completed because of illness or other extenuating circumstances. The incomplete (I) automatically changes to an F grade if work is not completed by the date specified by the instructor, not to exceed one semester.

Grade Appeal

All final grades posted on a student's transcript at the end of a semester are considered correct unless a question is raised within one year of its recording.

Attendance

Students are expected to attend all class sessions and to complete all course work as specified in the course syllabus. Should students require an extended absence, the instructor should be notified. If the faculty member cannot be reached, the dean of students should be notified. Students unable to meet the performance requirements of the course should complete an official course withdrawal form. Students should see page 14 of this college catalog for withdrawal procedures. Poor attendance may result in class withdrawal initiated by the instructor after the third week and prior to the end of the twelfth week. In programs regulated by external agencies, attendance policies may differ from the policies above. Students enrolled in such programs should consult with their faculty advisors or deans.

Student Illness

Students must contact their instructors if they expect to miss three or more consecutive class days because of illness or other circumstances beyond their control. Students must also disclose the reason for the absence. If a faculty member cannot be reached, the dean of students should be notified.

Standards of Academic Progress

All students are expected to maintain satisfactory academic progress. Satisfactory academic progress requires maintaining a cumulative grade point average of 2.0 or higher. Failure to maintain satisfactory academic progress may result in probation status or suspension.

Academic Information

Statement of Purpose

Standards of academic progress are established to assist students in reaching their highest educational goals. Academic standards procedures provide ongoing assistance to facilitate student academic success.

Early Intervention

Students with less than 12 credits and a grade point average below 2.0 will be identified and encouraged to meet with a counselor to discuss their academic progress. These students are not on probation.

Academic Probation

Students whose cumulative grade point average is below 2.0 after completing 12 but less than 36 credits will be placed on academic probation and will be subject to the following restrictions:

1. Enrollment is limited to 12 credits
2. Students must meet with a counselor to discuss their academic progress and develop an education plan before registering for classes

Students will remain on academic probation until a cumulative grade point average of 2.0 is achieved. Students on probation may be limited in their participation in student athletics and activities.

Students who believe that they should not be on academic probation may appeal their status by submitting a written request to the office of the dean of students.

Academic Suspension

Students who have completed 36 or more credits and have been on academic probation for three consecutive semesters will be suspended. Suspended students may not enroll in credit courses for one semester. Should students wish to enroll in a subsequent semester, they are subject to the following restrictions:

1. Students must meet with a counselor to review their educational goals, develop strategies for improvement, and complete an educational contract approved by the dean of students.
2. Failure to maintain a 2.0 grade point average after completing 12 additional credits will result in suspension for a full academic year.
3. Students suspended for a full academic year will be required to apply for readmission to the college.

Appeal Process

A student who has been notified of academic suspension may appeal the suspension by completing the appropriate form available from the office of the dean of students. The appeal must be submitted to the office of the dean of students who will make a determination on the appeal.

Readmission

Those students suspended for one year must submit a written request at least six weeks prior to the semester in which they wish to enroll. An appointment with a counselor must be made to establish an educational plan.

Learning Resources Center

The Learning Resources Center supports the instructional process by providing print, audiovisual and digital library services. The LRC also coordinates distance education functions. Students who have questions or comments about LRC services should contact the director of Distance Education, 724-925-4138.

Library

The library's print, audiovisual and digital collections are selected to support the college curricula and to provide materials for leisure reading and viewing. Collectively, these include over 45,000 books, 20 databases, hundreds of instructional videos and a popular films. A qualified professional staff is available during library hours to assist students in the use of library materials. Coin-operated copiers are available for student use.

Student Access to Library Resources

All WCCC students have access to the library's print and audiovisual materials at the Youngwood campus. Students who take classes exclusively at education centers may make requests through the library's catalog located on the WCCC portal, by telephone or email and materials are delivered via courier to the appropriate education center. All currently registered students also have access to the digital systems to which the library subscribes by logging in to MyWCCC.

WCCC participates in the Westmoreland County Academic LIbraries Reciprocal Borrowing Program which provides the opportunity for WCCC students to borrow library materials directly from the following libraries: Penn State-New Kensington, Saint Vincent College, Seton Hill University, and the University of Pittsburgh at Greensburg. Students must present a valid WCCC student ID card when requesting borrowing privileges or reference assistance.

The library also participates in regional and national consortia which facilitate interlibrary book lending and interlibrary photocopy services for materials not held locally.

College Learning Center

Located in Room 565 of Founders Hall, the College Learning Center offers WCCC students educational services which are essential to academic success.

Tutorial services are available through the College Learning Center (CLC) at no cost to students. Tutoring sessions are conducted on a limited individual or small group basis. A staff of professional, peer and volunteer tutors can provide students with assistance in most credit courses. Tutors can also assist students to develop the necessary study skills needed to improve their classroom performance.

The CLC offers testing services for make-up exams. A valid WCCC student ID card with the current semester's sticker affixed is required to take an exam in the CLC. All other items must be placed within a locker that requires a quarter deposit. Personal property cannot be left in the CLC. Appointments are necessary and must be made 24 hours in advance. All tests are filed under the instructor's

last name; therefore, students should know their instructor's name prior to making an appointment. Following these procedures will help to provide an efficient and effective testing service. *Enforcement of the Academic Dishonesty Policy will be observed by the CLC staff.* Students who have been found responsible for violating the policy will not be permitted to test in the CLC for the remainder of the academic school year.

GED Testing

WCCC no longer offers testing services for GED or GED preparation classes. Any adult who wishes to earn a GED may learn more about registration, scheduling, preparation and payment by calling the Pearson Vue Call Center at 1-877-392-6433 or going to https://ged.com.

Cooperative Education

Cooperative education is a work experience program designed to supplement formal classroom study with supervised on-the-job learning experiences in college-approved work locations. Academic credit may be earned for work experience if the student's job is related to the field of study or vocational goals. Cooperative education is offered in some career fields. Interested students should contact the Career Development and Placment Center coordinator at 724-925-4058 the semester prior to planned participation.

Information Technology Center

The Information Technology Center provides the college with a powerful and flexible academic computing and communications environment. A college-wide computer network links the Youngwood campus with the education centers providing access to an online library circulation system, several special-capacity workstations, WCCC web services and the Internet. Using a combination of outside services such as Blackboard, as well as dedicated lines and equipment, the college offers online courses linking the campus to Internet functions.

Instructional computer facilities include 40 microcomputer classrooms and 22 personal computer laboratories, 130 electronic classrooms and seven distance education webconferencing rooms at the Youngwood campus and the education centers. Each microcomputer classroom provides file sharing and access to a laser printer and the Internet, while the personal computer laboratories provide specialized software, tutorial support and open computer usage. The purpose of the laboratories is to help students gain practical experience in microcomputer applications and learn how computers are used within particular disciplines. Programs available include word processing, email, spreadsheets, database management, graphics, several programming languages, file transfer, remote login, World Wide Web, tutorials, drafting and several operating systems. The labs are available to all registered students.

The Information Technology Department maintains the infrastructure of WCCC, including telephones, networks and distance education.

Academic Honors

President's List/Dean's List

At the end of each semester, full-time students who have achieved a semester grade point average (GPA) of 4.0 are named to the President's List; full-time students who obtain a GPA between 3.50 to 3.99, with no D or F grades are named to the Dean's List. Developmental courses are not included in the calculation of the GPA.

Part-time students who have achieved a GPA of 4.0 are named to the President's List. The GPA is calculated upon the completion of at least 12 credits; 24 credits; 36 credits; and 48 credits.

Part-time students who have achieved a GPA of 3.5 to 3.99 with no D or F grades are named to the Dean's List. The GPA is calculated upon the completion of at least 12 credits; 24 credits; 36 credits; and 48 credits.

Graduation Honors

Students who have earned an overall grade point average of 4.0 are graduated "with highest honors." Students who have earned an overall grade point average of at least 3.75 and below 4.0 are graduated with "high honors." Students who have earned an overall grade point average of at least 3.50 and below 3.75 are graduated "with honors."

Recognition of Achievement

The college encourages student achievement in scholarship and leadership and formally honors students at commencement and other suitable occasions. Students who have distinguished themselves through academic excellence are honored annually at the Academic Awards Dinner. The Student Awards Ceremony recognizes those who have excelled in cocurricular activities.

Graduation Requirements

To be eligible for graduation, all students must:

- Complete the requirements for their program of study as listed in the catalog in effect at the time of initial enrollment or any subsequent catalog including the current one, provided the catalog does not exceed six years prior to the anticipated graduation date.
- Earn at least 30 credits of degree requirements or 15 credits of diploma requirements at WCCC under faculty instruction and evaluation. This does not include transfer credits, credits awarded for CLEP and other standardized exams, credit by exam or portfolio.
- Maintain a grade point average of 2.0 or better in all course work required and maintain a 2.0 average or better in the major.
- Fulfill all financial obligations to the college.
- File an application for graduation at the Student Information Center and pay the required nonrefundable graduation fee. Those who fail to meet graduation requirements must notify the Records Office to reactivate their graduation files.

Note that developmental courses (those courses which have course numbers below 100) carry no quality points, may not be used to meet graduation requirements and will not transfer to all senior institutions.

Additional Degrees

Students may earn more than one associate of applied science degree from WCCC subject to the following conditions:

1. Two or more degrees may be earned, provided the specific requirements listed in the curriculum for each program of study are met.
2. Multiple degrees may be pursued concurrently or sequentially.
3. Only one associate of arts degree may be earned.

Learning Outcomes Assessment at the Course, Degree and Institutional Levels

Specific learning outcomes are essential components of all credit courses and are delineated in the course outline and syllabus. Students should expect to receive the course outline and syllabus at the start of each class. Assessment of the learning outcomes throughout the course provides the basis to determine the extent to which student learning has occurred. Procedures for evaluation of learning outcomes are delineated in the course syllabus. Questions regarding course learning outcomes should be first addressed to the instructor of the course and then the appropriate division dean.

Student learning outcomes at the program level are delineated in the respective competency profiles for each degree, diploma and certificate. Students achieve competency of the outcomes by satisfactory completion of all program course requirements.

Institutional learning outcomes have been adapted from *Learning Outcomes for the 21st Century* and have been approved as the framework for general education at WCCC. Students are expected to achieve competency in all of these outcomes through satisfactory completion of the general education course distribution and program course requirements for all associate degree programs.

Institutional learning outcomes include:

Communication *(reading, writing, speaking, listening)*

1. Students will be able to read, understand and apply information from written materials.
2. Students will be able to illustrate through their writing, the ability to interpret and explain their own ideas as well as those of others.
3. Students will be able to write and speak, using correct grammar.
4. Students will be able to interpret ideas expressed verbally and apply these ideas to classroom discussion and assignments.

Computation *(understanding and applying mathematical concepts and reasoning, analyzing and using numerical data)*

1. Students will be able to interpret and apply information from graphs, charts and tables.
2. Students will interpret and apply statistical data.
3. Students will be able to integrate and apply mathematical skills to solve quantitative problems.

Community *(citizenship, diversity/pluralism, local community, global environmental awareness)*

1. Students will demonstrate citizenship through active participation in service learning projects.
2. Students will demonstrate an understanding and appreciation of cultural diversity.
3. Students will demonstrate an understanding and appreciation of a global society.
4. Students will demonstrate an awareness of environmental issues.
5. Students will be able to identify responsibilities of citizenship at the local, state and national levels.
6. Students will be able to compare and contrast different forms of governments and economic systems.

Critical Thinking *(analysis, synthesis, evaluation, decision making, creative thinking)*

1. Students will be able to collect, analyze and evaluate information to support decision making.
2. Students will be able to analyze and solve problems.
3. Students will formulate accurate conclusions based on data.
4. Students will be able to demonstrate the ability to support arguments with relevant evidence.
5. Students will use divergent thinking for problem-solving applications.

Information Literacy Skills *(collecting, analyzing, and organizing information for a variety of sources)*

1. Students will demonstrate an awareness of the variety of information resources for use in a learning environment.
2. Students will be able to differentiate the relative merit of information sources.
3. Students will be able to locate, retrieve and evaluate electronic and printed materials for research and information purposes.
4. Students will be able to demonstrate the ability to present information in an appropriate, organized manner.
5. Students will be able to develop the skills to collect and analyze relevant information.

Interpersonal *(teamwork, relationship management, conflict resolution, workplace skills)*

1. Students will be able to work effectively in groups.
2. Students will be able to resolve interpersonal conflicts in a respectful and positive manner.
3. Students will demonstrate appropriate workplace protocol.
4. Students will develop and will be able to utilize effective listening skills.
5. Students will appreciate the value of others' viewpoints and contributions.

Personal *(ability to understand and manage self, management of change, learning to learn, personal responsibility, aesthetic, responsiveness, wellness)*

1. Students will demonstrate time-management skills.
2. Students will be able to identify and demonstrate socially acceptable behavior in academic and professional settings.

3. Students will demonstrate an awareness of healthy lifestyles.
4. Students will demonstrate an understanding of, and commitment to, academic integrity.

Technology *(computer literacy, Internet skills, retrieving and managing information via technology)*

1. Students will be able to recognize the need to adapt to changing technology.
2. Students will be able to develop an awareness and appreciation of the impact of computer technology in the contemporary world.
3. Students will be able to demonstrate computer literacy through the effective use of technology.
4. Students will be able to integrate technology into their program of study.
5. Students will be able to compose and transmit a document.

Act 48

WCCC is an approved provider for Act 48 courses/training in the Commonwealth of Pennsylvania. Educators wishing to take WCCC courses to fulfill Act 48 requirements should check their course selection with their school district. Students must identify their interest in Act 48 by completing the Act 48 Continuing Professional Education Career Verification form prior to the start of classes.

Transcripts

Students who want transcripts of their academic records should complete the Transcript Request Form at the Student Information Center at least one week before the transcript is needed. Transcripts are issued only at the request of the student; official transcripts are sent directly to the institution or agency specified. All financial obligations to the college must be paid before a transcript is issued.

Transcript/Abbreviations

In addition to grades, the following abbreviations may be found on the transcript.

GPA — Grade point average. A GPA is computed by multiplying the credits for each course times the grade points earned, adding the total and dividing by the total number of credits. A minimum overall GPA of 2.0 is required to graduate.

CR — Credit awarded. No grade points.

I — Incomplete. Indicates that the student has not completed all requirements for the course. The incomplete (I) automatically changes to an F grade if work is not completed by the date specified by the instructor, not to exceed one semester.

** **— Academic Forgiveness.** Credits and grade points not calculated in the overall GPA.

AU — Audit. No credit and no grade points.

M — Military Withdrawal. Indicates withdrawal due to active duty. No grade points.

W — Withdrawal. Indicates withdrawal by the seventh week of the semester or withdrawal, passing, after the seventh week. No grade points.

Z — No grade submitted. Indicates that instructor has not submitted a grade. No grade points.

Developmental Courses — Placement test results may require enrollment in developmental courses. These are courses numbered below 100. Grades in developmental courses are not calculated in the grade point average (GPA), and these courses are not applied to program requirements. Developmental courses are designed to help students learn the skills necessary for college work. By completing developmental courses, students will improve their chances for success in their academic program.

Academic Guarantee

The WCCC board of trustees adopted the Academic Guarantee in July 2001 as an affirmation of the college's confidence in the quality of its programs and graduates. The Academic Guarantee provides up to 15 additional credit hours of course work tuition free for graduates of WCCC associate of applied science degree programs whose competencies do not meet the expectations of their employers. The guarantee, which is effective for students graduating in 2002 and beyond, stipulates that the alumnus must be employed full time in a position related to his or her field of study within one year of graduation. Following an employer's written notification of a graduate's lack of entry-level skills, WCCC will develop an educational plan to address the specific skill deficiency.

Delivery of Academic Programs

Courses in academic programs are taught via a variety of formats: traditional classrooms and laboratories; interactive webconferencing, media-enhanced classrooms; and individualized learning experiences such as independent study, honors seminars and online courses.

Distance Education

Westmoreland County Community College's online/distance learning courses offer a complementary alternative to the traditional learning environment. These modes of learning allow students from any location to use state-of-the-art interactive web conferencing technologies and a course management system at convenient times and locations for the student. This environment provides a flexible and engaging learning environment for students with a rigorous schedule.

WCCC currently uses Blackboard Learn as a learning management system and Blackboard Collaborate for web conferencing.

Students may complete required online assignments and access course materials using a personal computer at home, campus lab, library or at a preferred location. Testing options and technical requirements may be obtained in the course syllabus or from the online/distance learning student support site. Before registering for any of the distance education courses below, students are encouraged to speak with an academic advisor.

Types of Distance Education

The courses below require computer skills and Internet access, a WCCC generated email account, and supplemental hardware and software.

Blended (Hybrid) courses meet real-time in a face-to-face setting, at a predetermined location, date and time. Instruction is split between learning activities online and in a specified location, based on subject matter. Students and instructor will meet in a face-to-face classroom/lab setting at least once a week and complete work asynchronously (outside of the classroom) for the remaining class time. A portion (no more than 50%) of the planned instruction and testing will occur outside of the classroom, when the students and instructor(s) are not in the same place. Courses will utilize a course management system and other technologically enhanced components. **(Course code examples: EDU 200 BA, EDU 200 B1)**

Online courses are conducted online via a course management system. Students have the options of using a personal computer at home, campus lab, library or at a preferred location. Some online courses may require real-time collaboration at specific dates and times using web conferencing technology. **(Course code examples: EDU 200 WA- regular start, EDU 200 W1- late start)**

Web Supplemented courses are offered face-to-face in a physical classroom setting using an online course component. The use of a course management system is required to access course documents, materials, assignments and grades. **(Course code examples: EDU 200 00, 28 – as in a regular face-to-face classroom)**

Web Conferencing courses are conducted real-time in a face-to-face setting at specific dates and times, involving two or more locations. Courses may be offered at the Youngwood campus or any of the college education centers (Advanced Technology Center, Bushy Run, Fayette, Greene, Indiana, Latrobe, Mon Valley and New Kensington). Instructors may alternate instructing from each location, communicating through a TV monitor, microphone or telephone conferencing system. Students may attend at any of these locations or from their personal computer at home and will see and speak with the instructor and students at all sites in real time. A learning management system and web conferencing technology will be utilized. **(Course code examples: ALH 120 30-New Kensington, ALH 120 50- Mon Valley, ALH 120 90 – Bushy Run, etc.)**

Independent Study

Independent study courses allow students to pursue a special interest which is not offered as a regular course in the curriculum. The distinguishing differences between an independent study experience and a regular course are the degree of responsibility that the student assumes, the subject matter and the content of the study. Students are required to assume responsibility for most aspects of the learning process normally assumed by the instructor in a regular course.

To enroll in an independent study course, students must determine with an instructor a valid area of investigation and/or activity and propose a series of activities to complete the course requirements.

Honors Seminar

Honors Seminar is designed for students who have demonstrated academic excellence and have shown a high degree of motivation and interest in pursuing knowledge independently.

A student enrolled in the Honors Seminar is required to develop an intellectually challenging project which demonstrates outstanding academic achievement.

Each student also must select a faculty mentor to supervise and evaluate the project. In addition, Honors Seminar students meet throughout the semester to discuss the progress of their projects, receive peer evaluations and showcase their results at the conclusion of the semester.

PROGRAMS OF STUDY

PROGRAMS OF STUDY

MULTIMEDIA AND PHOTOGRAPHY

OFFICE TECHNOLOGY

PUBLIC SERVICES

SCIENCE TECHNOLOGY

TECHNOLOGY, ADVANCED MANUFACTURING AND ENGINEERING SCIENCE

WEB TECHNOLOGY

ACADEMIC PROGRAMS

WCCC offers the associate of arts degree, the associate of fine arts degree, the associate of applied science degree, diploma programs, and certificate programs.

Associate of Arts Degree (A.A.)

The associate of arts degree requires a minimum of 60 credits. All associate degree students are required to complete a core of 38-40 credit hours of general education courses, designed to broaden and enhance their educational experience, and the remaining credit hours from transfer electives. The general education requirements are distributed over the areas of communications, humanities, social science, mathematics, natural science and computer science as outlined on page 40. The transfer electives may also be selected from the courses listed on page 40 or 24 credit hours may be selected from courses listed on page 41. When selecting transfer electives, it is recommended that the student seek the guidance of a counselor or his/her academic advisor.

Associate of Applied Science Degree (A.A.S.)

The associate of applied science degree requires the completion of at least 60 credit hours. Students take 15 hours of general education, one computer technology course, and specific program courses. Many courses completed for the associate of applied science degree may transfer to a four-year college. However, some credits may not transfer. The transfer of credits earned in an A.A.S. degree depends on the senior institution's requirements.

Associate of Fine Arts Degree (A.F.A.)

The associate of fine arts degree requires 61 credits. Students complete 19 general education credits distributed over the areas of communication, mathematics, and social and natural sciences. Students also complete 24 credits in the major. The remaining 18 credits are taken as required courses and restricted electives related to the major but which allow the student to explore individual areas of interest within the field. It is recommended that students seek the guidance of an academic advisor when selecting elective courses.

Diploma and Certificate

Diploma programs require a minimum of 30 credit hours and are designed for students interested in specific career courses. Certificate programs consist of 15-23 credits and are specialized, short-term programs which focus on work force entry and/or development of specialized career skills.

General Education

All associate degree programs include general education course requirements. For the associate of arts degree, courses that satisfy general education are listed on page 40 by areas. Courses that satisfy general education requirements for the associate of applied science degree are listed by area on page 59.

The 21st Century Core Competencies, adopted from *Learning Outcomes for the 21st Century*, have been approved as the framework for General Education at WCCC.

Transfer to Four-Year Colleges and Universities

Westmoreland County Community College offers courses which parallel those offered at four-year colleges and universities during the freshman and sophomore years and lead to the baccalaureate degree. Therefore, it is possible to complete the first two years of a baccalaureate program at WCCC and transfer to a four-year institution. Students can be assured that with appropriate planning the transfer experience will be a successful one. The WCCC counseling staff will help to develop a plan to make the transfer process smooth.

Students who plan to transfer should realize that it is usually not necessary to select a major until the sophomore year. This gives students some time to explore different areas of study during the freshman year. However, by the sophomore year students will want to select courses which meet the requirements of the program at the four-year college to which they plan to transfer.

If there is a senior institution being considered, WCCC will help students select the courses which will work best at that institution. If a student has not selected a four-year institution, the counseling center at WCCC has a large collection of college catalogs and other materials to help in the selection. Many senior institutions will visit WCCC to talk with prospective students. Once a major and a senior institution have been chosen, students are able to select the remainder of their courses with more specific requirements in mind.

Westmoreland County Community College offers the associate of arts (A.A.) and associate of fine arts (A.F.A.) degrees which are designed for students planning to transfer. Suggested courses are listed on pages 42-58 for specific majors in baccalaureate programs. This list is not all inclusive and students should contact the four-year institution to which they plan to transfer to ensure compatibility with program requirements. Not all majors are listed; however, students who have not made decisions about majors or senior institutions can generally take courses that will transfer by using the course selections in general education areas (page 40).

Career degree (A.A.S.) programs prepare students for employment and therefore concentrate on job-related courses. A.A.S. degree students who decide to transfer to four-year colleges or universities may find some courses cannot be applied toward the baccalaureate degree. Transfer of credit to a baccalaureate program is not the primary purpose of career programs even though some courses may be acceptable as electives at a transfer institution.

Associate of Arts Degree (AA)

Degree Requirements

The requirements of the associate of arts degree are:

- **38-40 semester hours of general education from the courses listed below.**
  To meet the general education requirement, 38 credit hours should be taken in the six areas designed below. Specific courses are listed for each area.

I English 6 semester hours	II Humanities 9 semester hours (in 2 areas)		III Social Science 9 semester hours (in 2 areas)	IV Mathematics 3 semester hours	V Natural Science** 8-10 semester hours	VI Computer Science 3 semester hours
ENG 161	ART 155	HUM 156	ECN 158	MTH 157	BIO 107	CPT 145
ENG 164	ART 156		ECN 255	MTH 158	BIO 120	CPT 150
	ART 158	ITA 155	ECN 256	MTH 160	BIO 145	
	ART 160	ITA 156		MTH 161	BIO 155	
	ART 162		GEO 155	MTH 172	BIO 156	
	ART 165	MUS 155		MTH 180	BIO 171	
		MUS 160	HIS 155	MTH 185	BIO 172	
	ASL 101		HIS 156		BIO 265	
	ASL 102	PHL 155	HIS 249			
		PHL 160	HIS 255		CHM 107	
	ENG 159	PHL 161	HIS 256		CHM 108	
	ENG 165		HIS 257		CHM 155	
	ENG 245	REL 171	HIS 262		CHM 156	
	ENG 255	REL 181				
	ENG 258		POL 155		EPS 150	
	ENG 264	SPA 155	POL 200		EPS 160	
	ENG 275	SPA 156			EPS 163	
	ENG 279		PSY 160			
	ENG 290	SPC 155	PSY 161		GEO 160	
		SPC 156	PSY 163			
	FRN 155	SPC 157	PSY 165		PHY 153	
	FRN 156	SPC 158	PSY 167		PHY 155	
		SPC 255	PSY 250		PHY 156	
			PSY 260		PHY 255	
			PSY 265		PHY 256	
			PSY 267			
			PSY 268			
			PSY 269			
			PSY 270			
			SOC 155			
			SOC 161			
			SOC 162			
			SOC 255			

*While these courses are designed for transfer, students are reminded that the requirements for a bachelor's degree vary among four-year colleges and universities. For this reason students are cautioned to select courses which fulfill the requirements of the school to which they intend to transfer. They should contact the WCCC transfer counselor before their first semester and be guided by the catalog of the college or university they wish to attend after earning their associate degree.

**Natural Science distribution may be satisfied by: completion of two coures with lab science (8 credits), completion of one course with lab science and two courses without (10 credits), or completion of three courses without lab science (9 credits).

Associate of Arts Degree (AA)

Elective Courses for Students Planning to Transfer to a Four-Year College or University

Students in the associate of arts degree program are required to complete transfer elective courses, all of which can be chosen from the courses listed on page 35. Students may choose up to 24 credit hours from the list below. Students who intend to transfer are strongly encouraged to select courses in consultation with their advisor or transfer counselor and an academic official from the four-year institution to which they plan to transfer.

ACC 155	CPT 160	ENG 162	MTH 108
ACC 156	CPT 162	ENG 163	MTH 109
ACC 219	CPT 163	ENG 166	MTH 173
ACC 222	CPT 180	ENG 240	MTH 271
ACC 230	CPT 181	ENG 250	MTH 272
ACC 234	CPT 182		
ACC 250	CPT 183	FIN 155	MUS 111
ACC 251	CPT 213	FIN 220	MUS 131
ACC 255	CPT 242	FIN 246	MUS 141
ACC 256	CPT 286	FIN 266	MUS 142
ACC 260			MUS 165
	CRJ 155	FSM 159	MUS 175
ART 155	CRJ 160		MUS 176
ART 156	CRJ 162	FRN 255	MUS 177
ART 158	CRJ 163	FRN 256	MUS 178
ART 160	CRJ 172		MUS 241
ART 162	CRJ 180	GCT 115	MUS 242
ART 165	CRJ 195	GCT 161	MUS 255
	CRJ 220		MUS 275
BUS 140	CRJ 225	HMS 155	MUS 276
BUS 158	CRJ 255	HMS 157	MUS 277
BUS 205	CRJ 261	HMS 170	MUS 278
BUS 206	CRJ 262	HMS 171	MUS 285
BUS 240	CRJ 263	HMS 172	
BUS 241	CRJ 265		PHY 258
BUS 244	CRJ 276	HON 295	
BUS 245	CRJ 277	HON 296	POL 156
BUS 249	CRJ 283	HON 297	POL 220
BUS 250	CRJ 287	HON 298	POL 255
BUS 258	CRJ 290		POL 256
BUS 260	CRJ 296	HOR 105	
BUS 275			SPA 255
BUS 285	ECE 180	HPE 156	SPA 256
BUS 288	ECE 188	HPE 157	
BUS 296		HPE 176	WEB 110
	ECN 255	HPE 178	WEB 140
CHM 250	ECN 256		WEB 235
CHM 251	ECN 260	LAS 101	WEB 277
CHM 264		LAS 111	
	EDU 156		
	EDU 200	MED 105	
	EDU 250	MED 110	
		MED 155	
		MED 158	
		MED 160	
		MED 170	
		MED 255	
		MED 256	

The list of courses is not all inclusive and other courses may be approved on an individual basis.

Associate of Arts, AA

FOCUS ON BUSINESS ADMINISTRATION TRANSFER

Division of Computer Technology/Business

This academic planning page for Business Administration students is designed primarily for those students who plan to transfer to a Pennsylvania Transfer and Articulation Oversight Committee (TAOC) four-year college or university, and are interested in majoring in an area of business such as accounting, finance, international business, general management, marketing and sales, human resource management, or business information systems.

Career Opportunities

Graduates of WCCC's program will have met all of the competencies articulated in the Pennsylvania Statewide Program to Program Articulation Agreement in Business approved by the Transfer and Articulation Oversight Committee (TAOC) on June 16, 2011. A complete list of four-year colleges and universities covered by the TAOC agreement can be found at www.patrac.org. Students interested in transferring to a four-year college or university not participating in TAOC should follow the *Guide to Selecting Courses for Transfer to Specific Bachelor's Degree Programs – if planning a bachelor's degree major in: Business* in this catalog.

Program Learning Outcomes

Upon successfully completing this program, students will be able to:

- transfer to a bachelor's degree program in a business discipline
- exhibit effective written and oral communication skills
- demonstrate knowledge of the practice of accounting, economics, finance, management and marketing, and the applications of these topics in the business environment
- use problem-solving and decision-making skills to appraise and evaluate business practices
- recognize ethical and global dimensions in business practice and how business integrates social responsibility into their ongoing operations

PROGRAM REQUIREMENTS (TOTAL CREDITS-65)

General Education

CPT 150	MIcromputer Concepts	3
ECN 255	Macroeconomics	3
ECN 256	Microeconomics	3
ENG 161	College Writing	3
ENG 164	Advanced Composition	3
MTH 157	College Algebra	3
HUM 156	Critical Thinking	3
SPC 155	Effective Speech	
or		3
SPC 156	Interpersonal Commun.	
Humanities Elective		3
Natural Science Elective w/labs		8
Social Science Elective		3
		38

Major

ACC 155	Accounting I	3
ACC 156	Accounting II	3
BUS 158	Prin. of Management	3
BUS 205	Business Law	3
BUS 244	Business Statistics	3
BUS 250	Calculus for Business	3
BUS 245	Principles of Marketing	3
BUS 288	Business Analytics	3
FIN 220	Business Finance	3
		27

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

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

Fall Semester		**Spring Semester**		**Fall Semester**		**Spring Semester**	
ACC 155	3	ACC 156	3	FIN 220	3	BUS 245	3
CPT 150	3	BUS 158	3	BUS 205	3	BUS 288	3
ENG 161	3	ENG 164	3	BUS 250	3	ECN 256	3
HUM 156	3	BUS 244	3	ECN 255	3	Humanities Elective	3
MTH 157	3	SPC 155 or 156	3	Natural Science Elective	4	Natural Science Elective	4
Social Science Elective	3		**15**		**16**		**16**
	18						

Associate of Arts, AA

FOCUS ON CRIMINAL JUSTICE TRANSFER

Division of Public Service/Humanities/Social Sciences/Mathematics

This academic planning page for Criminal Justice students is designed primarily for those students who plan to transfer to a Pennsylvania Transfer and Articulation Oversight Committee (TAOC) four-year college or university, and are interested in majoring in criminology, justice studies, administration of justice or criminal justice.

Career Opportunities

Graduates of WCCC's program will have met all of the competencies articulated in the Pennsylvania Statewide Program to Program Articulation Agreement in Criminal Justice approved by the Transfer and Articulation Oversight Committee (TAOC) on June 16, 2011. A complete list of four-year colleges and universities covered by the TAOC agreement can be found at www.patrac.org. Students interested in transferring to a four-year college or university not participating in TAOC should follow the *Guide to Selecting Courses for Transfer to Specific Bachelor's Degree Programs – if planning a bachelor's degree major in: Criminal Justice* in this catalog.

Programing Learning Outcomes

This curriculum is designed to prepare students to:

- identify relevant criminal justice laws, regulations and procedures
- demonstrate positive interpersonal and communication skills
- develop effective decision making abilities within criminal justice
- identify the structure and components of the criminal justice system
- access criminal justice data
- examine contemporary issues in the adminstration of justice
- define and explain the major theories of crime and crime causation
- explain the historical development of criminology and criminal justice
- identify fundamental law enforcement concepts, theories and philosophies
- compare and contrast the juvenile justice system with other CJ systems
- explain the discuss ethical dilemmas in criminal justice
- identify patterns and roles of differing peoples and cultures in criminal justice
- summarize the history of corrections and its changing aspects
- summarize the various roles of participants within criminal justice
- discuss individual constitutional and statutory rights within criminal justice
- discuss major issues impacting the state and federal criminal course system

PROGRAM REQUIREMENTS (TOTAL CREDITS - 62)

General Education

CPT 150	Microcomputer Concepts	3
ENG 161	College Writing	3
ENG 164	Advanced Composition	3
MTH 157	College Algebra (or higher)	3
PHL 160	Intro to Philosophy	
or		
MUS 155	Music Listening	3
or		
ART 155	Intro to Art History	
POL 155	Amer. Nat. Government	
or		
PSY 160	General Psychology	6
or		
SOC 155	Principles of Sociology	
SPC 155	Effective Speech	3
English Literature Elective		3
Social Science Elective		3
Natural Science Electives w/labs		8
		38

Major

CRJ 155	Intro to Criminal Justice	3
CRJ 160	Criminal Law I	
or		3
CRJ 163	Criminal Procedure	
CRJ 162	Police Administration I	3
CRJ 180	Corrections	3
CRJ 255	Juvenile Delinquency	3
CRJ 277	Ethics & CRJ	3
CRJ 290	Principles of Criminology	3
		21

Other Required Courses

Math Elective (MTH 157+)	3
	3

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

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

Fall		**Spring**		**Fall**		**Spring**	
CPT 150	3	CRJ 162	3	CRJ 277	3	CRJ 180	3
CRJ 155	3	ENG 164	3	CRJ 290	3	CRJ 255	3
CRJ 160 or 163	3	SOC155	3	ENG 255	3	Criminal Justice Elective	3
ENG 161	3	SPC 155	3	Humanities Elective	3	Natural Science Elective	4
PSY 160	3	Math Elective	3	Natural Science Elective	4	Political Science Elective	3
	15		**15**		**16**		**16**

Associate of Arts, AA

FOCUS ON PSYCHOLOGY TRANSFER

Division of Public Service/Humanities/Social Sciences/Mathematics

This academic planning page for Psychology students is designed primarily for those students who plan to transfer to a Pennsylvania Transfer and Articulation Oversight Committee (TAOC) four-year college or university, and are interested in majoring in psychology.

Career Opportunities

Graduates of WCCC's program will have met all of the competencies articulated in the Pennsylvania Statewide Program to Program Articulation Agreement in Business approved by the Transfer and Articulation Oversight Committee (TAOC) on June 16, 2011. A complete list of four-year colleges and universities covered by the TAOC agreement can be found at www.patrac.org. Students interested in transferring to a four-year college or university not participating in TAOC should follow the *Guide to Selecting Courses for Transfer to Specific Bachelor's Degree Programs – if planning a bachelor's degree major in: Psychology* in this catalog.

Program Learning Outcomes

This curriculim is designed to prepare students to:

- trace the history of psychology as a science and distinguish among contemporary specialty areas
- differentiate among research methods in stuyding human behavior
- identify brain structures and their corresponding functions
- evaluate the major theories of learning and personality
- summarize the stages of prenatal development and discuss specific teratogens that can impact a developing child
- explain biological changes and selected theories of cognitive and psychosocial development across the lifespan
- describe how social situations affect attitudes, including prejudice and discrimination
- discuss how social interactions affect understanding of self and personal development
- describe psychological assessment instruments and their usefulness in diagnosing mental illness
- identify categories and symptoms of mental disorders using DSM criteria
- explain causes of mental illness along with past and current treatment
- identify specific areas of neuroanatomy and corresponding functions in health and disease
- compare available neuroimaging techniques and their usefulness in diagnosing brain pathology
- critique the advantages and disadvantages of nonexperimental research techniques
- outline the components of experimental design, including independent and dependent variables
- infer whether an observed effect is statistically significant when provided the results of an inferential test
- describe the content or major sections of a research report
- illustrate an understanding of the limits of sensory memory, short term and long term memory with respect to content and duration
- compare single-memory system views and multiple-memory system views of the brain
- summarize the difference between localist and distributed theories of memory, shallow and deep encoding strategies, and recall and recognition strategies

PROGRAM REQUIREMENTS (TOTAL CREDITS - 62)

General Education

BIO 155	General Biology I	4
CPT 150	Microcomputer Concepts	3
ENG 161	College Writing	3
ENG 164	Advanced Composition	3
MTH 157	College Algebra	3
PHL 161	Intro to Ethics	
or		
PHL 165	Social Ethics	3
PSY 160	General Psychology	3
SPC 155	Effective Speech	3
Humanities Elective		3
Social Science Electives (not psychology)		6
Natural Science Elective w/lab		4
		38

Major

PSY 161	Human Growth & Dvlpmt.	3
PSY 163	Physiologic Psychology	
or		
PSY 260	Social Psychology	3
or		
PSY 270	Abnormal Psychology	
PSY 250	Research Meth. in Psy.	3
MTH 160	Intro to Statistics	3
		12

Other Required Courses

Psychology Electives	6
AA Electives from page 35	6
	12

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

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

Fall		**Spring**		**Fall**		**Spring**	
CPT 150	3	ENG 164	3	BIO 155	4	General Elective	3
ENG 161	3	MTH 160	3	PSY 250	3	Major Psychology	3
MTH 157	3	PHL 161 or 165	3	General Elective	3	Natural Science Elective	3
PSY 160	3	Psychology Elective	3	Humanities Elective	3	Psychology Elective	3
SPC 155	3	Social Science	3	Major Psychology Course	3	Social Science Elective	3
	15		**15**		**15**		**15**

Associate of Arts, AA

FOCUS ON TEACHER EDUCATION TRANSFER (SECONDARY OR SPECIAL EDUCATION)

Division of Public Service/Humanities/Social Sciences/Mathematics

The Teacher Education program is designed to provide course work necessary for transfer to a baccalaureate program in Secondary or Special Education.

Career Opportunities

Upon the completion of this program students can obtain a job as a teaching assistant while pursuing a bachelor's degree in teaching.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- identify the state and national educational standards that relate to their specific area of interest
- recognize typical developmental levels of students and recognize when student development differs from typical development
- explain how diversity influences learning and demonstrate effective responses to the diversity in the classroom
- demonstrate effective classroom management skills
- identify and use verbal, nonverbal and media communication techniques effectively
- describe a variety of assessments for use in the classroom, including formal and informal assessments
- identify state certification requirements of teaching professionals for initial certification and continuous professional development
- defend the statement that "learning is a partnership." (The student will describe and defend the importance of school, parent/guardian and community working together for the success of the learner.)
- take the required test as stated by the PA Department of Education for admission into the teaching program at their transfer institution
- discuss changes in education and the trends from analyzing professional journal articles
- identify the essential characteristics of effective teachers and schools
- describe how changes in the student population are leading to educational change
- develop a personal philosophy of education that will include, but not be limited to: how students learn, the purpose of school, the importance of parent involvement and the role of the teacher and school

PROGRAM REQUIREMENTS (TOTAL CREDITS — 62-64)

General Education

CPT 150	Microcomputer Con.	3
ENG 161	College Writing	3
ENG 164	Advanced Composition	3
PSY 160	General Psychology	3
SPC 155	Effective Speech	3
British or Ameri. Lit. Elective		3
Humanities Elective (art, music, theater)		3
Math Electives (MTH 157+)		6
Natural Science Elective		8-10
Social Science Elective (one multicultural and one history)		6
		41-43

Major

ECE 188/ EDU 188	Exceptional Dvlpmt. Exceptional Dvlpmt.	3
EDU 200	Intro to Instruc. Tech.	3
EDU 250	Teaching English to Spkrs. of Other Lang.	3
PSY 165	Educational Psychology	3
PSY 265 or PSY 268	Child Psychology / Adolescent Psychology	3
		15

Other Required Courses

Restricted Electives*	6
	6

***Restricted Electives**

ECE 194 Young Child/Special Needs
EDU 156 Intro to Mid. & Sec. Ed.
SOC 155 Principles of Sociology
SOC 165 Cultural Diversity
SOC 255 Cultural Anthropology
HMS 170 Racial & Ethnic Minorities
GEO 155 Intro to Human Geography
HIS 255 Early U.S. & Pa. History
HIS 256 Modern U.S. & Pa. History
HPE 156 Health & Physical Education

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**	
CPT 150	3	EDU 200	3	PSY 265 or PSY 268	3	ECE 188/EDU 188	3
ENG 161	3	ENG 164	3	Brit./Ameri. Lit. Elective	3	EDU 250	3
PSY 160	3	PSY 165	3	Math Elective	3	Natural Science Elective	3/4
SPC 155	3	Humanities Elective	3	Natural Science Elective	3/4	Social Science Elective (history)	3
Restricted Elective	3	Math Elective	3	Social Science Elective (multicultural)	3	Restricted Elective	3
	15		**15**		**15/16**		**15/16**

*Students should be in contact with their chosen transfer institution to verify course acceptance.
**After completing 30 credits, students should contact their senior institution.
***Students should take the required PA Department of Education exam (Preservice Academic Performance Assessment [PAPA] for Reading, Writing, Mathematics) for admission into the teaching program of the transfer institution after 30 credits.

General Studies Transfer, Diploma

This diploma is designed for students who plan to transfer to a four-year college or university, but do not intend to complete an associate degree at Westmoreland County Community College. In consultation with a transfer counselor, the student has the flexibility to design a program that will readily transfer to most institutions without loss of credits and satisfy core general education requirements at most institutions.

Career Opportunities

Graduates of WCCC's program who successfully complete courses from the approved categories will have met all of the competencies approved by the Transfer and Articulation Oversight Committee (TAOC) and have their credits transferred and counted toward graduation at any of the participating Pennsylvania State System of Higher Education Universities. A complete list of four-year colleges and universities covered by the TAOC agreement can be found at www.patrac.org.

Program Learning Outcomes

Student learning outcomes at the program level are delineated in the respective competency profiles for each degree, diploma and certificate. Students achieve competency of the outcomes by satisfactory completion of all program course requirements. Institutional learning outcomes have been adapted from Learning Outcomes for the 21st Century and have been approved as the framework for general education at WCCC. Students are expected to achieve competency in all of these outcomes through satisfactory completion of the general education course distribution and program course requirements for all associate degree programs. Institutional learning outcomes include: Communication Computation, Community, Critical Thinking, Information Literacy Skills, Interpersonal, Personal and Technology. Refer to pages 34 and 35 of this catalog for complete learning outcomes.

PROGRAM REQUIREMENTS (TOTAL CREDITS – 30/31)

Refer to page 34 for complete Associate of Arts Degree Requirements. In addition, students who test into developmental classes must successfully pass them and complete any prerequisite courses.

General Education	
ENG 161 College Writing	3
ENG 164 Advanced Composition	3
Humanities Electives	6
Social Science	6
Mathematics or Natural Sciences	3-4
Computer Science	3
	24/25

Other Required Courses	
AA Electives from pages 35 or 36	6
	6

To assist students and advisors/counselors in selecting courses to fulfill associate of arts degree requirements, the following courses are suggested for transfer to bachelor's degree majors listed below. Students should be aware that this list is not all inclusive and that through discussions with officials at the four-year college or university, other appropriate courses may be identified. This list does not contain all possible majors at four-year institutions. Course work for other majors can be taken at WCCC; for assistance see an advisor or counselor. If undecided about a major refer to page 40. General education requirements must be taken from specified lists on page 32.

If planning a bachelor's degree major in: Biology

Suggested courses for the associate of arts degree are:

General Education	Sem. Hrs.
ENG 161 College Writing	3
ENG 164 Advanced Composition	3
BIO 155 General Biology I	4
BIO 156 General Biology II	4
MTH 157 College Algebra (or higher level math)	3-4
Computer Science Elective	3
Humanities Electives	9
Social Science Electives	9

Major and support electives	Sem. Hrs.
CHM 155 General Chemistry I	4
CHM 156 General Chemistry II	4
Restricted Elective*	
- select from course with prefix of BIO	8
- select from courses with prefixes of MTH, CHM, PHY	8

*The choice of these courses is dependent on the four-year college or university to which the student plans to transfer.

If planning a bachelor's degree major in: Chemistry

Suggested courses for the associate of arts degree are:

General Education	Sem. Hrs.
ENG 161 College Writing	3
ENG 164 Advanced Composition	3
CHM 155 General Chemistry I	4
CHM 156 General Chemistry II	4
MTH 158 Precalculus Mathematics	3
Computer Science Elective	3
Humanities Electives	9
Social Science Electives	9

Major and Support Electives	Sem. Hrs.
CHM 240 Analytical Chemistry	4
CHM 250 Organic Chemistry I	4
CHM 251 Organic Chemistry II	4
CHM 275 Biochemistry	4
MTH 172 Analytical Geometry and Calculus I	4
MTH 173 Analytical Geometry and Calculus II	4
PHY 255 Engineering Physics I	5
PHY 256 Engineering Physics II	5

*The choice of these courses is dependent on the four-year college or university to which the student plans to transfer.

If planning a bachelor's degree major in: Chiropractic

Suggested courses for the associate of arts degree are:

General Education	Sem. Hrs.
ENG 161 College Writing	3
ENG 164 Advanced Composition	3
BIO 155 General Biology I or	
BIO 171 Anatomy and Physiology I	4
BIO 156 General Biology II or	
BIO 172 Anatomy and Physiology II	4
MTH 157 College Algebra	3
PSY 160 General Psychology	3
Computer Science Elective	3
Humanities Electives	9
Social Science Electives	9

Major and Support Electives	Sem. Hrs.
CHM 155 General Chemistry I	4
CHM 156 General Chemistry II	4
CHM 250 Organic Chemistry I	4
CHM 251 Organic Chemistry II	4
PSY 155 College Physics I	4
PSY 156 College Physics II	4
Electives*	8

*The choice of these courses is dependent on the four-year college or university to which the student plans to transfer.

If planning a bachelor's degree major in: Communication

Suggested courses for the associate of arts degree are:

GENERAL EDUCATION	SEM. HRS.
ENG 161 College Writing	3
ENG 164 Advanced Composition	3
MTH 157 College Algebra (or higher level math)	3
PSY 160 General Psychology	3
SPC 155 Effective Speech	3
Computer Science Elective	3
Humanities Electives	6
Natural Science Electives	8
Social Science Electives	6

MAJOR AND SUPPORT ELECTIVES	SEM. HRS.
Electives*	24

There are many options within a communication major, including advertising, media, public relations, and speech and rhetoric. Selection of courses will depend on the specific option chosen by the student and on the requirements of the college to which the student is transferring. Subjects used to meet these major requirements often come from disciplines such as English, business, media, speech, theater and graphic arts. Students should contact their advisor or the transfer counselor concerning the appropriate choice of courses.

*The choice of these courses is dependent on the four-year college or university to which the student plans to transfer.

If planning a bachelor's degree major in: Computer Science/Information Systems

Suggested courses for the associate of arts degree are:

GENERAL EDUCATION	SEM. HRS.
ENG 161 College Writing	3
ENG 164 Advanced Composition	3
MTH 158 Precalculus Mathematics (or higher level math)	3
Computer Technology Elective	3
Humanities Electives	9
Natural Science Electives	8
Social Science Electives	9

MAJOR AND SUPPORT ELECTIVES	SEM. HRS.
Computer Technology/ Mathematics Electives*	12-15
Electives**	9-12

*The choice of these courses is dependent on the four-year college or university to which the student plans to transfer.

**Students' specific educational or career goals will determine the choice of support courses. Additional courses in mathematics may be appropriate for those planning to major in Computer Science. Students planning to major in Information Systems may be encouraged to take courses in business, social science, or other related areas. Students should consult with their advisor or transfer counselor to determine which courses will meet the requirements of the receiving institution.

If planning a bachelor's degree major in: Criminal Justice

Suggested courses for the associate of arts degree are:

GENERAL EDUCATION	SEM. HRS.
ENG 161 College Writing	3
ENG 164 Advanced Composition	3
SPC 155 Effective Speech	3
ART 155 Intro to Art History **or**	
MUS 155 Music Listening **or**	3
PHL 160 Intro to Philosophy	
Humanities Electives	3
Choose 2	
POL 155 Am. National Gov. **or**	
PSY 160 General Psychology	
SOC 155 Principles of Sociology	6
Computer Science Elective	3
Social Science Elective	3
Natural Science Electives w/Labs	8
Mathematics Elective	3
Computer Science Elective	3

MAJOR AND SUPPORT ELECTIVES	SEM. HRS.
CRJ 155 Introduction to Criminal Justice	3
CRJ 162 Police Administration I	3
CRJ 163 Criminal Procedure	3
CRJ 180 Corrections	3
CRJ 255 Juvenile Delinquency	3
CRJ 277 Ethics & CRJ	3
CRJ 290 Principles of Criminology	3
Math Elective (MTH 157 or Higher)	3

*The choice of these courses is dependent on the four-year college or university to which the student plans to transfer.

If planning a bachelor's degree major in: Engineering

Suggested courses for the associate of arts degree are:

GENERAL EDUCATION	SEM. HRS.
ENG 161 College Writing	3
ENG 164 Advanced Composition	3
MTH 172 Analytical Geometry and Calculus I	4
PHY 255 Engineering Physics I	5
PHY 256 Engineering Physics II	5
Computer Science Elective	3
Humanities Electives	9
Social Science Electives	9

MAJOR AND SUPPORT ELECTIVES	SEM. HRS.
CHM 155 General Chemistry I	4
CHM 156 General Chemistry II	4
MTH 173 Analytical Geometry and Calculus II	4
Electives*	7-8

Students planning to major in engineering are cautioned to communicate with their transfer institution prior to the completion of their first year of study at WCCC. This will assist in ensuring successful transfer of course work.

*The choice of these courses is dependent on the four-year college or university to which the student plans to transfer.

If planning a bachelor's degree major in: English/Writing/Literature

Suggested courses for the associate of arts degree are:

GENERAL EDUCATION	SEM. HRS.
ENG 161 College Writing	3
ENG 164 Advanced Composition	3
SPC 155 Effective Speech	3
Computer Science Elective	3
Humanities Electives	6
Mathematics Elective	3
Natural Science Electives	8
Social Science Electives	9

GENERAL EDUCATION	SEM. HRS.
Electives*	24

A student's specific educational or career goals will determine the choice of support courses. Additional courses in the humanities may be appropriate for those planning on graduate work in English literature while those planning on entering the work force after the bachelor's degree may be encouraged to take courses in business, social science, or other related areas. Students should consult with their advisor or transfer counselor to determine which courses will meet requirements of the receiving institution.

*The choice of these courses is dependent on the four-year college or university to which the student plans to transfer.

If planning a bachelor's degree major in: Health & Physical Education

Suggested courses for the associate of arts degree are:

General Education	Sem. Hrs.
ENG 161 College Writing	3
ENG 164 Advanced Composition	3
PSY 160 General Psychology	3
Computer Science Elective	3
Humanities Electives	9
Mathematics Electives	6
Natural Science Electives	8
Social Science Electives	6

Major and Support Electives	Sem. Hrs.
Electives**	15

*Required for teacher certification.

**The choice of these courses is dependent on the four-year college or university to which the student plans to transfer.

If planning a bachelor's degree major in: Health Professions

Suggested courses for the associate of arts degree are:

General Education	Sem. Hrs.
ENG 161 College Writing	3
ENG 164 Advanced Composition	3
BIO 171 Anatomy and Physiology I	4
and	
BIO 172 Anatomy and Physiology II	4
or	
BIO 155 General Biology I	4
and	
BIO 156 General Biology II	4
MTH 157 College Algebra or	
MTH 160 Introduction to Statistics	3
PSY 160 General Psychology	3
Computer Science Elective	3
Humanities Electives	9
Social Science Electives	6

Major and Support Electives	Sem. Hrs.
CHM 155 General Chemistry I	4
CHM 156 General Chemistry II	4
Electives*	16

Health professions include majors such as dietetics, medical technology, occupational therapy, physician's assistant, and physical therapy. Each specialization has its own set of prerequisites with some emphasizing the natural sciences and others stressing the social sciences or related subject areas. Major and support courses should be selected according to the requirements of the specific baccalaureate program.

*The choice of these courses is dependent on the four-year college or university to which the student plans to transfer.

If planning a bachelor's degree major in: History

Suggested courses for the associate of arts degree are:

General Education	Sem. Hrs.
ENG 161 College Writing	3
ENG 164 Advanced Composition	3
Computer Science Elective	3
Humanities Electives	9
Mathematics Elective	3
Natural Science Electives	8
Social Science Electives (other than history)	9

Major and Support Electives	Sem. Hrs.
Electives*	24

*The choice of these courses is dependent on the four-year college or university to which the student plans to transfer.

If planning a bachelor's degree major in: Humanities

Suggested courses for the associate of arts degree are:

General Education	Sem. Hrs.
ENG 161 College Writing	3
ENG 164 Advanced Composition	3
Computer Science Elective	3
Humanities Electives	9
Mathematics Elective	3
Natural Science Electives	8
Social Science Electives	9

Major and Support Electives	Sem. Hrs.
Electives*	24

Disciplines within the humanities include art, English, foreign languages, music, philosophy, and speech. Selection of major and support courses will be determined by the student's educational and career goals and the requirements of the receiving institution.

*The choice of these courses is dependent on the four-year college or university to which the student plans to transfer.

If planning a bachelor's degree major in: Mathematics

Suggested courses for the associate of arts degree are:

General Education	Sem. Hrs.
ENG 161 College Writing	3
ENG 164 Advanced Composition	3
MTH 172 Analytical Geometry and Calculus I	4
Computer Science Elective	3
Humanities Electives	9
Natural Science Electives	8
Social Science Electives	9

Major and Support Electives	Sem. Hrs.
MTH 173 Analytical Geometry and Calculus II	4
MTH 271 Analytical Geometry and Calculus III	4
Electives*	15

Additional courses in computer science or natural sciences are advisable. Specific selection of these courses should be based on the requirements of the receiving institution.

*The choice of these courses is dependent on the four-year college or university to which the student plans to transfer.

If planning a bachelor's degree major in: Middle or Secondary Teacher Education

Suggested courses for the associate of arts degree are:

General Education	Sem. Hrs.
ENG 161 College Writing	3
ENG 164 Advanced Composition	3
PSY 160 General Psychology	3
SPC 155 Effective Speech	3
British or American Literature	3
Computer Science Elective	3
Humanities Elective	3
Mathematics Elective	3
Natural Science Electives w/Labs	8
Social Science Electives	6

Major and Support Electives	Sem. Hrs.
ECE 188 Intro to Exceptional Development	3
EDU 156 Intro to Middle & Secondary Education	3
EDU 200 Intro to Instructional Technology	3
EDU/ENG 250 Teaching English to Speakers of Other Languages	3
PSY 165 Educational Psychology	3
PSY 265 Child Psychology or PSY 268 Adolescent Psychology	3
Elective (Additional Mathematics class)	3
Elective	3

*After completing 30 credits students should contact the education department within their transfer school.

**Students should take the required PA Department of Education exam (Preservice Academic Performance Assessment (PAPA) for Reading, Writing, Mathematics) for admission into the teaching program of the transfer institution after 30 credits.

***The choice of these courses is dependent on the four-year college or university to which the student plans to transfer.

If planning a bachelor's degree major in: Physics

Suggested courses for the associate of arts degree are:

General Education	Sem. Hrs.
ENG 161 College Writing	3
ENG 164 Advanced Composition	3
CHM 155 General Chemistry I	4
CHM 156 General Chemistry II	4
MTH 172 Analytical Geometry and Calculus I	4
Computer Science Elective	3
Humanities Electives	9
Social Science Electives	9

Major and Support Electives	Sem. Hrs.
MTH 173 Analytical Geometry and Calculus II	4
MTH 271 Analytical Geometry and Calculus III	4
MTH 272 Diffential Equations	3
PHY 255 Engineering Physics I	5
PHY 256 Engineering Physics II	5
Elective*	3

*The choice of these courses is dependent on the four-year college or university to which the student plans to transfer.

If planning a bachelor's degree major in: Political Science

Suggested courses for the associate of arts degree are:

General Education	Sem. Hrs.
ENG 161 College Writing	3
ENG 164 Advanced Composition	3
Computer Science Elective	3
Humanities Electives	9
Mathematics Elective	3
Natural Science Electives	8
Social Science Electives (other than political science courses)	9

Major and Support Electives	Sem. Hrs.
POL 155 American National Government	3
Electives*	21

*The choice of these courses is dependent on the four-year college or university to which the student plans to transfer.

If planning a bachelor's degree major in: Pre-Law

Suggested courses for the associate of arts degree are:

General Education	Sem. Hrs.
ENG 161 College Writing	3
ENG 164 Advanced Composition	3
Computer Science Elective	3
Humanities Elective	3
Mathematics Elective	3
Social Science Electives	9

Major and Support Electives	Sem. Hrs.
POL 155 American National Government	3
POL 200 Constitutional Law & Civil Liberties	3
POL 255 American, State & Local Government	3
HUM 156 Cricital Thinking	3
SPC 155 Effective Speech	3
LAS 101 The Legal Assistant	3
LAS 111 Legal Analysis	3
Electives*	15

*The choice of these courses is dependent on the four-year college or university to which the student plans to transfer.

If planning a bachelor's degree major in: Psychology

Suggested courses for the associate of arts degree are:

GENERAL EDUCATION	SEM. HRS.
ENG 161 College Writing	3
ENG 164 Advanced Composition	3
SPC 155 Effective Speech	3
PHL 161 Intro to Ethics or	
PHL 165 Social Ethics	3
Humanities Electives	3
PSY 160 General Psychology	3
Social Science Elective (not Psyc.)	6
Natural Science Electives	8
Mathematics Elective	3
Computer Science Elective	3

MAJOR AND SUPPORT ELECTIVES	SEM. HRS.
PSY 161 Human Growth & Development	3
PSY 163 Physiologic Psychology	
or	
PSY 260 Social Psychology	
or	
PSY 269 Human Memory & Cognition	3
or	
PSY 250 Research Methods in Psychology	
PSY 270 Abnormal Psychology	3
MTH 160 Intro to Statistics	3
Psychology Electives	6
Electives	6

*The choice of these courses is dependent on the four-year college or university to which the student plans to transfer.

If planning a bachelor's degree major in: Sociology

Suggested courses for the associate of arts degree are:

GENERAL EDUCATION	SEM. HRS.
ENG 161 College Writing	3
ENG 164 Advanced Composition	3
MTH 157 College Algebra or	
MTH 160 Introduction to Statistics	3
Computer Science Elective	3
Humanities Electives	9
Natural Science Electives	8
Social Science Electives	9
(other than sociology courses)	

MAJOR AND SUPPORT ELECTIVES	SEM. HRS.
SOC 155 Principles of Sociology	3
Electives*	21

*The choice of these courses is dependent on the four-year college or university to which the student plans to transfer.

If undecided about a bachelor's degree major

Suggested courses for the associate of arts degree are:

GENERAL EDUCATION	SEM. HRS.
ENG 161 College Writing	3
ENG 164 Advanced Composition	3
Computer Science Elective	3
Humanities Electives	9
Mathematics Elective	3
Natural Science Electives	8
Social Science Electives	9

MAJOR AND SUPPORT ELECTIVES	SEM. HRS.
Electives*	24

*The choice of these courses is dependent on the four-year college or university to which the student plans to transfer.

Associate of Fine Arts, AFA

ART THERAPY OPTION

Public Service/Humanities/ Social Sciences/Mathematics

The associate of fine arts degree program in art therapy offers a foundation curriculum parallel to the first two years of a baccalaureate in art therapy (BA). As a transfer program, this option offers courses that provide an introduction to the field of art therapy, and prepares the student for the first two years of a foundation before entering a senior institution. Students completing the AFA art therapy option are prepared for a range of careers that focus on communities requiring therapies such as returning combat veterans diagnosed with post-traumatic stress disorder, children and adults diagnosed with autism, and elderly individuals diagnosed with physical and mental challenges. Students develop skills in a range of studio art practice while simultaneously developing a greater understanding of the field of psychology and are introduced to how these fields work in tandem for effective therapeutic outcomes.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- identify the relationship between art and psychology
- summarize the role of art therapy in relation to the range of therapy practices
- differentiate the efficacy of creative therapies to promote psychological health
- assess the concept of creativity related to expressive therapies
- construct images that reflect their own creative problem-solving ideas and concepts
- explain historical, cultural and global development of works of art
- examine diversity in western and non-western visual traditions
- describe their own cultural context in the choices of image making
- critically develop and evaluate their own artwork and portfolio
- compare the relationship between visual and verbal communication skills
- communicate informed personal reactions to works of art

PROGRAM REQUIREMENTS (TOTAL CREDITS-61)

General Education

CPT 150	Microcomputer Concepts	3
ENG 161	College Writing	3
ENG 164	Advanced Comp.	3
MTH 157	College Algebra	
or		3
MTH 161	Modern College Algebra	
PSY 160	General Psychology	3
Natural Science Elective		4
		19

Major

ATH 175	Expressive Therapies	3
ATH 176	Intro/Visual Art Therapy	3
ART 155	Intro to Art History	3
ART 156	World Art Survey	
or		3
ART 158	Intro to American Art	
ART 160	2-D Design	3
ART 162	Drawing I	3
ART 165	Painting I	3
ART 161	3-D Design	3
ART 163	Drawing	3
		27

Other Required Courses

ART 185	Clay I - Touchstone	3
ART 285	Art Portfolio I	3
ASL 101	Amer. Sign Language I	3
PSY 161	Human Growth/Dev.	3
PSY 270	Abnormal Psychology	3
		15

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

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

Fall Semester		**Spring Semester**		**Fall Semester**		**Spring Semester**	
ART 160	3	ART 155	3	ART 163	3	ART 285	3
ART 162	3	ART 161	3	ASL 101	3	ART 185	3
ATH 175	3	ART 165	3	ATH 176	3	ART 156 or 158	3
ENG 161	3	CPT 150	3	PSY 161	3	ENG 164	3
MTH 157	3	PSY160	3	Natural Science Elective	4	PSY 270	3
	15		**15**		**16**		**15**

Associate of Fine Arts, AFA

GRAPHIC DESIGN OPTION

Division of Public Service/Humanities/Social Sciences/Mathematics

The associate of fine arts in graphic design program offers a foundation curriculum parallel to the first two years of a baccalaureate in fine arts (BFA). As a transfer program, students will begin their graphic design program foundational learning experience before moving to a senior institution. Students completing the AFA program are prepared for a range of higher education options such as graphic design, brand identity, package design or environmental graphic design. The program is designed to enhance student visual literacy and conceptual skills in a state-of-the-art environment. Adobe's industry-leading digital communication tools and services lay the groundwork to facilitate innovative creative experiences. The components of this program develop technical competency, while cultivating aesthetic judgment, artistic quality and thought maturity that will provide students with a broad range of options for their future careers in visual communications.

The college also offers a graphic communications associate of applied science degree that prepares students for entry-level positions in production, sales and support in printing and publishing.

Program Outcomes

Upon successful completion of this program, students will be able to:

- outline key aspects and careers within the graphic design profession
- identify major design movements and influences from historical, cultural and social perspectives
- analyze and critique student, professional and historical design from multiple cultures and time periods
- integrate layout, typography, imagery and color elements in combination with the principles of art, design and visual perception
- experiment with concept development and visual planning strategies in the development of creative solutions for contemporary design issues
- demonstrate solid foundation skills and competency in the use of analog and digital tools, emerging technology and software applications
- incorporate safe practices in the use of various art/design materials, tools and equipment
- demonstrate constructive, organized work habits and clear communication skills
- prepare a portfolio of work that reflects a high level of conceptual engagement, knowledge and technical skills that demonstrates acceptable competencies for the AFA

PROGRAM REQUIREMENTS (TOTAL CREDITS-62)

General Education

ENG 161	College Writing	3
ENG 164	Advanced Composition	3
GCT 161	Digital Imaging I	3
MTH 157 or MTH 161	College Algebra / Mod. College Math.	3
Natural Science Elective		4
Social Science Elective		3
		19

Major

GCT 100	Design Technology	1
GCT 115	Design & Layout I	3
GCT 131	Type & Publishing I	3
GCT 151	Art & Illustration I	3
GCT 215	Design & Layout II	3
GCT 231	Type & Publishing II	3
GCT 251	Art & Illustration II	3
GCT 261	Digital Imaging & Editing II	3
		22

Other Required Courses

ART 142 or - ART 143	Typography / Printmaking	3
ART 158 or ART 159	American Art / History of Graphic Dsgn.	3
ART 160	Design I	3
ART 162	Drawing I	3
GCT 155	Graphics & Lettering I	3
GCT 255	Graphics & Lettering II	3
MED 160	Basic Photography	3
		21

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

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

Fall Semester		**Spring Semester**		**Fall Semester**		**Spring Semester**	
ART 160	3	ART 142 or 143	3	ENG 161	3	ENG 164	3
ART 162	3	ART 158 or 159	3	GCT 215	3	GCT 251	3
GCT 100	1	GCT 131	3	GCT 231	3	GCT 261	3
GCT 115	3	GCT 155	3	GCT 255	3	MTH 157 or 161	3
GCT 151	3	MED 160	3	Natural Science Elective	4	Social Science Elective	3
GCT 161	3		**15**		**16**		**16**
	16						

Associate of Fine Arts Degree, AFA

MUSIC OPTION

Division of Public Service/Humanities/Social Sciences/Mathematics

The associate of fine arts music degree program offers a foundation curriculum parallel to the first two years of a baccalaureate in music (BS). As a transfer program, students will begin their music program and by the end of their fourth semester, they are ready to move to a senior institution. Students completing the AFA degree in music are prepared for a range of higher education options in music. The program is designed to develop technical, conceptual, aural and critical thinking skills that lay the groundwork for specialized academic study. The components of this program develop a strong foundation in music literacy that will equip students with a broad range of options for their future in music.

Applied music courses - MUS 121, MUS 122, MUS 221, MUS 222 - offer four levels of private lessons to music majors for either one or two credits per semester. All applied music courses may be repeated four times for the major and four to eight hours of practices time is required. Weekly half-hour lessions (1 credit) are given to students enrolled in the music program. Weekly one-hour lessions (2 credits) are suggested for students enrolled as music performance majors.

Fundamentals of applied music courses - MUS 117, MUS 118, MUS 119, MUS 120 - are designed for all students, regardless of their musical background, who want to learn the basics of applied music. These courses provide the opportunity to learn to play music on one of the following: woodwinds, brass, strings, piano, organ or voice. These courses are designed for students or adults who (1) want to become music majors for admission into the music program or (2) for those who want to increase their knowledge in music performance but not in a degree program. Fundamentals of Applied Music Lessons are an introduction to the skills of performance emphasizing the reading and playing of music. Students will learn scales, entry level literature, embouchure development, basic theory and sight-reading skills. Except for large percussion instruments, students must own the instruments for which they are taking lessons. This course satisfies no requirement of the music program. Private lessons take place 30 minutes per week per semester. Private lesson fee applies. Prerequisite Department approval

Program Learning Outcomes

This curriculum is designed to prepare students to:

- transfer to a four-year college or university and enter a music degree program
- demonstrate their knowledge of music theory, including music fundamentals, analysis techniques and composition techniques
- demonstrate sight-singing and music transcription skills
- show proficiency in an instrument or voice, including musical skills, audition and performance techniques, and literature and pedagogical knowledge specific to their specialty area
- demonstrate mastery of fundamental keyboard and vocal skills
- through ensemble experiences, develop rehearsal, performance skills and knowledge of instrumental or choral literature
- demonstrate and show understanding of Western European music history and American music history

PROGRAM REQUIREMENTS (TOTAL CREDIT—61)

General Education

CPT 150	Microcomputer Concepts	3
ENG 161	College Writing	3
ENG 164	Advanced Comp.	3
MTH 157	College Algebra	3
Social Science Elective		3
Natural Science Elective		4
		19

Major

MUS 115	Theory Skills I	1
MUS 116	Music Aural Theo. Skills II	1
MUS 121	Applied Music I	1
MUS 122	Applied Music II	1
MUS 131	Class Voice I	2
MUS 132	Class Voice II	2
MUS 141/175/177	Ensembles I	2
MUS 142/176/178	Ensembles II	2
MUS 155	Music Listening	3
MUS 160	Music History	3
MUS 165	Music Theory I	3
MUS 166	Music Theory II	3
MUS 180	Class Piano I	2
MUS 215	Music Aural Theo. Skills III	1
MUS 216	Music Aural Theo. Skills IV	1
MUS 221	Applied Music III	1
MUS 222	Applied Music IV	1
MUS 241/275/277	Ensembles III	2
MUS 242/276/278	Ensembles IV	2
MUS 265	Music Theory III	3
MUS 266	Music Theory IV	3
MUS 280	Class Piano II	2
		42

Other Required Courses

Applied Music Lessions, both fundamentals or the major applied courses MUS 117, MUS 118, MUS 119, MUS 120 courses MUS 121, MUS 122, MUS 221, MUS 222 are available for one or two credits per semester in the following areas:

A. Voice
B. Guitar
C. Clarinet
D. String Bass
E. Trombone
F. Percussion
G. Plano
H. Pipe Organ
J. Violin
K. Trumpet
L. Flute
M. Oboe
N. Saxophone
O. Bassoon
P. French Horn
Q. Baritone
R. Tuba
S. Viola
T. Cello

Associate of Fine Arts Degree, AFA

MUSIC OPTION

Division of Public Service/Humanities/Social Sciences/Mathematics

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**	
ENG 161	3	ENG 164	3	CPT 150	3	MUS 132	2
MTH 157	3	MUS 116	1	MUS 131	2	MUS 216	1
MUS 115	1	MUS 122	2	MUS 215	1	MUS 222	1
MUS 121	2	MUS 142/176/178	2	MUS 221	1	MUS 242/276/278	2
MUS 141/175/177	2	MUS 166	3	MUS 241/275/277	2	MUS 160	3
MUS 165	3	MUS 280	2	MUS 265	3	MUS 266	3
MUS 180	2	Social Science Elective	3	MUS 155	3	Natural Science Elective	4
	16		**16**		**15**		**16**

Associate of Fine Arts Degree, AFA

VISUAL ARTS OPTION

Division of Public Service/Humanities/Social Sciences/Mathematics

The associate of fine arts degree program in visual arts offers a foundation curriculum parallel to the first two years of a baccalaureate in fine arts (BFA). As a transfer program, students will begin a direction in either two-dimensional or three-dimensional studio practice before moving to a senior institution. Students completing the AFA program are prepared for a range of higher education options such as art education, art therapy, art management or museum related careers. The program is designed to develop technical, conceptual, creative problem-solving, visual and critical thinking skills that lay the groundwork for specialized academic study, self employment or careers in creative industries. Before degree completion, students undertake the art capstone portfolio class in their final semester. This class requires the student to stage a professional art exhibition or art internship project. The components of this program develop a strong foundation in visual literacy that will equip students with a broad range of options for their future in the visual arts.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- effectively employ two- and three-dimensional visual communication principles
- demonstrate a required level of technical and conceptual proficiency in their medium
- execute images that reflect their own creative problem-solving ideas and concepts
- identify historical, cultural and global development of works of art
- explore diversity in western and non-western visual traditions
- recognize their own cultural context in the choices of image making
- develop a consistent body of work reflecting a concept/theme
- critically develop and evaluate their own artwork and portfolio
- communicate informed personal reactions to works of art
- expand and explore the relationship between visual and verbal communication skills

PROGRAM REQUIREMENTS (TOTAL CREDIT—61)

General Education

CPT 150	Microcomputer Concepts	3
ENG 161	College Writing	3
ENG 164	Advanced Comp.	3
MTH 157 or MTH 161	College Algebra / Modern College Math	3
Social Science Elective		3
Natural Science Elective		4
		19

Major

ART 155	Intro to Art History	3
ART 160	2-D Design	3
ART 162	Drawing I	3
ART 161 or ART 163	3-D Design / Drawing II	3
ART 164 or ART 165	Color Concepts / Painting I	3
ART 156 or ART 157 or ART 158	World Art Survey / Contemporary Art / Intro to American Art	3
ART 285	Art Portfolio I	3
ART 286	Art Portfolio II✦	3
		24

✦*capstone course*

Other Required Courses

BUS 188 or BUS 260	Social Media Markeing / Small Business Mgmt.	3
GCT 161	Digital Imaging I	3
Restricted Electives		12
		18

***Restricted Electives**

ART 140 Illustration	3
ART 142 Typography	3
ART 143 Printmaking	3
ART 150 Airbrush Techniques	3
ART 159 Graphic Design History	3
ART 166 Painting II	3
ART 183 Book Arts I	3
ART 185 Clay I	3
ART 188 Textiles I	3
MED 170 Digital Photography	3
Any partnership course with Touchstone Center for Crafts	3-9
	12

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

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

Fall Semester		Spring Semester		Fall Semester		Spring Semester	
ART 155	3	ART 161 or 163	3	ART 285	3	ART 286	3
ART 160	3	ART 164 or 165	3	Art History Selection	3	BUS 188 or 260	3
ART 162	3	CPT 150	3	Restricted Elective	3	Restricted Electives	9
MTH 157	3	ENG 164	3	Social Science Elective	3		**15**
ENG 161	3	GCT 161	3	Natural Science Elective	4		
	15		**15**		**16**		

Associate of Applied Science Degree (AAS)

Degree Requirements

All associate degree students are required to complete a core of general education courses designed to broaden and enhance their educational experience. General education requirements are included in the course requirements list for each associate degree program. These courses have been included with the course requirements. In some programs they are listed as electives limited to a specific area, such as "Social Science Elective." Other programs may list specific courses which have been determined to best meet the needs of that particular career field. The distribution of general education requirements and the courses which meet these requirements are shown in the list below.

Requirements of the associate of applied science degree include:

- 18 semester hours of general education as outlined below
- 42-69 semester hours of program courses

To meet minimum requirements, 18 hours are required in four areas as shown below, selected from the courses listed.

I English 6 semester hours	II Humanities 0-3 semester hours		III Social Science 3 semester hours	IV Mathematics 3 semester hours	V Science 0-4 semester hours	VI Computer Skills 3 semester hours
ENG 161	ART 155	MUS 155	ECN 255	BUS 120	BIO 107	ARC 210
ENG 162	ART 156	MUS 160	ECN 256	BUS 244	BIO 110	
ENG 163	ART 158		ECN 260		BIO 120	CPT 145
ENG 164	ART 159	PHL 155		MTH 100	BIO 130	CPT 150
ENG 166	ART 160	PHL 160	GEO 155	MTH 100A	BIO 145	
	ART 162	PHL 161		MTH 108	BIO 155	DFT 258
	ART 165		HIS 155	MTH 109	BIO 160	DFT 266
		REL 171	HIS 156	MTH 157	BIO 171	
	ASL 101	REL 181	HIS 249	MTH 158	BIO 210	GCT 161
			HIS 255	MTH 160		
	ENG 159	SPA 155	HIS 256	MTH 161	CHM 105	MED 105
	ENG 165	SPA 156	HIS 257	MTH 172	CHM 107	
	ENG 245		HIS 262	MTH 173	CHM 108	WEB 110
	ENG 255	SPC 155		MTH 180	CHM 155	
	ENG 258	SPC 156	POL 155	MTH 185	CHM 264	
	ENG 264	SPC 157	POL 200	MTH 271		
	ENG 275	SPC 158		MTH 272	EPS 150	
	ENG 290	SPC 255	PSY 160		EPS 160	
			PSY 161		EPS 163	
	FRN 155		PSY 163			
	FRN 156		PSY 165		GEO 160	
			PSY 167			
	HUM 156		PSY 260		PHY 107	
			PSY 265		PHY 153	
			PSY 267		PHY 155	
			PSY 268		PHY 255	
			PSY 269			
			PSY 270			
			SOC 155			
			SOC 161			
			SOC 162			
			SOC 255			

Accounting, AAS

Division of Computer Technology/Business

The field of accounting is particularly suitable for those with an aptitude for mathematics and computer software, the ability to concentrate on detail, and the ability to analyze, compare and interpret facts and figures.

At WCCC the academic program is designed to prepare students without prior experience in accounting for a variety of entry level positions in business, industry, and government. Accounting majors must complete a minimum of 60 credits with a heavy concentration in accounting, computer and business management courses.

Successful completion of this program of study leads to the associate of applied science degree.

Career Opportunities

Recent graduates of the accounting program have accepted jobs with the following titles: junior accountant, accounts payable clerk, assistant accountant, assistant to the CPA, assistant auditor, accounting clerk, payroll accountant and accounting technician.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- appropriately record financial transactions and prepare pertinent financial statements for sole proprietorships, partnerships and corporations
- prepare various types of tax returns
- effect cost and managerial accounting practices
- utilize the microcomputer for accounting, financial and tax reporting
- apply appropriate laws and generally accepted accounting principles to accounting situations
- practice positive interpersonal and communication skills as a member of a business office work team
- utilize sound judgment
- practice ethical conduct

PROGRAM REQUIREMENTS (TOTAL CREDITS — 60)

General Education

BUS 120	Math of Business	3
CPT 150	Microcomputer Con.	3
ECN 255	Macroeconomics	3
ENG 161	College Writing	3
ENG 163	Business Comm.	
or		3
ENG 164	Advanced Composition	
SPC 155	Effective Speech	
or		3
SPC 156	Interpersonal Commun.	
		18

Major

ACC 155	Accounting I	3
ACC 156	Accounting II	3
ACC 219	Managerial Accounting	3
ACC 222	Principles of Auditing	3
ACC 230	Integ. Acct. Software✦	3
ACC 234	Payroll & Sprdsht. Soft.	3
ACC 250	Prin. of Taxation	3
ACC 255	Intermed. Accounting I	3
ACC 256	Intermed. Accounting II	3
		27

✦*capstone course*

Other Required Courses

ACC 251	Corporate Taxation	
or		3
ECN 260	Money & Banking	
BUS 140	Intro. to Business	3
BUS 288	Business Analytics	3
FIN 220	Business Finance	3
FIN 266	Financial Stmt. Analy.	3
		15

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	
ACC 155	3	ACC 156	3	ACC 219	3	ACC 222	3
BUS 120	3	ACC 234	3	ACC 251 or ECN 260	3	ACC 230	3
BUS 140	3	ACC 250	3	ACC 255	3	ACC 256	3
CPT 150	3	ECN 255	3	FIN 220	3	BUS 288	3
ENG 161	3	ENG 163 or 164	3	SPC 155 or 156	3	FIN 266	3
	15		**15**		**15**		**15**

Accounting, Certificate

COMPUTER ACCOUNTING & TAX SPECIALIST

Division of Computer Technology/Business

The computer accounting and tax specialist certificate program is designed to provide entry level general bookkeeping skills, as well as proficiency in the use of microcomputers to perform accounting and tax functions. The curriculum is designed to provide the student with computer experience in several specialty fields within accounting including the preparation of tax returns. Courses included in this certificate may be applied toward the Accounting AAS program.

Career Opportunities

Students who complete this program may be employed in general bookkeeping positions including payroll, accounts receivable or payable, or in the preparation of individual and business income tax returns.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- appropriately record financial transactions and prepare pertinent financial statements for sole proprietorships, partnerships, and corporations
- prepare tax returns for individual payers with various types of income and deductions
- prepare business tax returns including C Corporation, S Corporation, and partnerships
- utilize the microcomputer for accounting, financial and tax reporting
- apply appropriate laws and generally accepted accounting principles to accounting situations
- practice positive interpersonal and communication skills as a member of a business office work team
- utilize sound judgment and practice ethical conduct in making business decisions

PROGRAM REQUIREMENTS (TOTAL CREDITS-18)

ACC 155	Accounting I	3
ACC 156	Accounting II	3
ACC 230	Integrated Acctg. Sftwr.	3
ACC 234	Payroll & Sprdsht. Sftwr.	3
ACC 250	Principles of Taxation	3
ACC 251	Corporate Taxation	3
		18

Accounting, Certificate

GENERAL ACCOUNTING

Division of Computer Technology/Business

The general accounting certificate program is designed to provide an entry level general bookkeeping education, as well as provide for proficiency in the use of the personal computer in performing accounting functions. The curriculum is designed to provide the student with computer experience in several specialty fields within accounting, including the use of the most popular accounting software programs.

Career Opportunities

Students who complete this certificate program may be employed in general bookkeeping positions including entry-level payroll, accounts receivable or accounts payable positions.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- record financial transactions and prepare pertinent financial statements for sole proprietorships, partnerships and corporations
- create a fully integrated accounting software system for maintaining accounting records
- construct spreadsheets that can quantify accounting and business problems and display charts
- utilize computer software for accounting and financial reporting
- display positive interpersonal and communications skills as a member of a business office work team

PROGRAM REQUIREMENTS (TOTAL CREDITS-18)

ACC 155	Accounting I	3
ACC 156	Accounting II	3
ACC 230	Integrated Acctg. Sftw.	3
ACC 234	Payroll & Sprdsh. Sftw.	3
BUS 120	Math of Business	3
CPT 195	Excel for Windows	3
		18

Applied Industrial Technology, AAS

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

Industry in the Southwestern Pennsylvania region is dynamic and employees who have a broad educational background in industrial technology are a valuable commodity. The applied industrial technology degree will allow students to customize their educational pathway and pursue education and training in more than one skill group while integrating a core set of foundation courses including applied math, science and communication. Students who complete this degree program will be employable in various industries including manufacturing, oil and gas, technical sales, warehouse operations, and transportation. Students will engage in classroom discussions, research activities and laboratory exercises that will enhance existing and develop new knowledge, skills and abilities.

Career Opportunities

Students who complete this program may accept positions such as general maintenance and repair workers, production managers, manufacturing and technical sales representatives, production workers, machinists, dispatchers, supervisors, electrical technician, telecommunications technician, safety specialists and many others.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- demonstrate the skills, professional values and ethics necessary to be employed in the various industries that employ individuals with technical or trades-related skills associated with the management and energy sectors
- demonstrate effective oral and written communication skills with corporate officers, supervisors, government officials, front line workers and colleagues
- demonstrate knowledge, skills and abilities in multiple technological and trades related disciplines
- identify, install, troubleshoot, construct, form, weld, assemble, wire or develop systems or processes based upon selected educational pathways
- implement safe work practices in all occupational areas
- apply and demonstrate compliance with applicable regulations, laws, governing bodies or associations as necessary depending upon chosen disciplines

PROGRAM REQUIREMENTS (TOTAL CREDITS – 61/65)

General Education

ENG 161	College Writing	3
ENG 162	Technical Comm.	3
MTH 108	Math for Technology I	4
DFT 258	AutoCAD	4
PSY 160	General Psychology	3
Restricted Electives		9-12
		26-29

Major

Students must select two of the following certificate majors:

Natural Gas & Oil Technology Certificate	18
Occupational Health & Safety Certificate	16
Mechatronics Tech. Certificate	16
Industrial Electricity Technology Certificate	16
Computer Numerical Control Technology (CNC) Certificate	16
Machine Technology I Certificate	16
Supply Chain Mgmgt Certificate	18
Petroleum & Industrial Process Operator Technology (PIPOT)	16
Pipeline Mechanic	16
	32-36

RECOMMENDED SEQUENCE

Students should consult with their advisor for appropriate course sequence.

Architectural Drafting and Design, AAS

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

Students in the architectural drafting and design program learn to translate the ideas, rough sketches, specifications and calculations of architects into working drawings for production and construction.

Successful completion of this program of study leads to the associate of applied science degree.

Career Opportunities

Graduates of this program will accept jobs with the following titles: architectural drafter, architectural drafting technician, architectural drafting technician trainee and first-level CADD operators.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- analyze and translate architectural and construction problems by presenting them visually as working drawings
- develop the ability to execute quantitative design of construction
- apply concepts from physics, engineering, architectural mechanics, mathematics, and drafting and apply them to the synthesis of construction
- communicate effectively and appropriately; record and report information significant to the job
- perform an infinite number of two-dimensional drawings using a stand-alone mini-computer
- identify the basic components of a CADD system
- perform an infinite number of 2-D design math computations necessary to produce drafting design
- implement the basic commands necessary to apply the operational skills needed to effect a 2-D CADD system
- utilize construction industry vocabulary
- originate and interpret drawings using these construction industry standards
- determine cost estimates utiltizing appropriate construction materials
- apply appropriate specifications, building codes and local ordinances in a job assignment
- network with building inspectors, architects, engineers, designers and clients

PROGRAM REQUIREMENTS (TOTAL CREDITS — 60-61)

General Education

ARC 210	Arch. AutoCAD I	4
ENG 161	College Writing	3
ENG 162	Technical Comm.	3
MTH 108**	Math for the Tech. I	4
PHY 107**	Applied Physics	4
Social Science Elective		3
		21

Major

ARC 101	Bldg. Materials & Estim.	3
ARC 102	Contracts and Specs.	3
ARC 105	Arch. Drafting I	4
ARC 106	Arch. Drafting II	4
ARC 119	Intro to Surveying	3
ARC 211	Arch. AutoCAD II	4
ARC 215	Arch. Presentation	4
ARC 262	Piping, Struc. & Elec. Mech.	4
		29

Other Required Courses

EGR 220	Statics/Strength of Mat.	3
MTH 109**	Math for the Tech. II	4
Restricted Elective*		3-4
		10-11

*Restricted Electives are courses with the prefix ARC, DFT, EGR, HAC

**Students planning to transfer to a four-year institution should consult their advisor for course substitutions.

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**	
ARC 101	3	ARC 102	3	ARC 119	3	ARC 215	4
ARC 105	4	ARC 106	4	ARC 211	4	ARC 262	4
ENG 161	3	ARC 210	4	EGR 220	3	Restricted Elective	4
MTH 108	4	ENG 162	3	PHY 107	4	Social Science Elective	3
	14	MTH 109	4		**14**		**15**
			18				

Baking and Pastry, AAS

APPRENTICESHIP OPTION

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

The baking and pastry apprenticeship program is one of eight majors comprising the college's Center for Culinary Arts and Hospitality and is accredited by the American Culinary Federation Education Foundation Accrediting Commission (ACFEFAC). This apprenticeship program is sponsored by The American Culinary Federation Laurel Highlands Chapter (ACFLHC) and WCCC. A cooperative program, it combines 63 credits of academic course work with 4,000 hours of supervised on-the-job training in a participating restaurant, club, hotel, institution, resort or wholesale/retail bakery for an associate degree. Classes are scheduled so that students have a sufficient block of uninterrupted time to complete their 40-hour week. Academic work can be completed as a full-time student in two years or as a part-time student over a period of three years.

Students enrolled in this program are registered with the U.S. Department of Labor as apprentices and are required to join the ACFLHC as student culinarians. Registration and membership fees are required and payable to the ACF during the first week of class.

Students are expected to be well-groomed in compliance with the standards of sanitation. Students will be required to present medical proof of good physical health. Uniforms and program tool kit are required for all lab classes. Business attire may be required for some class assignments.

Employment must be secured in a facility that will provide full-time employment. The employer will agree to abide by the apprenticeship guidelines. Having fulfilled employment requirements, applicants will complete the Pennsylvania Apprenticeship and Training Council Apprenticeship Agreement and American Culinary Federation (ACF) Apprenticeship Data Form. At the completion of the program, students may apply for certification with the ACF.

The baking and pastry degree apprenticeship option may be completed through a partnership with Nemacolin Woodlands Resort. For more information, call the WCCC Admissions Office at 724-925-4077.

Career Opportunities

Graduates of the baking and pastry program may accept positions as: pastry cook, pastry chef, executive pastry chef, baker, cake decorator, baking sales representative, institutional baker/pastry chef, retail baker/pastry chef, wholesale baker/pastry chef, production supervisor, food batch maker, operations manager, sales representative or training specialist.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- prepare yeast rolls, breads, pies, tarts, cookies, doughnuts and frozen desserts based on local, regional and international traditions and diversity
- prepare and decorate cakes, cookies and centerpieces
- prepare pastry items and confectionery items
- make mathematical yield adjustments
- collect, organize and identify information regarding quality standards in bakery products
- utilize positive personal and interpersonal skills needed for supervision of employees and in the area of customer relations
- utilize technology to affect systems of operation within the bakery and pastry industry
- demonstrate basic food preparation skills with additional attention to food cost
- design and prepare artistic showpieces and centerpieces

PROGRAM REQUIREMENTS (TOTAL CREDITS - 63)

General Education

CPT 150	Microcomputer Con.	3
ENG 161	College Writing	3
ENG 163	Business Comm.	
or		3
ENG 164	Advanced Composition	
Humanities Elective		
or		3
FSM 170	Food Culture & Religion	
Mathematics Elective		3
Social Science Elective		3
		18

Major

BKP 141	Baking I	4
BKP 142	Baking II	3
BKP 243	Healthy Cooking Trends	4
BKP 245	Decorating Techniques	3
BKP 247	Specialty/Artistic Tech.	4
CUL 121	Apprenticeship I	2
CUL 122	Apprenticeship II	2
CUL 123	Apprenticeship III	2
CUL 224	Apprenticeship IV	2
FSM 105	Foods I	4
FSM 118	Sanitation	2
FSM 215	Food Purch. & Menu Mgmt.	3
		35

Other Required Courses

FSM 103	Intro to Hospitality	
or		3
FSM 113	Customer Service	
FSM 117	Wait Staff/Din. Rm. Trng.	1
FSM 218	Hospitality Marketing	
or		3
BKP 242	Bakery Deli Merch.	
FSM 235	Supervision/Training	3
		10

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

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

Fall Semester	
BKP 141	4
CUL 121	2
FSM 103 or 113	3
FSM 117	1
FSM 118	2
	12

Spring Semester	
BKP 142	3
CUL 122	2
FSM 105	4
FSM 218 or BKP 242	3
	12

Summer Semester*	
ENG 161	3
CPT 150	3
	6

Fall Semester	
BKP 243	4
BKP 245	3
CUL 123	2
FSM 215	3
	12

Spring Semester	
BKP 247	4
CUL 224	2
FSM 235	3
Math Elective	3
	12

Summer Semester*	
ENG 163 or 164	3
Humanities Elective or FSM 170	3
Social Science Elective	3
	9

Baking and Pastry, Diploma

APPRENTICESHIP OPTION

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

The baking and pastry apprenticeship program is one of eight majors comprising the college's Center for Culinary Art and Hospitality. This apprenticeship program is sponsored by The American Culinary Federation Laurel Highlands Chapter (ACFLHC) and WCCC. A cooperative program, it combines 45 credits of course work with 4,000 hours of supervised on-the-job training in a participating restaurant, club, hotel, institution, resort or wholesale/retail bakery. Classes are scheduled so that students have a sufficient block of uninterrupted time to complete their 40-hour week. Academic work can be completed as a full-time student in two years or as a part-time student over a period of three years.

Students enrolled in this program are registered with the U.S. Department of Labor as apprentices and are required to join the ACFLHC as student culinarians. Registration and membership fees are required and payable to the ACF during the first week of class.

Students are expected to be well-groomed in compliance with the standards of sanitation. Students will be required to present medical proof of good physical health. Uniforms and program tool kit are required for all lab classes. Business attire may be required for some class assignments.

Employment must be secured in a facility that will provide full-time employment. The employer will agree to abide by the apprenticeship guidelines. Having fulfilled employment requirements, applicants will complete the Pennsylvania Apprenticeship and Training Council Apprenticeship Agreement and American Culinary Federation (ACF) Apprenticeship Data Form. At the completion of the program, students may apply for certification with the ACF.

The baking and pastry diploma apprenticeship option may be completed through a partnership with Nemacolin Woodlands Resort. For more information, contact the WCCC Admissions Office, 724-925-4077.

Career Opportunities

Graduates of the culinary arts program may accept jobs with the following titles: pastry cook, pastry chef, executive pastry chef, baker, cake decorator, institutional baker/pastry chef, retail baker/pastry chef, wholesale baker/pastry chef, production supervisor, food batch maker, operations manager, sales representative or training specialist.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- prepare yeast rolls, breads, pies, tarts, cookies, doughnuts and frozen desserts based on local, regional and international traditions and diversity
- prepare and decorate cakes, cookies and centerpieces
- prepare pastry items and confectionery items
- make mathematical yield adjustments
- collect, organize and identify information regarding quality standards in bakery products
- utilize positive personal and interpersonal skills needed for supervision of employees and in the area of customer relations
- utilize technology to affect systems of operation within the bakery and pastry industry
- demonstrate basic food preparation skills with additional attention to food cost
- design and prepare artistic showpieces and centerpieces

PROGRAM REQUIREMENTS (TOTAL CREDITS – 45)

General Education

None Required

Major

BKP 141	Baking I	4
BKP 142	Baking II	3
BKP 243	Healthy Cooking Trends	4
BKP 245	Decorating Techniques	3
BKP 247	Specialty/Artistic Tech.	4
CUL 121	Apprenticeship I	2
CUL 122	Apprenticeship II	2
CUL 123	Apprenticeship III	2
CUL 224	Apprenticeship IV	2
FSM 105	Foods I	4
FSM 118	Sanitation	2
FSM 215	Food Purch. & Menu Mgmt.	3
		35

Other Required Courses

FSM 103	Intro to Hospitality	
or		3
FSM 113	Customer Service	
FSM 117	Wait Staff/Din. Rm. Trng.	1
FSM 218	Hospitality Marketing	
or		3
BKP 242	Bakery Merch. Tech.	
FSM 235	Supervision/Training	3
		10

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	
BKP 141	4	BKP 142	3	BKP 243	4	BKP 247	4
CUL 121	2	CUL 122	2	BKP 245	3	CUL 224	2
FSM 103 or 113	3	FSM 105	4	CUL 123	2	FSM 235	3
FSM 117	1	FSM 218 or BKP 242	3	FSM 215	3		**9**
FSM 118	2		**12**		**12**		
	12						

Baking and Pastry, AAS

NON-APPRENTICESHIP OPTION

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

Baking and pastry is one of eight majors comprising the college's Center for Culinary Arts and Hospitality. This curriculum is designed to prepare students for various positions in the baking industry. The program of study provides students with skills necessary for the production of a wide range of bakery products. Students are expected to be well groomed in compliance with standards of sanitation. Students will be required to provide medical proof of good physical health. Uniforms and program tool kit are required for all lab classes. Business attire may be required for some class assignments.

This program is accredited by the American Culinary Federation Education Foundation Accrediting Commission (ACFEFAC).

Career Opportunities

Graduates of the baking and pastry program may accept positions as: pastry cook, pastry chef, executive pastry chef, baker, cake decorator, baking sales representative, institutional baker/pastry chef, retail baker/pastry chef, wholesale baker/pastry chef, production supervisor, food batch maker, operations manager or training specialist.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- prepare yeasts rolls, breads, pies, cookies, doughnuts and frozen desserts based on local, regional and international traditions and diversity
- prepare and decorate cakes, cookies and centerpieces
- prepare pastry items and confectionary items
- prepare and evaluate baked items using both scratch and convenience techniques and products as to market usage
- make mathematical yield adjustments
- collect, organize and identify information regarding quality standards in bakery products
- utilize positive personal and interpersonal skills needed for supervision of employees and in the area of customer relations
- utilize technology to affect systems of operation within the bakery and pastry industry
- demonstrate basic food preparation skills with additional attention to food cost
- design and prepare artistic showpieces and centerpieces

PROGRAM REQUIREMENTS (TOTAL CREDITS — 60)

General Education

CPT 150	Microcomputer Con.	3
ENG 161	College Writing	3
ENG 163	Business Comm.	
or		3
ENG 164	Advanced Composition	
Humanities	Elective	
or		3
FSM 170	Food Culture & Religion	
Mathematics Elective		3
Social Science Elective		3
		18

Major

BKP 141	Baking I	4
BKP 142	Baking II	3
BKP 144	Baking III	3
BKP 242	Bakery/Deli Merch. Tech.	3
BKP 243	Healthy Cooking Trends	4
BKP 245	Decorating Techniques	3
BKP 247	Specialty/Artistic Tech.	4
FSM 118	Sanitation	2
FSM 219	Hospitality Internship	3
		29

Other Required Courses

FSM 103	Intro to Hospitality	
or		3
FSM 113	Customer Service	
FSM 105	Foods I	4
FSM 215	Food Purch. & Menu Mgmt.	3
FSM 235	Supervision & Training	3
		13

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**	
BKP 141	4	BKP 142	3	BKP 144	3	BKP 242	3
ENG 161	3	BKP 245	3	BKP 243	4	BKP 247	4
FSM 103 or 113	3	CPT 150	3	FSM 215	3	FSM 219	3
FSM 105	4	ENG 163 or 164	3	Humanities Elective or		Social Science Elective	3
FSM 118	2	FSM 235	3	FSM 170	3		**13**
	16		**15**	Mathematics Elective	3		
					16		

Baking & Pastry, Diploma

NON-APPRENTICESHIP OPTION

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

Baking and pastry is one of eight majors comprising the college's Center for Culinary Arts and Hospitality. This curriculum is designed to prepare students for various positions in the baking industry. The program of study provides students with skills necessary for the production of a wide range of bakery products. Students are expected to be well-groomed in compliance with standards of sanitation. Students will be required to provide medical proof of good physical health. Uniforms and program tool kit are required for all lab classes. Business attire may be required for some class assignments.

Career Opportunities

Graduates of the baking and pastry program may accept positions as: pastry cook, pastry chef, executive pastry chef, baker, cake decorator, baking sales representative, institutional baker/pastry chef, retail baker/pastry chef, wholesale baker/pastry chef, production supervisor, food batch maker, operations manager or training specialist.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- prepare yeast rolls, breads, pies, cookies, doughnuts and frozen desserts based on local, regional and international traditions and diversity
- prepare and decorate cakes, cookies and centerpieces
- prepare pastry items and confectionary items
- prepare and evaluate baked items using both scratch and convenience techniques and products as to market usage
- make mathematical yield adjustments
- collect, organize and identify information regarding quality standards in bakery products
- utilize positive personal and interpersonal skills needed for supervision of employees and in the area of customer relations
- utilize technology to affect systems of operation within the bakery and pastry industry
- demonstrate basic food preparation skills with additional attention to food cost
- design and prepare artistic showpieces and centerpieces

PROGRAM REQUIREMENTS (TOTAL CREDITS – 42)

General Education

None Required

Major

BKP 141	Baking I	4
BKP 142	Baking II	3
BKP 144	Baking III	3
BKP 242	Bakery/Deli Merch. Tech.	3
BKP 243	Healthy Cooking Trends	4
BKP 245	Decorating Techniques	3
BKP 247	Specialty/Artistic Tech.	4
FSM 118	Sanitation	2
FSM 219	Hospitality Internship	3
		29

Other Required Courses

FSM 103	Intro to Hospitality	
or		3
FSM 113	Customer Service	
FSM 105	Foods I	4
FSM 215	Food Purch. & Menu Mgmt.	3
FSM 235	Supervision & Training	3
		13

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**	
BKP 141	4	BKP 142	3	BKP 144	3
FSM 103	3	BKP 242	4	BKP 243	3
FSM 105	4	BKP 247	3	BKP 245	4
FSM 118	2	FSM 215	3	FSM 219	3
	13	FSM 235	3		**13**
			16		

Baking and Pastry, Certificate

NON-APPRENTICESHIP OPTION

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

The certificate is designed to provide entry and intermediate skills in the baking, deli and food production operations of the hospitality industries. A laboratory component is included in the Foods I, Baking I and Decorating Techniques courses. Sanitation standards are addressed through ServSafe as provided by the Educational Foundation of the National Restaurant Association. Uniforms and program tool kit are required for all lab classes. Students are expected to be well groomed in compliance with standards of sanitation. Business attire may be required for some class assignments. Medical proof of good physical health is required.

Career Opportunities

Graduates of the baking and pastry certificate program may accept positions as: pastry cook, baker, cake decorator, baking sales representative, institutional baker, retail baker, wholesale baker, production supervisor, food batch maker, operations manager or training specialist.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- prepare yeast rolls, breads, pies, cookies, doughnuts and frozen desserts based on provided formulas
- prepare and decorate cakes and cookies
- make mathematical yield adjustments
- demonstrate basic food preparation skills
- practice basic interpersonal and customer service skills and techniques

PROGRAM REQUIREMENTS (TOTAL CREDITS — 16)

BKP 141	Baking I	4
BKP 245	Decorating Techniques	3
FSM 105	Foods I	4
FSM 113	Customer Service	3
FSM 118	Sanitation	2
		16

Bionanotechnology, AAS

Division of Health Professions/Natural Sciences

This program focuses on the preparation of students for work in such fields as biotechnology and pharmaceutical research and manufacturing. Students learn to work with materials at the nano-level in analysis, production and data collection. Students will complete the first three semesters at WCCC and complete nanotechnology courses at the Nanofabrication Facility at Penn State University (PSU) in University Park, Pa. Students need to apply for admission for the bionanotechnology program at PSU at least one semester prior to the semester at PSU. Tuition for MPT courses completed at Penn State will be WCCC tuition.

Career Opportunities

Students enrolled in this program can work in occupations such as laboratory technician, quality control, and manufacturing technician in such fields as bionanotechnology research, medical laboratories and pharmaceutical manufacturing.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- transfer patterns using optical, e-beams, stamping and imprinting lithography
- operate optical, scanning probe, atomic force and electron microscopes
- work in a bionanotechnology laboratory or manufacturing facility
- demonstrate an understanding of bionanotechnology principles and concepts
- apply statistics to analyze scientific results
- operate and maintain bionanotechnology electromechanical equipment
- apply laboratory results to experimental applications

PROGRAM REQUIREMENTS (TOTAL CREDITS — 64)

General Education

CHM 107	Intro to Concepts Chem. I	4
CPT 150	Microcomputer Concepts	3
ENG 161	College Writing	3
ENG 164	Advanced Composition	3
MTH 157	College Algebra	3
Social Science Elective		3
		19

Major

MPT 211	Material, Safety & Equipment Overview for Nanotechnology	3
MPT 212	Basic Nanotechnology Processes	3
MPT 213	Materials in Nanotechnology	3
MPT 214	Patterning for Nanotechnology	3
MPT 215	Material Modification for Nanotechnology Applications	3
MPT 216	Characterization, Testing of Nanotechnology Structures & Materials	3
		18

(These courses will be completed at PSU)

Other Required Courses

BIO 171	Anatomy & Physiology I	4
BIO 172	Anatomy & Physiology II	4
BIO 265	Microbiology	4
CHM 108	Intro/Concepts Chem II	4
ELC 106	Circuits I	4
MTH 160	Intro to Statistics	3
PHY 107	Applied Physics	4
		27

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	
CHM 107	4	BIO 171	4	BIO 172	4	MPT 211	3
ELC 106	4	CHM 108	4	BIO 265	4	MPT 212	3
ENG 161	3	ENG 164	3	CPT 150	3	MPT 213	3
MTH 157	3	MTH 160	3	Social Science Elective	3	MPT 214	3
	14	PHY 107	4		**14**	MPT 215	3
			18			MPT 216	3
							18

Business

The growth of the Internet and the shift to a service-based economy, in which it is estimated that 98 percent of future job growth will be in service producing industries, has transformed the substantive content of the practice of management. The impact of these changes in the labor market has led to the need for new educational requirements and job skills both for those individuals currently employed in the field of management and for those who seek future careers in this field. These changes have led to an increased demand for management professionals.

Business Education

In response to the new dynamics of a service-based economy, the business department at WCCC offers a wide range of programs and courses designed to prepare students for the new challenges that await them in the field of management.

Associate of Applied Science Degree

The associate of applied science business degree program is offered in several areas of concentration: financial management, general management, human resource management, marketing management and small business management. All of the AAS areas of concentration contain a solid business core of general management courses augmented by several courses specific to each area of concentration. These areas of concentration were carefully selected to satisfy the current and projected needs of the business community. The associate of applied science degree provides a solid academic background in applied business management that can be completed in two years of full-time study.

Associate of Arts Degree

The Business Division also offers an associate of arts degree in Business Administration (see page 38). This degree option is designed specifically for students who plan to transfer to a four-year college or university to further their business education.

Business Diploma

A 36-credit business diploma is offered as a two-semester alternative to the more comprehensive associate degree program. The business diploma program provides a general, interdisciplinary experience into the field of business at an introductory level. The diploma program includes many courses that can be applied to the associate degree programs. A student can use the business diploma program either as a final educational outcome or as an intermediate step toward the attainment of an associate degree.

Business Certificate

WCCC offers several business certificates covering specific topics in business. Certificates are available in: finance, general management, human resource management, marketing management, real estate management and small business management. These short programs are designed for the student who is seeking a concentrated educational focus in a specific aspect of business. Business certificates are particularly advantageous for any college graduate or current student who is currently in the workforce and needs to update, upgrade or expand his or her education and/or training in a specific topical area.

Complete descriptions of these programs appear on pages 73-81.

Business, AAS

FINANCE OPTION

Division of Computer Technology/Business

The finance option of the business degree is designed to provide students with a broad basis in general business topics with an emphasis on finance theory and application.

Career Opportunities

The field of finance addresses how individuals and business institutions allocate and use resources over time while considering the risks associated with their projects. Finance is used by individuals, governments, businesses and nonprofit organizations. Careers in commercial banking, real estate financial planning and insurance are examples of career paths one can take after studying finance.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- exhibit effective written and oral communication skills
- demonstrate knowledge of the business environment
- demonstrate proficiency with the core principles of financial theory and practice
- practice effective problem-solving and decision-making skills
- recognize ethical and global dimensions in business practice

PROGRAM REQUIREMENTS (TOTAL CREDITS — 60)

General Education

BUS 120	Math of Business	3
CPT 150	Microcomputer Concepts	3
ECN 255	Macroeconomics	3
ENG 161	College Writing	3
ENG 163 or ENG 164	Business Communication or Advanced Composition	3
SPC 155 or SPC 156	Effective Speech or Interpersonal Commun.	3
		18

Major

BUS 140	Intro to Business	3
BUS 158	Prin. of Management	3
BUS 205	Business Law I	3
BUS 245	Principles of Marketing	3
BUS 296	Business Strategy✦	3
FIN 220	Business Finance	3
		18

Concentration

BUS 244	Business Statistics	3
BUS 288	Business Analytics	3
ECN 260	Money & Banking	3
FIN 246	Risk Management	3
FIN 266	Financial Statemnt. Anly.	3
		15

✦*capstone course*

Other Required Courses

ACC 155	Accounting I	3
ACC 156	Accounting II	3
ECN 256	Microeconomics	3
		9

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**	
BUS 120	3	ACC 155	3	ACC 156	3	BUS 245	3
BUS 140	3	BUS 158	3	BUS 244	3	BUS 288	3
CPT 150	3	BUS 205	3	ECN 260	3	BUS 296	3
ENG 161	3	ECN 255	3	FIN 220	3	FIN 246	3
ECN 256	3	ENG 163 or 164	3	SPC 155 or 156	3	FIN 266	3
	15		**15**		**15**		**15**

Business, AAS

GENERAL MANAGEMENT OPTION

Division of Computer Technology/Business

The general management option is designed to prepare students for entry-level management positions in a variety of organizations. The program of study develops basic competence in a broad range of essential business functions.

Career Opportunities

Graduates of the general management option may find employment as assistant managers, production managers, management trainees, department supervisors, quality control officers, warehouse managers and inventory managers. Job opportunities will be available in large corporations, a variety of small businesses and nonprofit organizations.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- exhibit effective written and oral communication skills
- demonstrate knowledge of the business environment
- demonstrate proficiency with the core principles of management theory and practice
- practice effective problem-solving and decision-making skills
- recognize ethical and global dimensions in business practice

PROGRAM REQUIREMENTS (TOTAL CREDITS — 60)

General Education

BUS 120	Math of Business	3
CPT 150	Microcomputer Concepts	3
ECN 255	Macroeconomics	3
ENG 161	College Writing	3
ENG 163	Business Communication	
or		3
ENG 164	Advanced Composition	
SPC 155	Effective Speech	
or		3
SPC 156	Interpersonal Commun.	
		18

Major

BUS 140	Intro to Business	3
BUS 158	Prin. of Management	3
BUS 205	Business Law	3
BUS 245	Prin. of Marketing	3
BUS 296	Business Strategy✦	3
FIN 220	Business Finance	3
		18

Concentration

BUS 241	Human Resource Mgmt.	3
BUS 244	Business Statistics	3
BUS 249	Labor Relations	3
BUS 258	Supervisory Mgmnt.	3
BUS 275	Organizational Behav.	3
BUS 288	Business Analytics	3
		18

✦*capstone course*

Other Required Courses

ACC 165	Acctg. for Managers	3
ECN 256	Microeconomics	3
		6

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**	
BUS 120	3	ACC 165	3	BUS 241	3	BUS 249	3
BUS 140	3	BUS 158	3	BUS 244	3	BUS 258	3
CPT 150	3	BUS 205	3	BUS 245	3	BUS 275	3
ECN 255	3	ECN 256	3	FIN 220	3	BUS 288	3
ENG 161	3	ENG 163 or 164	3	SPC 155 or 156	3	BUS 296	3
	15		**15**		**15**		**15**

Business, AAS

HUMAN RESOURCE MANAGEMENT OPTION

Division of Computer Technology/Business

The human resource management option is designed to prepare students for entry-level human resources management positions in a variety of organizations. The program of study develops basic competence in a focused range of essential human resources functions.

Career Opportunities

Graduates of the human resource management option may find employment as compensation management specialists, safety management specialists, and general human resources management specialists. Job opportunities will be available in large corporations, a variety of small businesses, and nonprofit organizations.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- exhibit effective written and oral communication skills
- demonstrate knowledge of the business environment
- demonstrate proficiency with the core principles of human resource theory and practice
- practice effective problem-solving and decision-making skills
- recognize ethical and global dimensions in business practice

PROGRAM REQUIREMENTS (TOTAL CREDITS — 60)

General Education

BUS 120	Math of Business	3
CPT 150	Microcomputer Concepts	3
ECN 255	Macroeconomics	3
ENG 161	College Writing	3
ENG 163	Business Communication	
or		3
ENG 164	Advanced Composition	
SPC 155	Effective Speech	
or		3
SPC 156	Interpersonal Comm.	
		18

Major

BUS 140	Intro to Business	3
BUS 158	Prin. of Management	3
BUS 205	Business Law	3
BUS 245	Prin. of Marketing	3
BUS 296	Business Strategy✦	3
FIN 220	Business Finance	3
		18

Concentration

BUS 241	Human Resource Mgmt.	3
BUS 249	Labor Relations	3
BUS 258	Supervisory Mgmnt.	3
BUS 275	Organizational Behavior	3
BUS 285	Compensation Mgmt.	3
FIN 246	Risk Management	3
		18

✦*capstone course*

Other Required Courses

ACC 165	Acctg. for Managers	3
ECN 256	Microeconomics	3
		6

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**	
BUS 120	3	ACC 165	3	BUS 241	3	BUS 258	3
BUS 140	3	BUS 158	3	BUS 245	3	BUS 275	3
CPT 150	3	BUS 205	3	BUS 249	3	BUS 285	3
ECN 255	3	ECN 256	3	FIN 220	3	BUS 296	3
ENG 161	3	ENG 163 or 164	3	SPC 155 or 156	3	FIN 246	3
	15		**15**		**15**		**15**

Business, AAS

MARKETING MANAGEMENT OPTION

Division of Computer Technology/Business

The marketing management option provides an introduction to business with an emphasis on marketing theory and application. The courses develop an understanding of the marketing process and provide insight into the use of advertising, sales, promotion and public relations.

Career Opportunities

Graduates of the marketing option may find employment as assistant marketing managers, junior advertising executives, product managers, product designers, administrative assistants, project managers, and in positions in public relations and media. Job opportunities will be available in large corporations, small businesses and nonprofit organizations.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- exhibit effective written and oral communication skills
- demonstrate knowledge of the business environment
- demonstrate proficiency with the core principles of marketing theory and practice
- practice effective problem-solving and decision-making skills
- recognize ethical and global dimensions in business practice

PROGRAM REQUIREMENTS (TOTAL CREDITS — 60)

General Education

BUS 120	Math of Business	3
CPT 150	Microcomputer Concepts	3
ECN 255	Macroeconomics	3
ENG 161	College Writing	3
ENG 163	Business Communication	
or		3
ENG 164	Advanced Composition	
SPC 155	Effective Speech	
or		3
SPC 156	Interpersonal Comm.	
		18

Major

BUS 140	Intro to Business	3
BUS 158	Prin. of Management	3
BUS 205	Business Law	3
BUS 245	Prin. of Marketing	3
BUS 296	Business Strategy✦	3
FIN 220	Business Finance	3
		18

Concentration

BUS 188	Social Media/Business	3
BUS 240	Techniques of Selling	3
MKT 242	Retailing	3
MKT 251	Consumer Behavior	3
MKT 252	Public Relations	3
MKT 253	Global Marketing	3
MKT 254	Advertising & Promotion	3
		21

✦*capstone course*

Other Required Courses

ACC 165	Acctg. for Managers	3
		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**	
BUS 120	3	ACC 165	3	BUS 188	3	BUS 240	3
BUS 140	3	BUS 158	3	BUS 245	3	BUS 296	3
CPT 150	3	BUS 205	3	FIN 220	3	MKT 252	3
ECN 255	3	ENG 163 or 164	3	MKT 242	3	MKT 253	3
ENG 161	3	SPC 155 or 156	3	MKT 251	3	MKT 254	3
	15		**15**		**15**		**15**

Business, AAS

SMALL BUSINESS MANAGEMENT OPTION

Division of Computer Technology/Business

The small business management option provides students with an introduction to business and the basic principles of management and emphasizes the skills needed to operate and administer a small business enterprise.

Career Opportunities

Graduates of the small business management option may find employment as assistant managers, junior department heads, administrative assistants and front-line supervisors in small businesses. Job opportunities will be available in small businesses, nonprofit organizations, and in franchise ownership and management.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- exhibit effective written and oral communication skills
- demonstrate knowledge of the business environment
- demonstrate proficiency with the core principles of small business theory and practice
- practice effective problem-solving and decision-making skills
- recognize ethical and global dimensions in business practice

PROGRAM REQUIREMENTS (TOTAL CREDITS — 61)

General Education

BUS 120	Math of Business	3
CPT 150	Microcomputer Concepts	3
ECN 255	Macroeconomics	3
ENG 161	College Writing	3
ENG 163	Business Communication	
or		3
ENG 164	Advanced Composition	
SPC 155	Effective Speech	
or		3
SPC 156	Interpersonal Comm.	
		18

Major

BUS 140	Intro to Business	3
BUS 158	Prin. of Management	3
BUS 205	Business Law	3
BUS 245	Prin of Marketing	3
BUS 296	Business Strategy✦	3
FIN 220	Business Finance	3
		18

Concentration

BUS 188	Social Media/Business	3
BUS 240	Techniques of Selling	3
BUS 260	Small Business Mgmt.	3
BUS 262	Efft. Entrepreneurship	3
FIN 155	Personal Finance	3
FIN 266	Financial Stmt. Anal.	3
RLS 209	Real Estate Finance	3
		21

✦*capstone course*

Other Required Courses

ACC 120	QuickBooks - Basics	1
ACC 165	Acctg. for Managers	3
		4

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**	
BUS 120	3	ACC 165	3	ACC 120	1	BUS 240	3
BUS 140	3	BUS 158	3	BUS 188	3	BUS 262	3
CPT 150	3	BUS 205	3	BUS 245	3	BUS 296	3
ENG 161	3	ECN 256	3	BUS 260	3	FIN 266	3
FIN 155	3	ENG 163 or 164	3	FIN 220	3	RLS 209	3
	15		**15**	SPC 155 or 156	3		**15**
					16		

Business, Diploma

Division of Computer Technology/Business

The business diploma program is designed to provide the student with a selection of general business management courses. Courses included in this diploma may be applied toward several Business AAS programs.

Career Opportunities

Graduates of the general management option may find employment as assistant managers, production managers, management trainees, quality control officers, warehouse managers and inventory managers.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- participate in business management functions
- conduct marketing analysis and manage sales
- conduct financial analysis and manage finances
- join a small business as a member of management

PROGRAM REQUIREMENTS (TOTAL CREDITS — 30)

General Education			Major			Other Required Courses		
BUS 120	Math of Business	3	BUS 140	Intro to Business	3	ACC 165	Acctg. for Managers	3
CPT 150	Microcomputer Concepts	3	BUS 158	Prin. of Management	3			**3**
ECN 255	Macroeconomics	3	BUS 205	Business Law	3			
ENG 161	College Writing	3	BUS 245	Prin. of Marketing	3			
		12	FIN 220	Business Finance	3			
					15			

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	
ACC 165	3	BUS 158	3
BUS 120	3	BUS 205	3
BUS 140	3	BUS 245	3
CPT 150	3	ECN 255	3
ENG 161	3	FIN 220	3
	15		**15**

Business, Certificate

SUPPLY CHAIN MANAGEMENT

Division of Computer Technology/Business

The supply chain management certificate program is designed for students who are interested in participating in the management of the distribution of products from manufacturing to the final destination. The fundamentals of supply chain management will be covered in four essential courses.

Career Opportunities

Graduates of the supply chain management certificate can expect to find employment as operations assistants, production supervisors, production planners, and warehouse and product distributions clerks.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- demonstrate proficiency in operations management
- perform the functions of shipping and warehousing
- demonstrate an understanding of stock replenishment and reorder
- demonstrate an understanding of inventory control methods

PROGRAM REQUIREMENTS (TOTAL CREDITS — 18)

BUS 158	Prin. of Management	3
BUS 210	Operations Mgmt.	3
BUS 220	Intro to Supply Chain	3
BUS 230	Procurement	3
BUS 244	Business Statistics	3
BUS 248	Logistics	3
		18

Business, Certificate

FINANCIAL MANAGEMENT

Division of Computer Technology/Business

The financial management certificate offers students the opportunity to gain proficiency in managing the financial function in a business. Courses included in this certificate may be applied toward the Business AAS Finance Option.

Career Opportunities

Graduates of the financial management option may find employment as bank managers, consumer loan officers, commercial lending managers, investment managers, insurance agents and financial analysts. Job opportunities will be available in the financial departments in large corporations and in commercial lending companies, consumer finance organizations, banks and insurance companies.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- participate in developing and implementing a financial plan
- manage the financial activities in a business organization
- engage in investment planning and credit management

PROGRAM REQUIREMENTS (TOTAL CREDITS — 18)

ACC 155	Accounting I	3
ECN 256	Microeconomics	3
ECN 260	Money & Banking	3
FIN 220	Business Finance	3
FIN 246	Risk Management	3
FIN 266	Financial Stmt. Anal.	3
		18

Business, Certificate

GENERAL MANAGEMENT

Division of Computer Technology/Business

The general management certificate is designed to provide an introductory view of general management in an enterprise environment. Courses included in this certificate may be applied toward the Business AAS General Mangement Option.

Career Opportunities

The general management certificate provides students with employment opportunities as assistant managers, production managers, management trainees, department supervisors, quality control officers, warehouse managers and inventory managers. Job opportunities will be available in large corporations, a variety of small businesses and nonprofit organizations.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- participate in the management of a variety of business types
- become skilled in organizing and managing human resources
- act as an administrative assistant to business executives and managers

PROGRAM REQUIREMENTS (TOTAL CREDITS — 18)

ACC 165	Acctg. for Managers	3
BUS 120	Math of Business	3
BUS 140	Intro to Business	3
BUS 158	Prin. of Management	3
BUS 245	Prin. of Marketing	3
FIN 220	Business Finance	3
		18

Business, Certificate

HUMAN RESOURCE MANAGEMENT

Division of Computer Technology/Business

The human resource management certificate is designed to prepare students for entry-level human resources management positions in a variety of organizations. The program of study develops basic competence in a focused range of essential human resources functions. Courses included in this certificate may be applied toward the Business AAS Human Resource Management Option.

Career Opportunities

Graduates of the human resource management certificate may find employment as compensation management specialists, safety management specialists and general human resources management specialists. Job opportunities will be available in large corporations, a variety of small businesses and nonprofit organizations.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- implement marketing/sales skills applicable to the customer orientation of the employer
- supervise human resources in an organization
- utilize negotiating skills with employees and/or local union officials

PROGRAM REQUIREMENTS (TOTAL CREDITS — 18)

BUS 241	Human Resource Mgmt.	3
BUS 249	Labor Relations	3
BUS 258	Supervisory Mgmt.	3
BUS 275	Organizational Behavior	3
BUS 285	Compensation Mgmt.	3
FIN 246	Risk Management	3
		18

Business, Certificate

MARKETING MANAGEMENT

Division of Computer Technology/Business

The marketing management certificate offers students the opportunity to gain proficiency in managing the marketing function in a business. Courses included in this certificate may be applied toward the Business AAS Marketing Management Option.

Career Opportunities

Graduates of the marketing option may find employment as assistant marketing managers, junior advertising executives, product managers, product designers, administrative assistants, project managers, and in positions in public relations and media. Job opportunities will be available in large corporations, small businesses and in nonprofit organizations.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- participate in developing and implementing a marketing plan
- manage advertising, promotion and public relations activities in a marketing organization
- engage in planning and developing global marketing tasks

PROGRAM REQUIREMENTS (TOTAL CREDITS — 18)

BUS 188	Social Media/Business	3
BUS 245	Prin. of Marketing	3
MKT 242	Retailing	3
MKT 251	Consumer Behavior	3
MKT 253	Global Marketing	3
MKT 254	Advertising & Promotion	3
		18

Business, Certificate

REAL ESTATE

Division of Computer Technology/Business

The real estate certificate offers students the opportunity to gain proficiency in real estate brokerage and management.

Career Opportunities

Graduates of the real estate option may find employment as real estate brokers, property managers, property developers and financial advisors for real estate transactions. Job opportunities will be available in real estate firms, property management firms and in corporations that have real estate departments.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- participate in the buying and selling of real estate
- manage rental properties
- engage in real estate transactions

PROGRAM REQUIREMENTS (TOTAL CREDITS — 16)

BUS 240	Techniques of Selling	3
RLS 101	Fund. of Real Estate	2
RLS 102	Real Estate Practices	2
RLS 205	Property Management	3
RLS 209	Real Estate Finance	3
RLS 210	Law of Real Estate	3
		16

Business, Certificate

SMALL BUSINESS MANAGEMENT

Division of Computer Technology/Business

The small business management certificate is designed to provide the student with an introduction to the ownership, operation and management of small business ventures. Courses included in this certificate may be applied toward the Business AAS Small Business Management Option.

Career Opportunities

Graduates of the small business management option may find employment as assistant managers, junior department heads, administrative assistants and front-line supervisors in small businesses. Job opportunities will be available in small businesses, nonprofit organizations, and in franchise ownership and management.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- participate in the management of small businesses
- become skilled in starting and managing small businesses
- act as an administrative assistant to a small business owner

PROGRAM REQUIREMENTS (TOTAL CREDITS —18)

BUS 188	Social Media/Business	3
BUS 240	Techniques of Selling	3
BUS 260	Small Business Mgmt.	3
BUS 262	Effective Entrepreneurship	3
FIN 155	Personal Finance	3
FIN 266	Financial Stmnt. Anly.	3
		18

Computer Information Security, AAS

Division of Computer Technology/Business

The Computer Information Security program provides students with extensive hands-on instruction in all facets of information security, network security, and PC security. Students will gain experience with the tools and techniques of security professionals. Topics covered include computer forensics, intrusion detection, anti-virus software, and firewalls, among others.

Career Opportunities

Graduates may find employment as analysts or consultants in private investigation firms, private security firms and supporting positions with local, state, and federal law enforcement agencies. Networking professionals may find employment as corporate security managers, Internet security consultants, security technicians, or other network positions with an emphasis on security.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- identify and assess potential security risks against PCs, web sites, programs and networks
- develop and implement a security plan to minimize security threats and manage security risks
- develop familiarity with current security software and hardware
- assume the duties and responsibilities of a corporate or government agency security officer
- adhere to a moral code of ethics and understand the legal responsibilities in the security field
- develop oral, written and listening communication skills

PROGRAM REQUIREMENTS (TOTAL CREDITS — 60)

General Education

CPT 150	Microcomputer Concepts	3
ENG 161	College Writing	3
ENG 162	Technical Comm.	
or		3
ENG 163	Business Commun.	
SPC 155	Effective Speech	
or		3
SPC 156	Interpersonal Comm.	
Mathematics Elective		3
Social Science Elective		3
		18

Major

CIS 168	Prin. of Info Security	3
CIS 209	LAN Security	3
CIS 210	Internet Security	3
CIS 212	Computer Forensics	3
CPT 145	Intro/Comp Tech.	3
CPT 181	Intro/Telecomm.	3
CPT 182	Operating Systems	3
CPT 183	Local Area Networks	3
CPT 214	Wireless Commun.	3
CPT 248	PC Hardware	3
CPT 249	PC Troubleshooting	3
CPT 256	Linux Desktop	3
CPT 286	Sys. Anal. & Des.✦	3
		39

✦*capstone course*

Other Required Courses

HMS 101 Orientation to HSM	3
	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**	
CPT 145	3	CIS 168	3	CIS 210	3	CIS 209	3
CPT 150	3	CIS 212	3	CPT 214	3	CPT 249	3
CPT 181	3	CPT 182	3	CPT 248	3	CPT 256	3
ENG 161	3	CPT 183	3	HSM 101	3	CPT 286	3
Mathematics Elective	3	ENG 162 or 163	3	SPC 155 or 156	3	Social Science Elective	3
	15		**15**		**15**		**15**

Computer Information Security, Certificate

Division of Computer Technology/Business

This certificate is designed to provide an introduction to the theories and practices associated with information security. Law enforcement professionals can enhance their knowledge of cyber crimes by becoming more familiar with the intricacies of computer evidence handling and documentation, and cyber crime determination, evaluation, and prosecution. Current computer professionals can expand upon their existing networking experience by increasing their knowledge of information security and expanding their careers into the information security discipline. This certificate is currently available online.

Career Opportunities

Graduates may find employment opportunities in private investigation firms, private security firms as well as local law enforcement agencies. Networking professionals may find employment as corporate security managers, Internet security consultants, security technicians or other network positions with an emphasis on security.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- communicate with law enforcement professionals and network professionals with respect to cyber crimes and information security
- determine the scope and cost of specific security intrusions
- evaluate potential security vulnerabilities
- administer local area network (LAN), wide area network (WAN), and Internet security procedures and devices

PROGRAM REQUIREMENTS (TOTAL CREDITS — 18)

General Education		
CIS 168	Prin. of Info Security	3
CIS 209	LAN Security	3
CIS 210	Internet Security	3
CIS 212	Computer Forensics	3
CPT 182	Operating Systems	3
CPT 183	Local Area Networks	3
		18

Computer Numerical Control Technology, AAS

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

In Westmoreland County, employment in the machining industry is increasing at a steady rate, creating a need for more trained machinists. In order to compete with foreign manufacturers, Westmoreland County shops are increasing the number of computer numerical controlled machines as well as other automated equipment. This has created a need for technicians, programmers and operators that is not being met at the present time.

Career Opportunities

Students completing this program can expect to be employed as CNC programmers, operators, technicians and coordinators. This program can also benefit those who have a desire to be designers or managers.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- develop the ability to execute quantitative design of machine products
- identify the basic components of a CADD/CAM system (hardware and software)
- perform an infinite number of 2-D machine tool path computations necessary to produce an advanced drafting and design portfolio
- apply concepts from physics, engineering, mechanics, mathematics, and drafting to the manufacturing of durable mechanical machines and products
- analyze and select appropriate materials and components for designing and manufacturing industrial products
- communicate effectively and appropriately; record and report information significant to the job

PROGRAM REQUIREMENTS (TOTAL CREDITS — 64)

General Education		
DFT 258	AutoCAD	4
ENG 161	College Writing	3
ENG 162	Technical Commun.	3
MTH 108	Math for the Tech. I*	4
MTH 109	Math for the Tech. II*	4
Social Science Elective		3
		21

Major		
CNC 111	CNC I	4
CNC 112	CNC II	5
CNC 213	CNC III	5
CNC 214	CNC IV	6
MTT 111	Machining I	4
		24

Other Required Courses		
DFT 112	Intro to Design Mat. & Pro.	3
DFT 207	Tool Design	4
DFT 266	AutoDesk Inventor	4
MTT 101	Blueprints	4
MTT 201	Inspection	4
		19

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students should consult their advisor.

Fall Semester		Spring Semester		Fall Semester		Spring Semester	
CNC 111	4	CNC 112	5	CNC 213	5	CNC 214	6
MTH 108	4	DFT 112	3	DFT 207	4	DFT 266	4
MTT 101	4	DFT 258	4	ENG 161	3	ENG 162	3
MTT 111	4	MTH 109	4	MTT 201	4	Social Science Elective	3
	16		**16**		**16**		**16**

*Students planning to transfer to a four-year institution should consult their advisor for course substitutions.

Computer Numerical Control I, Certificate

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

In Westmoreland County, employment in the machining industry is increasing at a steady rate, creating a need for more trained machinists. In order to compete with foreign manufacturers, Westmoreland County shops are increasing the number of computer numerical controlled machines as well as other automated equipment. This has created a need for technicians, programmers and operators that is not being met at the present time.

This is the first of four certificate programs for students studying the computer numerical control of machining equipment. Students will begin their studies in software programming of CNC mills and lathes by using MasterCAM software.

Career Opportunities

Production machinists produce large quantities of one part, especially parts requiring the use of complex operations and great precision. Many modern machine tools are computer numerically controlled (CNC). CNC machines control the cutting tool speed and do all necessary cuts to create a part. The machinist determines the cutting path, the speed and does all necessary cuts to create a part. The machinist determines the cutting path, the speed of the cut, and the feed rate by programming instructions into the CNC machine. Many machinists must be able to use both manual and computer-controlled machinery in their job. Job opportunities would be CNC machinist, CNC operator and CNC programmer.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- explain the G codes and M codes used in CNC programming
- write CNC machine code using standard G-code formatting
- safely start-up and operate CNC mills and lathes
- correctly set-up tooling and produce accurate parts

PROGRAM REQUIREMENTS (TOTAL CREDITS-16)

	Major	
CNC 111	CNC I	4
MTT 111	Machining I	4
MTT 101	Blueprints	4
MTH 108	Math for Technologies I	4
		16

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Fall Semester	
CNC 111	4
MTT 111	4
MTT 101	4
MTH 108	4
	16

Computer Numerical Control II, Certificate

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

In Westmoreland County, employment in the machining industry is increasing at a steady rate, creating a need for more trained machinists. In order to compete with foreign manufacturers, Westmoreland County shops are increasing the number of computer numerical controlled machines as well as other automated equipment. This has created a need for technicians, programmers and operators that is not being met at the present time.

This is the second of four certificate programs for students studying the computer numerical control of machining equipment. Students will continue their studies in software programming of CNC mills and lathes by using MasterCAM software.

Career Opportunities

Production machinists produce large quantities of one part, especially parts requiring the use of complex operations and great precision. Many modern machine tools are computer numerically controlled (CNC). CNC machines control the cutting tool speed and do all necessary cuts to create a part. The machinist determines the cutting path, the speed and does all necessary cuts to create a part. The machinist determines the cutting path, the speed of the cut, and the feed rate by programming instructions into the CNC machine. Many machinists must be able to use both manual and computer-controlled machinery in their job. Job opportunities would be CNC machinist, CNC operator and CNC programmer.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- produce geometry and toolpaths using MasterCAM software
- generate CNC G-code programs using MasterCAM postprocessors
- verify program integrity using the CNC equipment simulators
- setup and produce accurate parts using the developed programs

PROGRAM REQUIREMENTS (TOTAL CREDITS – 16)

	Major	
CNC 112	CNC II	5
DFT 112	Intro to Des., Materials & Processing	3
DFT 258	AutoCAD	4
MTH 109	Math for Technologies II	4
		16

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Spring	
CNC 112	5
DFT 112	3
DFT 258	4
MTH 109	4
	16

Computer Numerical Control III, Certificate

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

In Westmoreland County, employment in the machining industry is increasing at a steady rate, creating a need for more trained machinists. In order to compete with foreign manufacturers, Westmoreland County shops are increasing the number of computer numerical controlled machines as well as other automated equipment. This has created a need for technicians, programmers and operators that is not being met at the present time.

This is the third of four certificate programs for students studying the computer numerical control of machining equipment. Students will continue their studies in software programming of CNC mills and lathes by using MasterCAM software.

Career Opportunities

Production machinists produce large quantities of one part, especially parts requiring the use of complex operations and great precision. Many modern machine tools are computer numerically controlled (CNC). CNC machines control the cutting tool speed and do all necessary cuts to create a part. The machinist determines the cutting path, the speed of the cut and does all necessary cuts to create a part. The machinist determines the cutting path, the speed of the cut, and the feed rate by programming instructions into the CNC machine. Many machinists must be able to use both manual and computer-controlled machinery in their job. Job opportunities would be CNC machinist, CNC operator and CNC programmer.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- generate complex parts using advanced MasterCAM features
- troubleshoot and verify advanced G-code programs
- start-up and operate 4 and 5 axis CNC equipment
- setup and manufacture accurate machined parts

PROGRAM REQUIREMENTS (TOTAL CREDITS-16)

	Major	
CNC 213	CNC III	5
DFT 207	Tool Design	4
ENG 161	College Writing	3
MTT 201	Inspection	4
		16

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Fall	
CNC 213	5
DFT 207	4
ENG 161	3
MTT 201	4
	16

Computer Numerical Control IV, Certificate

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

In Westmoreland County, employment in the machining industry is increasing at a steady rate, creating a need for more trained machinists. In order to compete with foreign manufacturers, Westmoreland County shops are increasing the number of computer numerical controlled machines as well as other automated equipment. This has created a need for technicians, programmers and operators that is not being met at the present time.

This is the fourth of four certificate programs for students studying the computer numerical control of machining equipment. Students will continue their studies in software programming of CNC mills and lathes by using MasterCAM software.

Career Opportunities

Production machinists produce large quantities of one part, especially parts requiring the use of complex operations and great precision. Many modern machine tools are computer numerically controlled (CNC). CNC machines control the cutting tool speed and do all necessary cuts to create a part. The machinist determines the cutting path, the speed of the cut and does all necessary cuts to create a part. The machinist determines the cutting path, the speed of the cut, and the feed rate by programming instructions into the CNC machine. Many machinists must be able to use both manual and computer-controlled machinery in their job. Job opportunities would be CNC machinist, CNC operator and CNC programmer.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- produce finished parts from raw materials using CNC software and equipment
- enumerate and follow the appropriate production steps to produce parts
- generate the tooling and fixturing needed to produce complex parts
- demonstrate the ability to analyze and correct errors in production

PROGRAM REQUIREMENTS (TOTAL CREDITS – 16)

	Major	
CNC 214	CNC IV	6
DFT 266	AutoDesk Inventor	4
ENG 162	Technical Comm.	3
Social Science Elective		3
		16

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Spring

CNC 214	6
DFT 266	4
ENG 162	3
Social Science Elective	3
	16

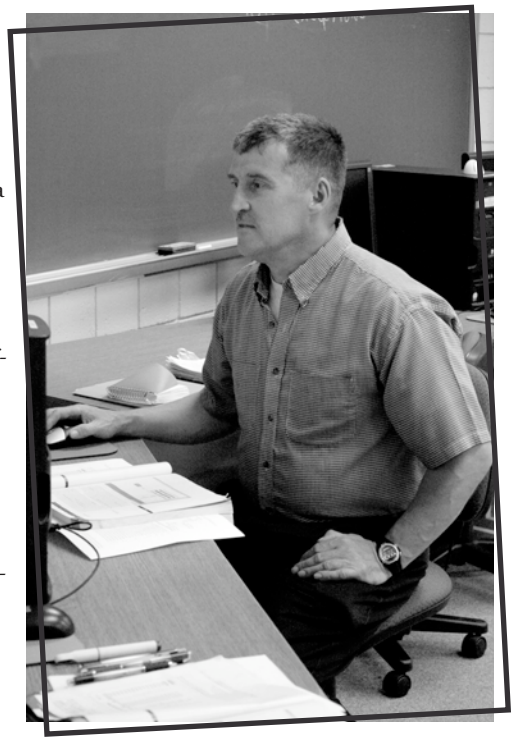
Computer Technology

Technology and Change

Changes in the information technology industry are coming at an accelerated rate. The impact of the rapid growth of the Internet on our society is profound and far-reaching. As a stimulus, the Internet has led to new computer programming languages, the expanded use of databases and wide-area networking, and Web site development for electronic commerce. These changes have created an unprecedented demand for computer professionals with a wide variety of skills and knowledge.

The Computer Technology Department

The computer technology department at WCCC recognizes the changing nature of the computing profession and offers a wide range of programs and courses designed to prepare students for the challenges in the field of information technology. The associate of applied science degree in computer technology offers four options: programming, networking, technical support and telecommunications. The diploma of computer technology is a shorter-term program that covers the fundamentals of computer technology. There are also several computer technology certificate programs that cover selected topics in depth.



Associate of Applied Science Degree

The computer technology associate of applied science degree program is offered as four options: database/programming, networking, technical support and telecommunications. Each of these areas of concentration was chosen to reflect the projected needs of the information technology industry. The AAS degree program options provide a solid background along with a strong concentration in each area. The courses in these programs have been carefully selected to reflect those disciplines and skills that are in strong demand in the computing profession and that have significant growth potential. The associate of applied science degree in computer technology has been designed for completion in two years of full-time study.

Computer Technology Diploma

The computer technology diploma is a two-semester program designed to be a shorter alternative to the more comprehensive associate degree program. The diploma program provides an interdisciplinary look at computer technology at the introductory level. It includes many courses that can be applied to the associate degree. The diploma program can be used by the student as a final product or as an intermediate step toward the attainment of the associate degree.

Computer Technology Certificate

WCCC offers several certificates covering selected technical topics. Certificates are available in: database development, fiber optic technologies, networking, microcomputer support, programming, web development and PC Repair/A+. These short programs are designed for the student who is seeking a concentrated education in a specific aspect of computer technology. Certificates are particularly advantageous for the WCCC graduate or student in the workforce who needs to upgrade or expand his or her technical skills. Certificate courses can be applied toward AAS degree options.

Complete descriptions of these programs appear on pages 90-99.

Computer Technology, AAS

NETWORKING OPTION

Division of Computer Technology/Business

The networking option of the computer technology program provides students with extensive hands-on instruction in all facets of local area network operation and administration. Students will learn to install, operate, maintain and troubleshoot these products in a corporate enterprise-networking environment.

Career Opportunities

Graduates of the networking option may find employment as network administrators, network engineers, systems analysts, network technicians, technical sales representatives, customer service representatives, technical support analysts or IT trainers. Job opportunities will be available with network consulting and design firms as well as with any company that deploys a local area network.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- install, configure, maintain and troubleshoot computer hardware
- analyze and design networking solutions for the organization
- configure and maintain network resources to satisfy organization requirements
- provide training and support to end users of networked equipment
- identify the resources needed to advance technical skills as the networking field changes
- establish proficiency in Microsoft Windows and Linux networking operating systems
- develop oral, written and listening communication skills
- integrate and apply mathematical skills to solve quantitative problems

PROGRAM REQUIREMENTS (TOTAL CREDITS — 63)

General Education

CPT 150	Microcomputer Concepts	3
ENG 161	College Writing	3
ENG 162	Technical Commun.	
or		3
ENG 163	Business Commun.	
SPC 155	Effective Speech	
or		3
SPC 156	Interpersonal Comm.	
Mathematics Elective		3
Social Science Elective		3
		18

Major

CIS 209	LAN Security	3
CPT 145	Intro/Computer Tech.	3
CPT 181	Intro to Telecomm.	3
CPT 182	Operating Systems	3
CPT 183	Local Area Networks	3
CPT 198	Fiber Optic Tech.	3
CPT 214	Wireless Commun.	3
CPT 219	Fiber Optics Anlys. Dsgn.	3
CPT 222	Fiber Optic Testing	3
CPT 248	PC Hardware	3
CPT 249	PC Troubleshooting	3
CPT 256	Linux Desktop	3
CPT 262	Windows Client Server	3
CPT 264	Windows Server Mgmt.	3
CPT 286	Sys. Anal. & Design✦	3
		45

✦*capstone course*

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**	
CPT 145	3	CIS 209	3	CPT 214	3	CPT 222	3
CPT 150	3	CPT 182	3	CPT 219	3	CPT 249	3
CPT 181	3	CPT 183	3	CPT 248	3	CPT 256	3
ENG 161	3	CPT 198	3	CPT 262	3	CPT 264	3
Mathematics Elective	3	ENG 162 or 163	3	SPC 155 or 156	3	CPT 286	3
	15	Social Science Elective	3		**15**		**15**
			18				

Computer Technology, AAS

PROGRAMMING FOR THE ENTERPRISE OPTION

Division of Computer Technology/Business

Behind every application lies a database of storage of one of the most valuable assets of any enterprise - its data. Developed in consultation with professionals in the field, the programming for the enterprise option provides the student with a strong background in the programming and data extraction skills necessary for success as a programmer by providing hands-on experience in Visual Basic, JAVA, SQL and current software tools. Working independently or in teams, students learn to design, develop and debug programs to process this data to solve problems typically found in an enterprise.

Career Opportunities

Graduates of the programming for the enterprise option may find employment as computer programmers, junior systems analysts, programmer analysts, technical sales representatives, technical support analysts, or web developers. Job opportunities will be available with consulting firms, Internet companies, Web development firms, and in organizations requiring development of in-house decision support or ad hoc systems.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- analyze problems for development and design of information processing solutions
- use a programming language to develop efficient and well-structured application programs
- function as a member of a development team to determine program intent, output requirements, input needed and processing sequences for new programs
- maintain existing programs as internal and external requirements change
- develop test modules to verify program accuracy
- identify the resources needed to advance technical skills as the computer field changes
- develop oral, written, and listening communication skills
- integrate and apply mathematical skills to solve quantitative problems

PROGRAM REQUIREMENTS (TOTAL CREDITS – 61)

General Education

CPT 150	Microcomputer Concepts	3
ENG 161	College Writing	3
ENG 162	Technical Commun.	
or		3
ENG 163	Business Commun.	
MTH 157	College Alegbra	3
SPC 155	Effective Speech	
or		3
SPC 156	Interpersonal Comm.	
Social Science Elective		3
		18

Major

CPT 145	Intro/Computer Tech.	3
CPT 160	Intro to Programming	3
CPT 162	Visual Basic I	3
CPT 163	Java Programming I	3
CPT 180	C++ Programming	3
CPT 182	Operating Systems	3
CPT 196	Access for Windows	3
CPT 203	HTML and CSS	3
CPT 206	JavaScript	3
CPT 213	Java Programming II	3
CPT 271	PHP & SQL	3
CPT 286	Sys. Analysis & Dsgn.✦	3
WEB 188	Social Media	3
WEB 201	Content Web Dvlpmt.	3
		42

✦*capstone course*

Other Courses

OFT 100	Basic Keyboarding	1
		1

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**	
CPT 145	3	CPT 162	3	CPT 163	3	CPT 180	3
CPT 150	3	CPT 182	3	CPT 203	3	CPT 206	3
CPT 160	3	CPT 196	3	CPT 271	3	CPT 213	3
ENG 161	3	ENG 162 or 163	3	SPC 155 or 156	3	CPT 286	3
MTH 157	3	WEB 188	3	WEB 201	3	Social Science Elective	3
OFT 100	1		**15**		**15**		**15**
	16						

Computer Technology, AAS

TECHNICAL SUPPORT OPTION

Division of Computer Technology/Business

The technical support option of the computer technology program provides students with a strong foundation in microcomputer applications, including operating systems, PC hardware, productivity applications and networking. Emphasis will be placed on the installation, configuration, operation, maintenance and troubleshooting of microcomputer hardware systems, operating systems, websites and application software.

Career Opportunities

Graduates of the technical support option may find employment as technical support technicians, LAN technicians, junior systems analysts, technical sales representatives, customer service technicians, help-desk analyst, IT trainers and web content developers. Job opportunities will be available with companies in the fields of hardware manufacturing, software publishing, PC consulting, IT engineering and sales, and any company deploying microcomputers in the workplace.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- understand the concepts of computer design and operation
- install, configure and troubleshoot a variety of operating systems
- install, configure and troubleshoot popular microcomputer applications
- describe the principles of WAN/LAN network administration
- maintain website content
- troubleshoot and repair computer hardware and software
- install and configure network operating systems
- develop competency in the Microsoft Office productivity suite
- develop oral, written and listening communication skills
- integrate and apply mathematical skills to solve quantitative problems

PROGRAM REQUIREMENTS (TOTAL CREDITS — 61)

General Education

CPT 150	Microcomputer Concepts	3
ENG 161	College Writing	3
ENG 162	Technical Commun.	
or		3
ENG 163	Business Commun.	
SPC 155	Effective Speech	
or		3
SPC 156	Interpersonal Comm.	
Mathematics Elective		3
Social Science Elective		3
		18

Major

CPT 145	Intro/Computer Tech.	3
CPT 182	Operating Systems	3
CPT 183	Local Area Networks	3
CPT 195	Excel for Windows	3
CPT 196	Access for Windows	3
CPT 201	Web Content Dvlpmnt.	3
CPT 248	PC Hardware	3
CPT 249	PC Troubleshooting	3
CPT 278	Integ. Office Applctns.✦	3
CPT 259	User Support Operations	3
OFT 185	PowerPoint	1
OFT 190	Word for Windows	3
WEB 277	Elect. Commerce Tech.	3
		37

✦*capstone course*

Other Courses

OFT 210	Office Technologies	3
OFT 235	Customer Service	3
		6

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**	
CPT 145	3	CPT 182	3	CPT 196	3	CPT 249	3
CPT 150	3	CPT 183	3	CPT 201	3	CPT 259	3
ENG 161	3	CPT 195	3	CPT 248	3	CPT 277	3
Mathematics Elective	3	OFT 190	3	ENG 162 or 163	3	CPT 278	3
Social Science Elective	3	OFT 235	3	OFT 185	1	SPC 155 or 156	3
	15		**15**	OFT 210	3		**15**
					16		

Computer Technology, AAS

TELECOMMUNICATIONS OPTION

Division of Computer Technology/Business

The telecommunications option of the computer technology program provides an intensive, hands-on curriculum focusing on the emerging field of telecommunications technology. This program of study will prepare students to design, build, maintain and troubleshoot advanced computer networks. Emphasis will be placed on local and wide-area network systems, the Internet, IP telephony, fiber-optic media and wireless communications. Four Cisco Networking Academy classes are included in this program.

Career Opportunities

Graduates of the telecommunications option may find employment as network support technicians, WAN/LAN technicians, junior systems analysts, customer service representatives, help-desk analysts or IT trainers. Job opportunities are available with companies in the fields of telecommunications, consulting, the Internet, e-commerce, IT engineering and sales, and any business deploying a local- or wide-area network.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- understand the fundamentals of telecommunications systems
- install, configure, maintain and troubleshoot telecommunications hardware devices
- design and specify a telecommunications network
- design, configure, maintain and troubleshoot wireless communications systems
- configure, maintain and troubleshoot network routers and switches
- deploy the technology of IP telephony and digital voice communications systems
- develop expertise with long- and short-haul fiber optic media and associated equipment
- implement Windows-based networks in an enterprise environment
- employ proper troubleshooting methods for optimal diagnosis and repair of telecom problems
- develop oral, written and listening communication skills
- integrate and apply mathematical skills to solve quantitative problems
- read, understand and apply information from oral and written material

PROGRAM REQUIREMENTS (TOTAL CREDITS — 61)

General Education		
CPT 150	Microcomputer Concepts	3
ENG 161	College Writing	3
ENG 162	Technical Commun.	
or		
ENG 163	Business Commun.	3
or		
ENG 164	Advanced Composition	
SPC 155	Effective Speech	
or		3
SPC 156	Interpersonal Comm.	
Mathematics Elective		3
Social Science Elective		3
		18

Major		
CIS 168	Intro to Comp. Info Security	3
CIS 210	Internet Security	3
CPT 160	Intro to Programming	3
CPT 171	Telecom Fundamentals	5
CPT 180	C++ Programming	3
CPT 182	Operating Systems	3
CPT 198	Fiber-Optic Tech.	3
CPT 211	Routing Technologies	5
CPT 214	Wireless Commun.	3
CPT 248	PC Hardware	3
CPT 256	Linux Desktop	3
CPT 262	Windows Client Server	3
CPT 286	Sys. Analysis & Dsgn.✦	3
		43

✦*capstone course*

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**	
CPT 150	3	CPT 171	5	CIS 168	3	CIS 210	3
CPT 160	3	CPT 180	3	CPT 211	5	CPT 256	3
CPT 248	3	CPT 182	3	CPT 214	3	CPT 286	3
ENG 161	3	CPT 198	3	CPT 262	3	Social Science Elective	3
Mathematics Elective	3	ENG 162, 163 or 164	3	SPC 155 or 156	3		**12**
	15		**17**		**17**		

Computer Technology, Diploma

COMPUTER TECHNOLOGY

Division of Computer Technology/Business

Students develop skills in functional applications of the computer to a business environment. The diploma program introduces students to various aspects of the computer field and can be used as a goal or as an interim step in obtaining the AAS degree.

Career Opportunities

Graduates of the computer technology diploma program may find employment as technical support technicians, technical sales representatives, customer service technicians, help-desk analysts and IT trainers.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- install and maintain computer hardware and software
- use office productivity software to implement software solutions
- identify the resources needed to advance technical skills
- develop oral, written and listening communication skills

PROGRAM REQUIREMENTS (TOTAL CREDITS — 30)

General Education			Major		
CPT 150	Microcomputer Concepts	3	CPT 145	Intro/Computer Tech.	3
ENG 161	College Writing	3	CPT 181	Intro to Telecomm.	3
ENG 162	Technical Commun.		CPT 182	Operating Systems	3
or			CPT 248	PC Hardware	3
ENG 163	Business Commun.	3	CPT 249	PC Troubleshooting	3
Mathematics Elective		3	WEB 188	Social Media	3
		12			**18**

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	
CPT 150	3	CPT 145	3
CPT 182	3	CPT 181	3
CPT 248	3	CPT 249	3
ENG 161	3	ENG 162 or 163	3
Mathematics Elective	3	WEB 188	3
	15		**15**

Computer Technology, Certificate

DATABASE APPLICATION DEVELOPMENT

Division of Computer Technology/Business

The database application development certificate provides students with an intensive experience in relational database management systems with emphasis on Access and Oracle SQL products. Courses included in this certificate may be applied toward the Computer Technology AAS Programming for the Enterprise Option.

Career Opportunities

Graduates of the database application development certificate may find employment as database administrators, database operators, customer service representatives, technical sales representatives, technical support analysts and database trainers.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- analyze problems for development and design of information processing solutions
- use appropriate design techniques to create data structures that provide for data accuracy
- become proficient in the use of current database management software

PROGRAM REQUIREMENTS (TOTAL CREDITS — 18)

CPT 145	Intro to Comp. Tech.	3
CPT 150	Microcomputer Concepts	3
CPT 160	Intro to Programming	3
CPT 196	Access for Windows	3
CPT 271	PHP & SQL	3
CPT 286	Sys. Anal. & Design	3
		18

Computer Technology, Certificate

FIBER OPTIC TECHNOLOGIES

Division of Computer Technology/Business

The fiber optic technologies certificate provides the student with an intensive, hands-on educational experience in fiber optic technologies, focusing on multimode and single-mode fiber optic applications, installation, restoration, design and troubleshooting analysis. This certificate places emphasis on "fiber to the home" cabling systems, which is important to meeting the current employment opportunities for deploying "fiber to the home" technology upgrades in the telecommunication industry. Fiber optic laser based systems will be investigated. Fiber to the premise system installation, restoration and troubleshooting along with optical electronic interfacing will be deployed in the state-of-the-art fiber optics lab. This program of study will prepare students to design, build, maintain, and troubleshoot fiber optic networks. Courses included in this certificate may be applied toward the Computer Technology AAS Networking Option.

Career Opportunities

Graduates of fiber optics technologies certificate may find employment as fiber optic technicians, fiber optic cable installation technicians, fiber optic cable restoration specialists, technical sales representatives, customer service representatives, fiber optic technical support analysts or as fiber optics procurement specialists used with marketing and purchasing support functions.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- understand the fundamentals of fiber optic systems
- install, configure, maintain, and troubleshoot fiber optic systems
- design and specify a fiber optic network
- design, configure, maintain, and troubleshoot fiber optic systems
- design and planning of fiber optic inside and outside plant cabling systems
- restore fiber optic systems
- develop expertise with long and short haul fiber optic media and associated equipment
- employ proper troubleshooting methods for optimal diagnosis and repair of fiber optic systems problems utilizing state of the art optic instrumentation or test equipment

PROGRAM REQUIREMENTS (TOTAL CREDITS – 18)

	Major	
CPT 181	Intro to Telecom.	3
CPT 183	Local Area Networks	3
CPT 198	Fiber Optic Tech.	3
CPT 219	Fiber Optic Anlys. & Dsg.	3
CPT 222	Fiber Optic Sys. Testing	3
CPT 248	PC Hardware	3
		18

Computer Technology, Certificate

MEDICAL COMPUTER SUPPORT

Division of Computer Technology/Business

The medical computer support certificate is designed for those students who seek entry-level positions in the computer/medical field. Courses included in this certificate may be applied toward the Computer Technology AAS Medical Administration Option.

Career Opportunities

Graduates of the medical computer support certificate may find employment as computer help desk support specialists, unit clerks, medical records assistants and front office billing representatives.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- setup, maintain and troubleshoot a computer workstation (hardware, devices, drivers, software) within a networked environment
- collect, prepare, file, store and retrieve electronic data
- develop skills in electronic document processing and claims processing
- describe and implement medical insurance and electronic health regulations by using various software application programs

PROGRAM REQUIREMENTS (TOTAL CREDITS — 18)

CPT 150	Microcomputer Cncpts.	3
CPT 248	PC Hardware	3
CPT 259	User Support Operations	3
OFT 145	Med. Office Procedures	3
OFT 150	Medical Billing Mgmt.	3
OFT 155	Electronic Health Rec.	3
		18

Computer Technology, Certificate

MICROCOMPUTER SUPPORT

Division of Computer Technology/Business

The microcomputer support certificate offers instruction in the Microsoft Office suite of office productivity software products and will guide students toward professional certification. Courses included in this certificate may be applied toward the Computer Technology AAS Technical Support Option.

Career Opportunities

Graduates of the microcomputer support certificate may find employment as technical support technicians, junior systems analysts, technical sales representatives, customer service technicians, help-desk analysts and IT trainers.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- analyze and solve business-related problems using applications in the Office suite
- design and create documents, spreadsheets, databases and presentations for business functions
- manage business related electronic communications

PROGRAM REQUIREMENTS (TOTAL CREDITS — 16)

CPT 150	Microcomputer Concepts	3
CPT 195	Excel for Windows	3
CPT 196	Access for Windows	3
CPT 259	User Support Oper.	3
OFT 185	PowerPoint	1
OFT 190	Word for Windows	3
		16

Computer Technology, Certificate

NETWORKING

Division of Computer Technology/Business

The networking certificate provides students with an intensive educational experience in local area networking, focusing on the Microsoft Windows 2000 network operating system. Courses included in this certificate may be applied toward the Computer Technology AAS Networking Option.

Career Opportunities

Graduates of the networking certificate may find employment as network administrators, network technicians, technical sales representatives, customer service representatives, technical support analysts or IT trainers.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- install, configure, operate and troubleshoot Windows desktop client and server network operating systems
- implement and solve network operating system problems
- implement and maintain Windows client and server software in an enterprise environment

PROGRAM REQUIREMENTS (TOTAL CREDITS — 18)

CIS 168	Prin. of Info Security	3
CIS 209	LAN Security	3
CPT 145	Intro/Computer Tech.	3
CPT 182	Operating Systems	3
CPT 262	Windows Client Server	3
CPT 264	Windows Server Mgmt.	3
		18

Computer Technology, Certificate

PC REPAIR/A+

Division of Computer Technology/Business

The PC repair certificate program prepares the student for employment as a PC repair technician and provides the instructional material to prepare for the A+ industry certification exam. Courses included in this certificate may be applied toward the Computer Technology AAS Networking Option.

Career Opportunities

Graduates of the PC Repair/A+ certificate program may find employment as technical support technicians, computer repair technicians, technical sales representatives, customer service technicians, help-desk analysts and IT trainers.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- install, configure and operate MS-DOS, Windows 9x and Linux operating systems
- understand the architecture and troubleshoot several popular PC operating systems
- become proficient in the installation and configuration of PC hardware

PROGRAM REQUIREMENTS (TOTAL CREDITS — 18)

CPT 150	Microcomputer Concepts	3
CPT 182	Operating Systems	3
CPT 183	Local Area Networks	3
CPT 248	PC Hardware	3
CPT 249	PC Troubleshooting	3
CPT 256	Linux Desktop	3
		18

Computer Technology, Certificate

PROGRAMMING

Division of Computer Technology/Business

The programming certificate offers the student a firm foundation in Visual Basic and Java, two of the most popular programming languages being used in industry. Courses included in this certificate may be applied toward the Computer Technology AAS Programming for the Enterprise Option.

Career Opportunities

Graduates of the programming certificate may find employment as computer programmers, programmer analysts, technical sales representatives, technical support analysts and web developers.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- build full-featured Windows application programs
- enhance application design with object-oriented programming skills
- create, test and debug computer programs

PROGRAM REQUIREMENTS (TOTAL CREDITS — 16)

CPT 145	Intro to Computer Tech.	3
CPT 160	Intro to Programming	3
CPT 162	Visual Basic I	3
CPT 163	Java Programming I	3
CPT 213	Java Programming II	3
OFT 100	Basic Keyboarding	1
		16

Computer Technology, Certificate

WEB DEVELOPMENT

Division of Computer Technology/Business

The Web Development certificate offers the student exposure to a variety of web page development tools and modern programming languages. Courses included in this certificate may be applied toward the Web Technology AAS Web Publishing Option.

Career Opportunities

Graduates of the Web development certificate program may find employment as computer programmers, systems analysts, PC technicians, programmer analysts, technical sales representatives, technical support analysts or web developers.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- design and create Internet and intranet based Web solutions
- enhance Web sites with interactivity for real-time processing
- identify and correct problems associated with Web sites

PROGRAM REQUIREMENTS (TOTAL CREDITS — 18)

CPT 201	Web Content Dvlpmt.	3

CPT 203	HTML and CSS	3
CPT 206	JavaScript	3
WEB 110	Web Design	3
WEB 188	Social Media	3
WEB 277	E Commerce Tech.	3
		18

Criminal Justice, AAS

Division of Public Service/Humanities/Social Sciences/Mathematics

The criminal justice career option is designed for those who want to seek entry level employment after earning their associate degree.

The required courses provide a broad-based introduction to the field of criminal justice. In addition, credits of elective courses allow students to focus their study on areas of particular interest.

Successful completion of this program of study leads to the associate of applied science degree.

Career Opportunities

Recent graduates of the criminal justice program have obtained jobs with the following titles: corrections officer, security manager, police officer and youth worker.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- apply relevant laws, regulations and procedures to a law enforcement situation
- learn to apply critical thinking skills in a law enforcement environment
- analyze information from criminal justice agencies and sources
- manage criminal justice information via technology
- analyze and evaluate data and research relating to the criminal justice profession
- practice positive interaction with the criminal justice community and other related agencies
- understand community diversification in a law enforcement environment
- develop effective police/community relations
- practice positive interpersonal and communication skills as a member of the criminal justice environment
- effect relevant procedures for handling a juvenile delinquent case
- practice appropriate investigative techniques
- adhere to accepted practices involved in criminal procedures related to assist, force, search and seizure
- develop effective decision making abilities
- evaluate criminal justice programs
- develop criminal justice relationships and workplace skills
- understand the importance of physical fitness as a law officer

In addition, students may opt to acquire additional skills in the following areas:

- correctional institution care of adults and juveniles
- administering probation and parole
- analysis of criminal evidence in the laboratory
- participation in community relations programs

PROGRAM REQUIREMENTS (TOTAL CREDITS — 60)

General Education

CPT 150	Microcomputer Concepts	3
ENG 161	College Writing	3
ENG 162 or ENG 163 or ENG 164 or ENG 168	Technical Commun. / Business Commun. / Advanced Composition / Police Report Writing	3
PSY 160	General Psychology	3
Humanities Elective		3
Mathematics Elective		3
		18

Major

CRJ 155	Intro. to Crim. Justice	3
CRJ 160	Criminal Law I	3
CRJ 162	Police Administration I	3
CRJ 163	Criminal Procedure	3
CRJ 172	Subst. Abuse & Crime	3
CRJ 255	Juvenile Delinquency	3
CRJ 263 or CRJ 296	Investigative Concepts / Intro to Criminalistics	3
CRJ 287	Multiculturalism & the Crim. Just. System	3
CRJ 290	Prin. of Criminology	3
Criminal Justice Electives		9
		36

Other Required Courses

SOC 155 or POL 255	Principles of Sociology / Amer., State & Local Gov.	3
SPC 155	Effective Speech	3
		6

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	
CPT 150	3	CRJ 163	3	CRJ 255	3	CRJ 162	3
CRJ 155	3	CRJ 172	3	CRJ 263 or 296	3	CRJ 287	3
CRJ 160	3	SOC 155 or POL 255	3	CRJ 290	3	SPC 155	3
ENG 161	3	Criminal Justice Elective	3	ENG 162, 163, 164 or 168	3	Criminal Justice Elective	3
PSY 160	3	Humanities Elective	3	Criminal Justice Elective	3		
	15	Mathematics Elective	3		**15**		**15**
			15				

Criminal Justice, AAS

INFORMATION SECURITY OPTION

Division of Public Service/Humanities/Social Sciences/Mathematics

The information security option of the criminal justice program provides students with extensive hands-on instruction in all facets of information security, network security, and PC security. Students will be exposed to the tools and techniques of security and law enforcement professionals. Topics covered include computer forensics, intrusion detection, anti-virus software, firewalls, criminal law, evidence gathering and investigation techniques. A degree option with greater emphasis on computer technology can be found on page 82.

Career Opportunities

Law enforcement/computer technology professionals may find employment opportunities in private investigation firms, private security firms as well as local law enforcement agencies. Networking professionals may find employment as a corporate security manager, Internet security consultant, security technician or other network position with an emphasis on security.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- apply relevant laws, regulations and procedures to a law enforcement situation
- practice appropriate investigative techniques
- adhere to accepted practices involved in criminal procedures related to search and seizure
- identify and assess potential security risks against PCs, web sites, programs and networks
- develop and implement a security plan to minimize security threats and manage security risks
- develop familiarity with current security software and hardware
- understand the duties and responsibilities of a corporate security officer
- demonstrate a moral code of ethics and understand the legal responsibilities in the security field

PROGRAM REQUIREMENTS (TOTAL CREDITS — 63)

General Education

CPT 150	Microcomputer Concepts	3
ENG 161	College Writing	3
ENG 162	Technical Commun.	
or		
ENG 163	Business Commun.	3
or		
ENG 164	Advanced Composition	
SOC 155	Intro to Sociology	
or		3
POL 255	Amer., State & Local Gov.	
SPC 155	Effective Speech	
or		3
SPC 156	Interpersonal Commun.	
Mathematics Elective		3
		18

Major

CRJ 163	Criminal Procedure	3
CRJ 195	Intro to Private Security	
or		3
CRJ 220	Research Methods	
CRJ 263	Investigative Concepts	3
CRJ 265	White Collar Crime	
or		3
CRJ 296	Intro to Criminalistics	
		12

Other Required Courses

CIS 168	Prin. of Info Security	3
CIS 209	LAN Security	3
CIS 210	Internet Security	3
CIS 212	Computer Forensics	3
CPT 181	Intro to Telecomm.	3
CPT 182	Operating Systems	3
CPT 183	Local Area Networks	3
CPT 214	Wireless Commun.	3
CPT 256	Linux Desktop	3
CPT 259	User Support Oper.	3
HSM 101	Orientation to HSM	3
		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**		**Fall Semester**		**Spring Semester**	
CIS 168	3	CIS 210	3	CIS 212	3	CIS 209	3
CPT 150	3	CPT 182	3	CPT 214	3	CPT 256	3
CPT 181	3	CPT 183	3	CRJ 195 or 220	3	CPT 259	3
ENG 161	3	CRJ 163	3	CRJ 263	3	CRJ 265 or 296	3
HSM 101	3	ENG 162, 163 or 164	3	SPC 155 or 156	3	SOC 155 or POL 255	3
	15	Mathematics Elective	3		**15**		**15**
			18				

Criminal Justice, Certificate

CORRECTIONS OFFICER

Division of Public Service/Humanities/Social Sciences/Mathematics

The corrections officer certificate is designed for those who seek entry level employment with a corrections facility.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- provide correctional institution care of adults and/or juveniles
- apply relevant laws, regulations and procedures within a correctional facility
- adhere to practices found in the criminal justice system

PROGRAM REQUIREMENTS (TOTAL CREDITS — 18)

CRJ 155	Intro to Criminal Just.	3
CRJ 180	Corrections	3
CRJ 255	Juvenile Delinquency	3
CRJ 283	Inst. Trtmnt. of Ad. & Jvnl.	3
CRJ 290	Prin. of Criminology	3
CRJ 172	Subst. Abuse & Crime	3
		18

Criminal Justice, Certificate

SECURITY PROFESSIONAL

Division of Public Services/Humanities/Social Sciences/Mathematics

The security professional certificate is designed for those students who seek entry level positions in the field of private security.

Career Opportunities

This certificate is designed for those students seeking employment in the field of private security or those already employed in the field who are seeking to enhance their skills and advancement opportunities. Individuals may be employed as security officers, security guards, loss prevention specialists, campus security officers and gaming surveillance officers.

Program Learning Outcomes

- recognize the basic concepts and principles of private security
- identify the roles and responsibilities of private security
- describe the procedures, processes and policies for protection of private and public facilities, infrastructure, employees and visitors
- prepare to monitor and answer alarms, conduct risk and vulnerability assessments, and implement emergency/disaster plans and procedures
- classify components of integrated security systems
- evaluate legal issues and decisions that face security professionals

PROGRAM REQUIREMENTS (TOTAL CREDITS — 18)

CRJ 195	Intro to Private Security	3
CRJ 262	Crime Prevention	3
CRJ 263	Investigative Concepts	
or		3
CRJ 296	Intro to Criminalistics	
CRJ 287	Multiculturalism & the CRJ System	
or		3
HSM 101	Orientation to Hom.Sec.	
HSM 102	Principles of Emerg. Services	3
HSM 103	Vulnerability Assmts. & Physical Security	3
		18

RECOMMENDED SEQUENCE

Full-time students (all courses Fall semester)
Part-time students see below.

Fall Semester		**Spring Semester**		**Summer Semester**
CRJ 195	3	CRJ 262	3	Select courses available
CRJ 263 or 296	3	HSM 102	3	
CRJ 287 or HSM 101	3	HSM 103	3	
	9		**9**	

Culinary Arts, AAS

APPRENTICESHIP OPTION

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

The culinary arts apprenticeship program is one of the majors comprising the college's Center for Culinary Arts and Hospitality. This apprenticeship program, sponsored by The American Culinary Federation Laurel Highlands (ACFLHC) Chapter and WCCC, is accredited by the American Culinary Federation Education Foundaton Accrediting Commission (ACFEFAC). A cooperative program, it combines 63 or 64 credits of academic course work with 4,000 hours of supervised on-the-job training in a participating restaurant, club, hotel, resort or institution for an associate degree. Classes are scheduled so that students have a sufficient block of uninterrupted time to complete their 40-hour week. Academic work can be completed as a full-time student in two years or as a part-time student over a period of three years.

Students enrolled in this program are registered with the U.S. Department of Labor as apprentices and are required to join the ACF Laurel Highlands Chapter as student culinarians. Registration and membership fees are required and payable to the ACF during the first week of class.

Students are expected to be well-groomed in compliance with the standards of sanitation. Students will be required to present medical proof of good physical health. Uniforms and program tool kit are required for all lab classes.

Employment must be secured in a facility that will provide full-time employment. The employer will agree to abide by the apprenticeship guidelines. Business attire may be required for some class sssignments.

Having fulfilled employment requirements, applicants will complete the Pennsylvania Apprenticeship and Training Council Apprenticeship Agreement and ACF Apprenticeship Data Form.

At the completion of the program, students may apply for certification with the ACF.

The culinary arts associate degree apprenticeship option may be completed through a partnership with Nemacolin Woodlands Resort. For information, contact the WCCC Admissions Office, 724-925-4077.

Career Opportunities

Graduates of the culinary arts program may accept jobs with the following titles: cook, working chef, sous chef, personal chef, sales representative, executive chef, culinary educator and manager.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- prepare, season and cook according to recipe and local, regional and international traditions and diversity: soups, sauces, salads, meats, fish poultry, game, vegetables and desserts using acceptable standards of sanitation and safety
- apply standards of nutrition and wellness in food preparation
- design set-up and prepare meals and buffets and serve meals
- design menus with descriptive wording and layout designs
- plan and execute food production and requisitions within an established food and labor busget
- recognize quality standards in fresh vegetables, meats, poultry, game and all other foodstuffs
- demonstrate supervisory and interpersonal skills within a food service team
- demonstrate basic skills in culinary artistries including ice carving, tallow sculpting, cake decorating and garniture display
- utilize the technology to maintain systems of operation

Culinary Arts, AAS

APPRENTICESHIP OPTION (CONTINUED)

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

PROGRAM REQUIREMENTS (TOTAL CREDITS — 63/64)

General Education

CPT 150	Microcomputer Concepts	3
ENG 161	College Writing	3
ENG 163	Business Commun.	
or		3
ENG 164	Adv. Composition	
Humanities Elective		
or		3
FSM 170	Food Culture & Religion	
Mathematics Elective		3
Social Science Elective		3
		18

Major

BKP 141	Baking I	4
CUL 121	Chef Apprenticeship I	2
CUL 122	Chef Apprenticeship II	2
CUL 123	Chef Apprenticeship III	2
CUL 132	Garde Manger	3
CUL 224	Chef Apprenticeship IV	2
CUL 232	Food Specialties	3
		18

Other Required Courses

FSM 103	Intro. to Hospitality Ind.	
or		3
FSM 113	Customer Service	
FSM 105	Foods I	4
FSM 112	Quantity Foods	4
FSM 117	Wait Staff/Din. Rm. Trng.	1
FSM 118	Sanitation	2
FSM 119	Beverage Mgmt.	
or		1
FSM 120	Wine Appre. & Serv.	
FSM 159	Nutrition	
or		3/4
BKP 243	Healthy Cooking Trends	
FSM 215	Food Purchasing & Menu Mgmt.	3
FSM 218	Hospitality Marketing	3
FSM 235	Supervision & Training	3
		27/28

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

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

Fall Semester	
CUL 121	2
FSM 103 or 113	3
FSM 105	4
FSM 117	1
FSM 118	2
	12

Spring Semester	
BKP 141	4
CUL 122	2
FSM 235	3
FSM 218	3
	12

Summer Semester*	
CPT 150	3
ENG 161	3
	6

Fall Semester	
CUL 123	2
FSM 112	4
FSM 215	3
CUL 132	3
	12

Spring Semester	
CUL 224	2
CUL 232	3
FSM 119 or 120	1
FSM 159 or BKP 243	3/4
Mathematics Elective	3
	12/13

Summer Semester*	
ENG 163 or ENG 164	3
Humanities Elective or FSM 170	3
Social Science Elective	3
	9

Culinary Arts, Diploma

APPRENTICESHIP OPTION

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

The culinary arts apprenticeship program is one of the majors comprising the college's Center for Culinary Arts and Hospitality. This apprenticeship program is sponsored by the American Culinary Federation Laurel Highlands (ACFLHC) Chapter and WCCC. A cooperative program, it combines 45/46 credits of course work with 4,000 hours of supervised on-the-job training in a participating restaurant, club, hotel or institution. Classes are scheduled so that students have a sufficient block of uninterrupted time to complete their 40-hour week. Academic work can be completed as a full-time student in two years or as a part-time student over a period of three years.

Students enrolled in this program are registered with the U.S. Department of Labor as apprentices and are required to join the ACF Laurel Highlands Chapter as student culinarians. Registration and membership fees are required and payable to the ACF during the first week of class.

Students are expected to be well-groomed in compliance with the standards of sanitation. Students will be required to present medical proof of good physical health. Uniforms and program tool kit are required for all lab classes. Business attire may be required for some class assignments

Employment must be secured in a facility that will provide full-time employment. The employer will agree to abide by the apprenticeship guidelines.

Having fulfilled employment requirements, applicants will complete the Pennsylvania Apprenticeship and Training Council Apprenticeship Agreement and ACF Apprenticeship Data Form.

At the completion of the program, students may apply for certification with the ACF. The culinary arts apprenticeship option certificate program may be completed through a partnership with Nemacolin Woodlands Resort. For more information, contact the WCCC Admissions Office, 724-925-4077.

Career Opportunities

Graduates of the culinary arts program may accept jobs with the following titles: cook, station chef, working chef, sous chef, personal chef, sales representative, executive chef, culinary educator and manager.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- prepare, season and cook according to recipe and local, regional and international traditions and diversity: soups, sauces, salads, meats, fish poultry, game, vegetables and desserts using acceptable standards of sanitation and safety
- apply standards of nutrition and wellness in food preparation
- design set-up and prepare meals and buffets and serve meals
- design menus with descriptive wording and layout designs
- plan and execute food production and requisitions within an established food and labor budget
- recognize quality standards in fresh vegetables, meats, poultry, game and all other foodstuffs
- demonstrate supervisory and interpersonal skills within a food service team
- demonstrate basic skills in culinary artistries including ice carving, tallow sculpting, cake decorating and garniture display
- utilize the technology to maintain systems of operation

Culinary Arts, Diploma

APPRENTICESHIP OPTION (CONTINUED)

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

PROGRAM REQUIREMENTS (TOTAL CREDITS – 45/46)

General Education

None Required

Major

BKP 141	Baking I	4
CUL 121	Apprenticeship I	2
CUL 122	Apprenticeship II	2
CUL 123	Apprenticeship III	2
CUL 132	Garde Manger	3
CUL 224	Apprenticeship IV	2
CUL 232	Food Specialities	3
		18

Other Required Courses

FSM 103	Intro to Hospitality Ind.	
or		3
FSM 113	Customer Service	
FSM 105	Foods I	4
FSM 112	Quantity Foods	4
FSM 117	Wait Staff/Din. Rm. Trng.	1
FSM 118	Sanitation	2
FSM 119	Beverage Management	
or		1
FSM 120	Wine Apprec. & Service	
FSM 159	Nutrition	
or		3/4
BKP 243	Healthy Cooking Trends	
FSM 215	Food Purchasing & Menu Mgmt.	3
FSM 218	Hospitality Marketing	3
FSM 235	Supervision & Training	3
		27/28

RECOMMENDED SEQUENCE

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

Fall Semester		**Spring Semester**		**Fall Semester**		**Spring Semester**	
CUL 121	2	BKP 141	4	CUL 123	2	CUL 224	2
FSM 103 or 113	3	CUL 122	2	CUL 132	3	CUL 232	3
FSM 105	4	FSM 218	3	FSM 112	4	BKP 243 or FSM 159	3/4
FSM 117	1	FSM 235	3	FSM 215	3	FSM 119 or 120	1
FSM 118	2		**12**		**12**		**9/10**
	12						

Culinary Arts, AAS

NON-APPRENTICESHIP OPTION

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

The culinary arts non-apprenticeship program is one of the majors comprising the college's Center for Culinary Arts and Hospitality. This curriculum is planned to meet the increasing employment needs of the 21st century for trained chefs and culinary experts. The program includes classroom and food laboratory experiences and requires students to complete an internship. This option accommodates both part- and full-time students and is available in two-year and 16-month programs. Students are expected to be well-groomed in compliance with standards of sanitation. Students will be required to provide medical proof of good physical health. Uniforms and program tool kit are required for all lab classes. Business attire may be required for some class assignments.

Although the non-apprenticeship program accommodates part-time students, full-time students may complete the program in two years.

The program is accredited by the American Culinary Federation Education Foundation Accrediting Commission (ACFEFAC).

Career Opportunities

Graduates of the culinary arts program have accepted jobs with the following titles: cook, working chef, station chef, sous chef, personal family chef, sales representative, executive chef, culinary educator and manager.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- prepare, season and cook according to recipe and local, regional and international traditions and diversity: soups, sauces, salads, meats, fish, poultry, game, vegetables and desserts using acceptable standards of sanitation and safety
- apply standards of nutrition and wellness in food preparation
- design set-up and prepare meals and buffets and serve meals
- design menus with descriptive wording and layout designs
- plan and execute food production and requisitions within an established food and labor budget
- recognize quality standards in fresh vegetables, meats, poultry, game and all other foodstuffs
- demonstrate supervisory and interpersonal skills within a food service team
- demonstrate basic skills in culinary artistries including ice carving, tallow sculpting, cake decorating and garniture display
- utilize the technology to maintain systems of operation

PROGRAM REQUIREMENTS (TOTAL CREDITS — 68/69)

General Education

CPT 150	Microcomputer Concepts	3
ENG 161	College Writing	3
ENG 164	Advanced Composition	
or		3
ENG 163	Business Commun.	
Humanities	Elective	
or		3
FSM 170	Food Culure & Religion	
Mathematics	Elective	3
Social Science	Elective	3
		18

Major

CUL 130	Basic Culinary Skills	3
CUL 132	Garde Manger	3
CUL 232	Food Specialties	3
FSM 103	Intro. to Hospitality Ind.	
or		3
FSM 113	Customer Service	
FSM 105	Foods I	4
FSM 112	Quantity Foods	4
FSM 117	Wait Staff/Din. Rm. Trng.	1
FSM 118	Sanitation	2
FSM 119	Beverage Mgmt.	1
or		
FSM 120	Wine Appre. & Serv.	1
FSM 159	Nutrition	
or		3/4
BKP 243	Healthy Cooking Trends	
FSM 213	A la Carte Kitchen	4
FSM 215	Food Purch. & Menu Mgmt.	3
FSM 218	Hospitality Marketing	3
FSM 219	Hospitality Internship	3
FSM 235	Supervision & Training	3
		43/44

Other Required Courses

BKP 141	Baking I	4
BKP 142	Baking II	3
		7

Culinary Arts, AAS

NON-APPRENTICESHIP OPTION (CONTINUED)

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

RECOMMENDED SEQUENCE (Two-year Program)

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

Fall Semester		**Spring Semester**		**Fall Semester**		**Spring Semester**	
CPT 150	3	BKP 141	4	CUL 132	3	BKP 142	3
CUL 130	3	ENG 161	3	FSM 159 or BKP 243	3/4	CUL 232	3
FSM 103 or 113	3	FSM 112	4	FSM 213	4	FSM 218	3
FSM 105	4	FSM 215	3	FSM 219	3	FSM 235	3
FSM 117	1	Mathematics Elective	3	Humanities Elective or		Social Science Elective	3
FSM 118	2		**17**	FSM 170	3		**15**
FSM 119 or FSM 120	1	**Summer Semester**			**16/17**		
	17	ENG 163 or ENG 164	3				
			3				

RECOMMENDED SEQUENCE (Accelerated Program - 16 months)

Fall Semester		**Spring Semester**		**Summer Semester**		**Fall Semester**	
CPT 150	3	CUL 132	3	BKP 141	4	BKP 142	3
CUL 130	3	ENG 161	3	ENG 163 or 164	3	CUL 232	3
FSM 103 or 113	3	FSM 112	4	Humanities Elective or		FSM 119 or 120	1
FSM 105	4	FSM 117	1	FSM 170	3	FSM 213	4
FSM 118	2	FSM 215	3	Mathematics Elective	3	FSM 219	3
FSM 159 or BKP 243	3/4	FSM 218	3	Social Science Elective	3	FSM 235	3
	18/19		**17**		**16**		**17**

Culinary Arts, Diploma

NON-APPRENTICESHIP OPTION

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

The culinary arts non-apprenticeship program is one of the majors comprising the college's Center for Culinary Arts and Hospitality. This curriculum is planned to meet the increasing employment needs of the 21st century for trained chefs and culinary experts. The program includes classroom and food laboratory experiences and requires students to complete an internship. This option accommodates both part- and full-time students. Students are expected to be well-groomed in compliance with standards of sanitation. Students will be required to provide medical proof of good physical health. Uniforms and program tool kit are required for all lab classes. Business attire may be required for some class assignments.

Although the non-apprenticeship program accommodates part-time students, full-time students may complete the program in two years.

Career Opportunities

Graduates of the culinary arts program may accept jobs with the following titles: cook, working chef, station chef, sous chef, personal family chef, sales representative, executive chef, culinary educator and manager.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- prepare, season and cook according to recipe and local, regional and international traditions and diversity: soups, sauces, salads, meats, fish, poultry, game, vegetables and desserts using acceptable standards of sanitation and safety
- apply standards of nutrition and wellness in food preparation
- design, set-up and prepare meals and buffets and serve meals
- design menus with descriptive wording and layout designs
- plan and execute food production and requisitions within an established food and labor budget
- recognize quality standards in the production operations of a food service team
- demonstrate supervisory and interpersonal skills within a food operation team
- demonstrate basic skills in culinary artistries including ice carving, tallow sculpting, cake decorating and garniture display
- utilize the technology to maintain acceptable systems of operation

PROGRAM REQUIREMENTS (TOTAL CREDITS – 50/51)

General Education

None Required

Major

CUL 130	Basic Culinary Skills	3
CUL 132	Garde Manger	3
CUL 232	Food Specialities	3
FSM 103	Intro to Hospitality Ind.	
or		3
FSM 113	Customer Service	
FSM 105	Foods I	4
FSM 112	Quantity Foods	4
FSM 117	Wait Staff/Din. Rm. Trng.	1
FSM 118	Sanitation	2
FSM 119	Beverage Mgmt.	
or		1
FSM 120	Wine Appre. & Serv.	
FSM 159	Nutrition	
or		3/4
BKP 243	Healthy Cooking Trends	
FSM 213	Ala Carte Kitchen	4
FSM 215	Food Purc. & Menu Mgmt.	3
FSM 218	Hospitality Marketing	3
FSM 219	Hospitality Internship	3
FSM 235	Supervision & Trng.	3
		43/44

Other Required Courses

BKP 141	Baking I	4
BKP 142	Baking II	3
		7

RECOMMENDED SEQUENCE (TWO-YEAR PROGRAM)

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

Fall Semester		**Spring Semester**		**Fall Semester**		**Spring Semester**	
CUL 130	3	BKP 141	4	CUL 132	3	BKP 142	3
FSM 103 or 113	3	FSM 112	4	FSM 159 or BKP 243	3/4	CUL 232	3
FSM 105	4	FSM 215	3	FSM 213	4	FSM 218	3
FSM 118	2	FSM 119 or 120	1	FSM 219	3	FSM 235	3
	12	FSM 117	1		**13/14**		**12**
			13				

Dental Assisting, Diploma

Division of Health Professions/Natural Sciences

The dental assisting program offers the academic preparation and clinical training necessary to secure employment as a dental assistant. Dental assistants are employed by dentists in general and specialty practices as well as hospital dental clinics.

The program includes clinical experience in all phases of dentistry while rotating through departments at the University of Pittsburgh School of Dental Medicine and private dental offices.

Upon successful completion of DAS 105, students are eligible to apply to take the Dental Assisting National Board (DANB) Radiation Health and Safety (RHS) Exam. Upon successful completion of the Dental Assisting Program, national DANB certificaton may be earned as a Certified Dental Assistant (CDA) upon successful completion of the DANB Infection Control (ICE) Exam and General Chairside (GC) Exam.

The program is accredited by the Commission on Dental Accreditation of the American Dental Association. The commission is a special accrediting body recognized by the United States Department of Education. The Commission on Dental Accreditation can be contacted at 312-440-2719 or at 211 East Chicago Ave., Chicago, Illinois 60611.

Special Admission and Selection Criteria

Since this program requires a clinical placement, enrollments may be limited.

- Applicants must be graduates of accredited secondary school programs or those who hold GED equivalency certificates prior to selection. High school preparation should include one year of biology and chemistry. If high school chemistry and biology were not successfully completed with a C or better, the preadmission requirements can also be met by completing CHM 107 and BIO 107.
- Applicants must complete and submit a WCCC Applicaton for Admission and Allied Health Programs Application to the Admissions Office by January 5 prior to the fall semester for which enrollment is anticipated. The forms must be accompanied by official transcripts from all secondary schools attended, GED programs and any other formal educational programs attended beyond high school.
- Applicants must take the computerized placement test (Accuplacer) and have successfully completed any required developmental courses prior to acceptance for the dental assisting program. All developmental course work including science course prerequisites must be completed with a grade of C prior to program enrollment. (C minus grade not accepted.)
- Applicants who have completed college-level credit courses must have a 2.0 GPA or higher.
- Applicants selected for admission must submit satisfactory results from pre-entrance physical, dental, hearing and eye examinations obtained at the candidate's expense. Specific information regarding the examinations will be provided to accepted applicants.
- Applicants must purchase student liability insurance.
- Upon initial acceptance into the program, a criminal background check, child abuse history, FBI fingerprinting (through the Department of Public Welfare) and drug screening must be obtained at the applicant's expense. The following admission criteria are required:
  - Pennsylvania State Police Request for Criminal Record Check (SP4-164). Positive records will be evaluated individually.
  - Pennsylvania Child Abuse History Clearance (CY-113). Any record results in denial of admission to the dental assisting program.
  - Drug screening must be completed within 10 days of the start of the program. A positive drug screen will result in denial of admission to the dental assisting program or continuation of the program. The program reserves the right to require random drug screens while the student is enrolled.
- Please be aware that based on ongoing changes occurring in the dental profession, it may be necessary to modify courses listed in this catalog to meet changing practice competencies.

Students enrolled in the dental assisting program must be certified in AHA CPR-BLS for Health Care Providers Annual Certification by January 1 of their spring semester.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- perform clinical dental assisting procedures with competence
- manage asepsis, infection and hazard control protocol consistent with published professional guidelines
- perform procedures specific to the work of the dental assistant, e.g. taking preliminary impressions, charting and data collection, etc.
- obtain and record accurate medical/dental histories and vital signs
- assist in the management of medical and dental emergencies
- provide oral health instruction and communicate effectively with patients and dental health team members
- expose, process and evaluate all types of oral radiography
- perform laboratory procedures associated with chairside assisting
- operate all dental equipment safely, effectively and efficiently
- perform basic office business procedures accurately

- successfully complete the Dental Assisting National Board Exam and applicable state credentialing
- assume responsibility for their own actions within the legal and ethical framework of dental assisting
- develop an attitude of responsibility for continued professional development, through encouragement to participate in professional organizations and continuing education opportunities

Essential Cognitive, Physical and Behavioral Functions for the Dental Assisting Program

POLICY: The Westmoreland County Community College Dental Assisting Program requires that students possess the following functional abilities essential for Dental Assisting Practice; however, affiliating institutions may require or may impose restrictions not listed.

- Sufficient musculo-skeletal control to perform gross fine motor tasks inherent in required skills; eg. taking dental radiographs, appropriate adaptation of dental instruments used intraorally, appropriate techniques for intraoral examination
- Have good right and left wrist and hand grip and maintain prolonged arm positions for four-handed dentistry
- Sufficient visual ability to read dental records, labels on medication containers and calibrations on instruments used to make dental measurements

- Sufficient hearing ability to interpret messages not solely based on visual cues, to interpret conversation, and to detect sounds such as heart tones or Korotkoff's sounds
- Sufficient speech ability to convey oral messages to assigned patients and to other dental health team members
- Have sufficient facility with English (to include reading, writing, spelling, speaking and listening) in order to retrieve information from various sources including patients charts, computer screens, textbooks, etc., and have the ability to speak in English in a manner that is understood by others
- Give and receive accurate information over the phone
- Sufficient emotional stability to accurately perceive situations influencing the care of assigned patients and to make unimpaired observations and judgments regarding care of assigned patients
- Must exhibit the capacity for reasoned judgment and calm in a healthcare and workplace environment
- Must be able to demonstrate attention to thoroughness, detail and accuracy in all aspects of work
- Cannot be dependent on any chemical or substance
- Have the ability to react appropriately and quickly in emergency situations
- Must be poised, well-groomed and neat in appearance, discreet, tactful, diplomatic, professional, versatile, ethical and dependable
- Must be able to complete assigned tasks in reasonable and acceptable time frame
- Must show honesty and integrity in all matters with peers, faculty, staff and patients
- Must demonstrate complete confidentiality with information entrusted to them related to patients, healthcare workers and health status issues
- Must display compassion, empathy and concern for others
- Critically evaluate their own performance, accept constructive criticism, and look for ways to improve performance
- Accept responsibility, accountability and ownership of one's own actions
- Be forthright about errors or uncertainty

The need to use a device or substance to enhance deficits in these abilities is acceptable.

Dental Assisting, Diploma

(CONTINUED)

Division of Health Professions/Natural Sciences

PROGRAM REQUIREMENTS (TOTAL CREDITS — 42)

General Education

BIO 107	Human Biology	3
ENG 161	College Writing	3
PSY 160	General Psychology	3
SPC 156	Interpersonal Comm.	3
		12

Major

DAS 100	Intro/Dental Assisting	4
DAS 101	Oral Anatomy	2
DAS 102	Dental Mtrl. for Dent. Asst.	2
DAS 103	Dental Assisting Lab	4
DAS 104	Dental Science	4
DAS 105	Dent. Rad. for Dent. Asst.	3
DAS 106	CLN Dental Assisting I	5
DAS 108	CLN Dental Assisting II	4
DAS 109	Practice Management	2
		30

Other Required Courses

None Required

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Fall Semester		Spring Semester		Summer Semester	
BIO 107	3	DAS 104	4	DAS 108	4
DAS 100	4	DAS 106	5	DAS 109	2
DAS 101	2	ENG 161	3	SPC 156	3
DAS 102	2	PSY 160	3		**9**
DAS 103	4		**15**		
DAS 105	3				
	18				

NOTE: All major courses must be completed with "C" grade or better or graduate.

Dental Hygiene, AAS

Division of Health Professions/Natural Sciences

The dental hygiene program offers the academic preparation and clinical training needed for a variety of dental hygiene careers. While most dental hygienists practice in private dental offices, others provide services in dental specialty practices, hospital and industrial clinics, correctional institutions, government health agencies, insurance companies and military services. With additional education through degree completion programs, dental hygienists also work in school systems, dental and dental hygiene education programs, dental sales and research.

The program includes clinical experience in the college campus facility. Patients will come to campus for prophylactic dental care; however, students may need to secure patients to meet clinical requirements.

The program is accredited by the Commission on Dental Accreditation of the American Dental Association. The commission is a specialized accrediting agency recognized by the United States Department of Education. The Commission on Dental Accreditation can be contacted at 312-440-2719 or at 211 East Chicago Avenue, Chicago, Illinois 60611.

Special Admission and Selection Criteria

Admission to the dental hygiene program is highly competitive and enrollment is limited. Specific criteria for admission and selection are listed below.

- Applicants must be graduates of an accredited secondary school program, or high school seniors enrolled in an accredited secondary school program, or those who hold a GED equivalency certificate prior to selection.
- High school preparation should include one year each of biology, chemistry and algebra. If these courses were not taken in high school, BIO 107, CHM 107 and MTH 052 must be completed prior to testing for the dental hygiene program.
- College prerequisite coursework includes completion of CHM 264-Chemistry for the Health Sciences, BIO 171-Anatomy and Physiology I, and SOC 155-Principles of Sociology with a minimum grade of C. (C minus grade not accepted.)
- Applicants must complete and submit a WCCC Application for Admission and Allied Health Programs Application to the Admissions Office by January 5 prior to the fall semester in which enrollment is anticipated. The forms must be accompanied by official transcripts from all secondary schools attended, GED programs and any other formal education program attended beyond high school.
- Applicants must take the computerized placement test (Accuplacer) and have successfully completed any required developmental courses and/or high school course work with a minimum grade of C prior to taking the dental hygiene admission examination. (C minus grade not accepted.) Also, applicants who have completed credit courses must have a 2.5 GPA prior to taking the dental hygiene admission examination. Only courses necessary to meet the dental hygiene program requirements are considered when calculating the GPA. If the GPA is less than 2.5, one or more of these courses can be repeated in order to meet this requirement before testing.
- Applicants who have enrolled in developmental or sciences courses three or more times will be deemed ineligible for admission to the Dental Hygiene program. An enrollment is considered any course that has been attempted with a grade of "D," "F" or "W."
- Upon initial acceptance into the program, a criminal background check, child abuse history and drug screening must be obtained at the applicant's expense. The following admission criteria are required:
  - Pennsylvania State Police Request for Criminal Record Check (SP4-164). Positive records will be evaluated individually. If an applicant has not established residency in the state of Pennsylvania for more than one year, they will need to submit FBI cards for School Employees (FD258).
  - Pennsylvania Child Abuse History Clearance (CY-168). Any record results in denial of admission to the dental hygiene program.
  - Drug screening must be completed within 10 days of the start of the program. A positive drug screen will result in denial of admission to the dental assisting program or continuation in the program. The program reserves the right to require random drug screens while the student is enrolled.
- Those who apply must take a Dental Hygiene admissions test administered by WCCC. Applicants will be notified of testing dates. Candidates will be selected until available seats are filled.
- Applicants selected for admission must submit satisfactory results from pre-entrance physical, dental, hearing and eye examinations obtained at the candidate's expense. Specific information regarding the examination will be provided to students upon acceptance.
- Applicants must have successfully completed AHA CPR-BLS for Health Care Providers Annual Certification prior to the start of the second semester of program enrollment.
- Applicants must purchase student liability insurance.
- Conviction of a felonious act may result in the Pennsylvania State Board of Dentistry denying licensure.
- Please be aware that based on ongoing changes in the dental hygiene profession, it may be necessary to modify courses listed in this catalog to meet changing practice competencies.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- provide dental hygiene care for the child, adolescent, adult, geriatric and medically compromised patient with an awareness of cultural diversity within the community
- provide the dental hygiene process of care that includes assessment, planning, implementation and evaluation utilizing critical thinking and information management skills

Dental Hygiene, AAS

(CONTINUED)

Division of Health Professions/Natural Sciences

- provide dental hygiene care for all types of classifications of periodontal disease, including patients who exhibit moderate to severe periodontal disease
- operate all dental equipment safely, effectively and efficiently
- expose, process and evaluate all types of oral radiography
- apply computation skills to provide safe exposure to oral radiation
- develop interpersonal and communication skills to effectively interact with diverse population groups
- develop competency in assessing, planning, implementing and evaluating community based oral health programs, including health promotion and disease prevention activities with awareness of local community needs
- provide appropriate life-support measures for medical emergencies that may be encountered in dental hygiene practice
- apply ethical, legal and regulatory concepts to the provision and/or support of oral health care services
- manage self to adapt to the changing demands of the oral health care profession
- accept personal responsibility to prepare for professional development through lifelong learning
- utilize computer literacy to assess current scientific literature
- be competent in the evaluation of current scientific literature

PROGRAM REQUIREMENTS (TOTAL CREDITS — 78)

Program Prerequisites

BIO 171	Anatomy & Physiology	4
CHM 264	Chem. for the Hlth. Sci.	4
SOC 155	Principles of Sociology	3
		11

General Education

CPT 150	Microcomputer Concepts	3
ENG 161	College Writing	3
ENG 163	Business Commun.	3
SPC 156	Interpersonal Comm.	3
		12

Major

DAH 101	Intro to Dentistry	3
DAH 102	Dental Materials	2
DAH 103	Medical Emergencies	1
DAH 104	Head, Neck & Dental Anat.	4
DAH 105	Dental Radiology	3
DAH 106	Nutritional Biochemistry	2
DAH 109	Oral Pathology	2
DAH 111	Dental Hygiene Lecture	3
DAH 112	Dental Hygiene Lab	4
DAH 113	Histology/Embryology	2
DAH 114	Periodontics I	3
DAH 115	Clinical Dental Hyg. I	5
DAH 117	Local Anesthesia	3
DAH 205	Periodontics II	1
DAH 206	Clinical Dental Hyg. II	6
DAH 207	Pharmacology	2
DAH 208	Clinical Dental Hyg. III	6
DAH 209	Community Dental Hlth.	3
		55

Other Required Courses

BIO 172	Anatomy & Physiology II	4
BIO 265	Microbiology	4
BUS 120	Math of Business	3
		11

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Fall Semester

BIO 172	4
DAH 101	3
DAH 102	2
DAH 104	4
ENG 161	3
	16

Spring Semester

DAH 103	1
DAH 105	3
DAH 111	3
DAH 112	4
DAH 113	2
DAH 114	3
	16

Summer Semester

CPT 150	3
DAH 106	2
DAH 109	2
DAH 115	5
DAH 117	3
	15

Fall Semester

BIO 265	4
DAH 205	1
DAH 206	6
DAH 207	2
DAH 209	3
	16

Spring Semester

BUS 120	3
DAH 208	6
ENG 163	3
SPC 156	3
	15

Diagnostic Medical Sonography, AAS

Division of Health Professions/Natural Sciences

The diagnostic medical sonography program offers the academic preparation, laboratory and clinical training for a career as a diagnostic medical sonographer. This curriculum provides students with the entry-level skills needed to use diagnostic ultrasound equipment under the supervision of a physician for the use and interpretation of ultrasound procedures. Sonographers assist in gathering sonographic data necessary to reach diagnostic decisions. Sonographers work in a variety of healthcare settings, including regional medical centers, hospitals, diagnostic centers, clinics and doctors' offices. They perform their duties in diagnostic labs, trauma centers, emergency rooms, operating rooms, interventional suites, labor and delivery facilities, and at the bedside.

Students who successfully complete all requirements of the program are eligible to apply to take the American Registry in Diagnostic Medical Sonography Exam.

Mission and Goals

The mission of the program is to prepare graduates with a complete educational experience for those who wish to become healthcare providers. The goal of the program is to prepare competent entry-level general sonographers in the cognitive (knowledge), psychomotor (skills) and affective (behavior) learning domains. The diagnostic medical sonography program provides each student opportunities to learn and develop competence in patient care which includes:

- communications skills
- critical thinking
- technical skills which adapt to ever changing technologies
- necessary computation skills
- information literacy skills appropriate to the discipline and professional development
- therapeutic interpersonal skills
- personal skills that enhance healthy lifestyles, academic integrity and acceptable professional behavior
- skills necessary to perform in the healthcare environment at various levels

The program goals seek to develop graduates who:

- perform in entry-level diagnostic medical sonography positions
- perform safely the basic principles of diagnostic medical sonography and its disciplines
- demonstrate the role of diagnostic medical sonographer in relationship to the interdisciplinary functions and members of the health care team
- demonstrate individual honesty, integrity and caring
- demonstrate individual professional proficiency and currency in skills and patient care
- show the importance of quality patient care in the healthcare setting
- apply self evaluation and life-long learning
- achieve a passing grade on the American Registry of Diagnostic Medical Sonographers' examinations

Special Admission and Selection Criteria

Since this program requires a clinical placement, enrollment is selective and enrollment is limited by the clinical placement necessary to complete the diagnostic medical sonography course requirements. Students may be required to interview at one or more clinical sites on their own time and expense.

Clinical site preference is not guaranteed. There may be a possibility that clinical placement is deferred a semester if appropriate clinical site placement is not available.

- Applicants must be graduates of an accredited secondary school program, or high school seniors enrolled in an accredited secondary school program, or those who hold a GED equivalency certificate prior to selection.
- High school preparation should include one year each of biology, physics, chemistry and algebra. If these courses were not taken in high school, BIO 107, PHY 110, CHM 107 and MTH 100 must be completed prior to testing for the diagnostic medical sonography program and must be completed with a C grade or better.
- College prerequisite coursework includes completion of ALH 122 - Medical Terminology, BIO 171-Anatomy and Physiology I, BIO 172- Anatomy and Physiology II, ENG 161-College Writing, MTH 157-College Algebra and PHY 130-Physics for Sonography with a minimum grade of C. All of these courses must be completed by the application deadline which is January 5 of each year.
- Applicants must complete and submit a WCCC Application for Admission and Allied Health Programs Application to the Admissions Office by January 5 prior to the fall semester in which enrollment is anticipated. Official transcripts from all secondary schools attended, GED programs, and any other formal education program attended beyond high school must accompany the forms.
- Applicants must take the computerized placement test (Accuplacer) and have successfully completed any required developmental courses and/or high school course work with a minimum grade of C prior to taking the diagnostic medical sonography admission examination. In addition, applicants who have completed credit courses must have a 2.5 or better GPA prior to taking the Diagnostic Medical Sonography admission examination. Only courses necessary to meet the diagnostic medical sonography program requirements are considered when calculating the GPA. If the GPA is less than 2.5, one or more of these courses can be repeated in order to meet this requirement before testing. Transfer courses are not calculated into the GPA.

- Students who have attempted developmental courses in math or science three or more times will not be considered for admission.
- Applicants to the diagnostic medical sonography program should review the following web sites for specific information:
  - Joint Review Committee on Education in Diagnostic Medical Sonography (JRCDMS)
  - Commission on Accreditation of Allied Health Educational Programs (CAAHEP)
  - American Registry of Diagnostic Medical Sonographers (ARDMS) in Abdomen, Obstetrics & Gynecology, Neurosonology and Adult Echocardiography
- Those who apply must take a diagnostic medical sonography admissions test administered by WCCC. Applicants will be notified of testing dates.
- Admission to the diagnostic medical sonography program requires the applicant to submit information regarding criminal conviction and/or crimes of moral turpitude. Upon initial acceptance into the program, a criminal record check and child abuse history must be obtained at the applicant's expense. Individuals who are residents of Pennsylvania for less than one year must submit a current FBI clearance. These records must be submitted to the diagnostic medical sonography program within two weeks of the date of notification of initial program acceptance. Admission is conditional pending receipt and evaluation of the background information to determine whether there is any conviction, which may bar the student from admission to the diagnostic medical sonography program.

NOTE: Admission decisions are based on three factors which contribute to the overall admission score: GPA, Diagnostic Medical Sonography Entrance Exam Score, and evidence of success in courses already taken. Admission to the diagnostic medical sonography program is competitive and there are a limited number of seats.

After acceptance into the Diagnostic Medical Sonography program, students must maintain a GPA of 2.0 or better and must not earn less than a grade of "C" in any DMS course. Students who fail to meet these requirements must withdraw from the Diagnostic Medical Sonography program.

The following are required at the applicant's expense:

Child Abuse Clearance

Any record results in denial of admission to the diagnostic medical sonography program.

Criminal Record Check

Any felony conviction may result in denial of admission to the diagnostic medical sonography program. Any misdemeanor will be individually evaluated.

Fingerprinting Clearance

FBI fingerprinting through the Department of Public Welfare

Urine Drug Screen

A positive drug screen may result in denial of admission to the diagnostic medical sonography program or continuation in the diagnostic medical sonography program. The program reserves the right to require random drug screens while the student is enrolled.

Essential Cognitive, Physical and Behavioral Functions for the Diagnostic Medical Sonography Program

Diagnostic medical sonography students must be able to meet the following physical and mental abilities for successful completion of the diagnostic medical sonography program:

- Must have the physical ability to move sonography equipment and manipulate the hand-held transducer
- Stand and walk for extended periods of time (several hours)
- Utilize a keyboard
- Discriminate subtle sounds
- Lift and/or support at a minimum 75 pounds in order to lift and carry accessories
- Push heavy equipment up to 200 pounds
- Have the ability to appropriately position patients for procedures and safely transfer patients who may weigh in excess of 300 pounds (in wheelchairs and/or liters)
- Ability to articulate clear verbal commands to the patient while the patient is being positioned for a procedure from a distance of a few feet
- See in a very dim light
- Have good right and left wrist and hand grip and maintain prolonged arm positions for scanning
- Ability to keep arm and hand steady while manipulating transducer
- Feel anatomical landmarks
- Distinguish textures
- Must be able to manage stressful situations that relate to patient care, procedure, and technical standards

- Must be able to evaluate proper patient positioning and other essential factors for the purpose of quality control
- Have hearing corrected, with the ability to hear patients at a distance of 3-5 feet
- Have sufficient tactile ability in order to asses a patient's pulses, in addition to changes in a patient's physiologic status (i.e. changes in edema, skin temperature, etc.) and adapt or change small knobs or settings
- Have the ability to smell odors that may signify a change in the physiologic status of a patient or an unsafe environmental condition
- Have the ability to read and comprehend written class room material, documents and settings on computer screens, medical documents, and institution procedures and policies
- Have the ability to write legibly in English in a style that is readable
- Must be able to move freely with full manual dexterity of both upper and lower extremities, have unrestricted movement of neck, shoulder, back and hips in order to assess, observe and perform emergency patient care, assist with all aspects of patient care, and be able to touch the floor for the removal of environmental hazards
- Must not be highly allergic to latex products, and film processing chemicals (developer or fixer)
- Distinguish colors and interpret color flow signals
- Cannot be dependent on any chemical or substance
- Have the ability to react appropriately and quickly in emergency situations
- Must be poised, well groomed and neat in appearance, discreet, tactful, diplomatic, professional, versatile, ethical and dependable
- Must be able to complete assigned tasks in reasonable and acceptable time frame
- Must have the ability to comprehend written and verbal instructions correctly in academic and clinical health care settings
- Must exhibit the capacity for reasoned judgment and calm in a health care environment
- Must not have physical or mental medical disorders that limit the ability to perform the duties of a diagnostic medical sonography student
- Must be stable emotionally; this type of work involves life and death situations
- Must show honesty and integrity in all matters with peers, faculty, staff and patients
- Must display compassion, empathy and concern for others
- Must demonstrate accountability, problem solving and listening skills at all times
- Enjoy working with people and patient contact
- Give and receive information over the phone
- Interpret audible Doppler Waveforms

Students will be removed from the program if a health, cognitive, psychomotor or behavioral condition significantly limits the student from performing the routine functions of a diagnostic medical sonography student and/or present a danger to the safety and health of patients and/or agency staff.
After starting the diagnostic medical sonography program, students will immediately notify the program director if any of these stated functions change. An evaluation may occur to determine if students are able to continue in the program.

Final Admission Criteria

Accepted applicants will be required to attend a mandatory information session and orientation session as the final step in the admission process. Specific information regarding the following additional program requirements will be provided to applicants at that time. These include:

- Complete physical examination, lab tests, proof of immunizations, and urine drug screen
- CPR-Basic Life Support for Health Care Providers Annual Certification required
- Evidence of a student's liability insurance policy

All of the above must be submitted to the diagnostic medical sonography program by June 15 or program acceptance will be withdrawn.

NOTE: Child abuse clearance, criminal record check, fingerprinting for FBI check and final admission criteria items are to be completed by students once they have been accepted into the Diagnostic Medical Sonography program.

It should be noted that at times criteria and requirements may change due to modifications that take place in various agencies and other external rules and regulations of the program and clinical sites. At times these are not known at the time of admission to the program.

Diagnostic Medical Sonography, AAS

(CONTINUED)

Division of Health Professions/Natural Sciences

PROGRAM REQUIREMENTS (TOTAL CREDITS – 74)

Prerequisite

ALH 122	Medical Terminology*	3
BIO 171	Anatomy & Physiology I*	4
BIO 172	Anatomy & Physiology II*	4
ENG 161	College Writing*	3
MTH 157	College Algebra*	3
PHY 130	Physics for Sonography*	3
		20

General Education

CPT 150	Microcomputer Concepts	3
ENG 162	Technical Commun.	3
HUM 156	Critical Thinking	3
SPC 156	Interpersonal Commun.	3
		12

Major

DMS 103	Cross Sect. Anat. for Ultrasound*	2
DMS 105	Abdominal I*	4
DMS 106	Obstetrics I*	3
DMS 201	Patient Care/Legal/ Ethical Issues*	2
DMS 204	Gynecology*	4
DMS 205	Abdominal II*	4
DMS 206	Obstetrics*	3
DMS 207	Small Parts, Breast & Neuro.*	2
DMS 208	Intro to Vascular*	2
DMS 210	Clinical I*	3
DMS 211	Clinical II*	3
DMS 212	Clinical III*	3
DMS 213	Acoustical Prin. & Instrument. I*	4
DMS 214	Acoustical Prin. & Instrument. II*	3
		42

RECOMMENDED SEQUENCE

Prerequisite	
ALH 122*	3
BIO 171*	4
BIO 172*	4
ENG 161*	3
MTH 157*	3
PHY 130*	3
	20

Fall 1	
DMS 103*	2
DMS 105*	4
DMS 204*	3
SPC 156	3
	12

Spring 1	
CPT 150	3
DMS 106*	3
DMS 201*	2
DMS 205*	4
	12

Summer 1	
DMS 210*	3
DMS 207*	2
	5

Fall 2	
DMS 206*	4
DMS 208*	2
DMS 211*	3
DMS 213*	4
	13

Spring 2	
ENG 162	3
DMS 212*	3
DMS 214*	3
HUM 156	3
	12

*These courses must be passed with a "C" or better.

Dietetic Technology/Nutritional Services Management, AAS

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

Dietetic Technology/Nutritional Services Management is one of the majors included in the college's Center for Culinary Arts and Hospitality. Students enrolling in this program may seek employment in long-term care facilities, retirement centers, child nutrition and school lunch programs, nutrition programs for the elderly, hospitals, public health nutrition programs, and food service systems management firms as dietetic technicians, dietary managers or health care support workers. Students complete 60 credit hours of classroom/laboratory work along with a three credit capstone practicum in area facilities/related activities. Students are responsible for securing a practicum site which meets the program requirements. A physical examination is required for enrollment in the practicum course. Components required in this exam are contingent upon the practicum site and immunizations may be required. Graduates of the nutritional services option of dietetic technology are eligible to become members of the Association of Food and Nutrition Professionals and to write the certification examination to become a Certified Dietary Manager (CDM). Students will be required to provide medical proof of good physical health to begin the first laboratory course. Students are expected to be well groomed in compliance with standards of sanitation. Uniforms, program tool kit and transportation to the practicum site are required. Special attire may be required at the practicum site as students are expected to conform to the dress code and regulation of the facility. Business attire may be required for some class assignments.

Program Learning Outcomes

This curriculum is designed to prepare students to function as an integral part of the nutrition care team and/or foodservice management team to:

- assist in the organization, development, implementation and evaluation of nutrition care and wellness plans
- obtain and record diet history, analyze clients nutritional care status, utilize communication skills to counsel clients and families from diverse backgrounds in medical nutrition therapy
- demonstrate the ability to work as part of a production team to prepare quantity foods
- evaluate food quality and meal acceptance
- utilize interpersonal skills to supervise nutrition clerks and foodservice employees and to communicate with the other members of the health care team
- procure and receive supplies and equipment following industry standards
- apply organizational and communication skills in supervising food production
- implement cost control procedures applying mathematical concepts of profit and loss
- enforce sanitation and safety standards
- write job descriptions, specifications and work schedules for nutritional services employees
- design menus, analyze specialized meal patterns and write standardized recipes
- retrieve and manage nutrition information using the latest technology
- utilize computer technology to plan, organize and document food service and nutrition related information

Dietetic Technology/Nutritional Services Management, AAS

(CONTINUED)

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

PROGRAM REQUIREMENTS (TOTAL CREDITS – 60)

General Education

CPT 150	Microcomputer Concepts	3
ENG 161	College Writing	3
ENG 163	Business Commun.	
or		3
ENG 164	Advanced Composition	
Humanities Elective		
or		3
FSM 170	Food Culture & Religion	
Mathematics Elective		3
Social Science Elective		3
		18

Major

BKP 141	Baking I	4
BKP 243	Healthy Cooking Trends	4
DTT 111	Intro to Dietetics	3
DTT 114	Topics in Nutr. & Health	3
FSM 105	Foods I	4
FSM 112	Quantity Foods	4
FSM 118	Sanitation	2
FSM 159	Nutrition	3
FSM 215	Food Purch. & Menu Mgmt.	3
FSM 235	Supervision & Training	3
		33

Other Required Courses

CUL 135	Speed Scratch Cooking	3
DTT 199	Nutritional Services Mgmt. Practicum	3
FSM 113	Customer Service	3
		9

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

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

Fall Semester	
CPT 150	3
DTT 111	3
FSM 105	4
FSM 118	2
FSM 159	3
	15

Spring Semester	
BKP 141	4
CUL 135	3
DTT 114	3
ENG 161	3
Math Elective	3
	16

Fall Semester	
ENG 163 or 164	3
FSM 112	4
FSM 170 or	
Humanities Elective	3
FSM 215	3
Social Science Elective	3
	16

***Spring Semester**	
BKP 243	4
DTT 199	3
FSM 113	3
FSM 235	3
	13

**It is recommended to take no more than 13 credits in this semester to allow time for the practicum experience.*

Dining Room Management, Certificate

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

Dining room management is one of the majors comprising the Center for Culinary Arts and Hospitality. The certificate in dining room management is designed to provide entry and intermediate level skills for employment within resorts, restaurants, lodging and institutional facilities. Customer service and sanitation standards are both emphasized. Courses within this program also include information on beverage and wine service, techniques of service and marketing as it relates to this industry. Dining room attire required. Business atire may be required for some class assignments.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- use interpersonal and personal skills to effectively work within the hospitality operation
- identify the characteristics of successful service techniques
- practice the technical service skills needed for dining room employees
- identify the basic laws of food and beverage service
- identify diverse customer expectations
- collect and organize marketing information to reflect local, regional and international differences
- utilize the technology to maintain acceptable dining room systems of operation

Career Opportunities

Graduates of the dining room management certificate program may accept positions as: dining room manager, maitre'd, customer service specialist or training specialist.

PROGRAM REQUIREMENTS (TOTAL CREDITS — 17)

FSM 103	Intro to Hospitality	3
FSM 113	Customer Service	3
FSM 117	Wait Staff/Din. Rm. Trng.	1
FSM 118	Sanitation	2
FSM 119	Beverage Mgmt.	1
FSM 120	Wine Apprecia. & Ser.	1
FSM 218	Hospitality Marketing	3
FSM 219	Hospitality Internship	3
		17

RECOMMENDED SEQUENCE

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

Fall Semester		**Spring Semester**	
FSM 103	3	FSM 119	1
FSM 113	3	FSM 120	1
FSM 117	1	FSM 218	3
FSM 118	2	FSM 219	3
	9		**8**

Drafting and Design Technology, AAS

COMPUTER AIDED DRAFTING & DESIGN (CADD)/COMPUTER AIDED MANUFACTURING (CAM)

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

The associate degree program provides the student drafter with computer aided drafting and design and computer aided manufacturing hands-on CADD/CAM applications using a micro stand-alone terminal workstation.

Career Opportunities

Students completing this program will be qualified to enter the workforce as a first level CADD/CAM operator. Significant hands-on experience is essential for CADD/CAM operators to eventually qualify for positions as designers, design technicians or design specialists at a computer terminal.

The following personnel will benefit from a CADD/CAM education: mechanical designers, project engineers, specialists, supervisors, detailers, casual users, vocational trainers and support personnel.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- develop the ability to execute quantitative design of machine products
- identify the basic components of a CADD/CAM system (hardware and software)
- perform an infinite number of 2-D machine tool path computations necessary to produce and advance drafting and design portfolio
- implement the basic commands necessary to apply the operational skills needed to effect a 2-D CADD/CAM system
- apply concepts from physics, engineering, mechanics, mathematics, and drafting and apply them to the synthesis of durable mechanical machines and products
- communicate effectively and appropriately record and report information significant to the job
- network with machine operators, engineers and customers

PROGRAM REQUIREMENTS (TOTAL CREDITS — 64)

General Education

DFT 258	Auto CAD	4
ENG 161	College Writing	3
ENG 162	Technical Commun.	3
MTH 108*	Math for the Tech. I	4
PHY 107*	Applied Physics	4
Social Science Elective		3
		21

Major

ARC 262	Piping, Structural Detail. & Elec. Drafting	4
DFT 105	Technical Drafting I	4
DFT 106	Technical Drafting II	4
DFT 112	Intro to Design Mat. & Pro.	3
DFT 259	Advanced AutoCAD	4
DFT 266	Autodesk Inventor	4
		23

Other Required Courses

CNC 111	CNC I	4
CNC 112	CNC II	5
EGR 220	Statics/Strength of Mat.	3
MTH 109*	Math for the Tech. II	4
MTT 111	Machining I	4
		20

*Students planning to transfer to a four-year institution should consult with their advisor for course substitutions.

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**	
DFT 105	4	CNC 111	4	CNC 112	5	ARC 262	4
DFT 112	3	DFT 106	4	DFT 259	4	DFT 266	4
ENG 161	3	DFT 258	4	EGR 220	3	ENG 162	3
MTH 108	4	MTH 109	4	MTT 111	4	PHY 107	4
Social Science Elective	3		**16**		**16**		**15**
	17						

Drafting and Design Technology, AAS

MECHANICAL DRAFTING AND DESIGN OPTION

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

Students in the mechanical option of the drafting and design technology program learn to translate the ideas, rough sketches, specifications and calculations of engineers into working drawings for production and assembly.

Successful completion of this program of study leads to the associate of applied science degree.

Career Opportunities

Recent graduates of this program have accepted jobs with the following titles: drafter, detailer, drafting technician, drafting technician trainee and CADD first-level entry position.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- analyze and translate problems by presenting them visually
- develop the ability to execute quantitative design of machines and products
- identify the basic components of a CADD system
- perform an infinite number of 2-D design math computations necessary to produce drafting design
- implement the basic commands necessary to operate 2-D CADD and 3-D solid modeling systems
- apply concepts from physics, engineering, mechanics, mathematics, and drafting and apply them to the synthesis of durable mechanical machines and products
- communicate effectively and appropriately record and report information significant to the job
- perform an infinite number of two- and three-dimensional drawings using a stand-alone mini-computer
- network with machine operators, designers, engineers and customers

PROGRAM REQUIREMENTS (TOTAL CREDITS — 61)

General Education

DFT 258	AutoCAD	4
ENG 161	College Writing	3
ENG 162	Technical Commun.	3
MTH 108*	Math for the Tech. I	4
PHY 107*	Applied Physics	4
Social Science Elective		3
		21

Major

ARC 262	Piping, Structural Detail. & Elec. Drafting	4
DFT 105	Technical Drafting I	4
DFT 106	Technical Drafting II	4
DFT 112	Intro to Design, Mat. & Pro	3
DFT 207	Tool Design	4
DFT 208	Product Design	3
DFT 259	Advanced AutoCAD	4
DFT 266	Autodesk Inventor	4
		30

Other Required Courses

EGR 110	Descriptive Geometry	3
EGR 220	Statics/Strength of Mat.	3
MTH 109*	Math for the Tech. II	4
		10

*Students planning to transfer to four-year institutions should consult with their advisor for course substitutions.

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**	
DFT 105	4	DFT 106	4	DFT 207	4	ARC 262	4
DFT 112	3	DFT 258	4	DFT 259	4	DFT 208	3
ENG 161	3	ENG 162	3	EGR 110	3	DFT 266	4
MTH 108	4	MTH 109	4	EGR 220	3	Social Science Elective	3
	14		**15**	PHY 107	4		**14**
					18		

Education/Pre-K–Grade 4, AAS

Division of Public Service/Humanities/Social Sciences/Mathematics

This program reflects the standards established by the National Association of Education for Young Children for students in the field of early childhood education. The program provides a solid foundation in the who, what, and why of effective early childhood education (infancy through nine years). Supervised observational field experience is required. This experience may occur in the WCCC Campus Children's Center, students' work-site classrooms, or approved off-campus locations including Head Start, public schools and IU classrooms.

Career Opportunities

Graduates of this program have accepted positions with the following titles: preschool teacher, group supervisor, assistant group supervisor, center supervisor and homevisitor. Other graduates have started their own child care centers, family day care home or group day care home. With experience and additional education, graduates may be employed as program directors. Many graduates transfer to four-year universities to obtain advanced degrees in early childhood education where they will receive Pre-K to Grade 4 PA certification for employment in early childhood or elementary school settings. Transfer requires a minimum 3.0 GPA and successful completion of PAPA exams.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- formulate a plan to support and value relationships with families and communities
- demonstrate the use of systematic observations and other effective assessments to positively influence children's development
- design, implement and evaluate appropriate curriculum that promotes positive development and learning in all young children
- identify and utilize ethical guidelines and other professional standards related to early childhood practices
- evaluate and design learning environments that are healthy, respectful, and supportive of all children
- demonstrate technological skills needed to manage information and to educate your children

Students enrolled in the associate degree program must be certified in first aid/CPR prior to graduation.

The WCCC Education/Pre-K–Grade 4 program is a participating agency of PA KEY-funded workshops and courses for program directors and practitioners.

PROGRAM REQUIREMENTS (TOTAL CREDITS — 62)

General Education

ART 155 or MUS 155	Intro to Art History Music Listening: A Survey	3
BIO 155	General Biology I	4
EDU 250/ ENG 250	Teach. Eng. to Speaker/ Other Langs.	3
ENG 161	College Writing	3
ENG 255	Intro to Literature	3
HIS 255	Early U.S. & Pa. History	3
MTH 180	Elements of Math I	3
MTH 185	Elements of Math II	3
PSY 160 or SOC 155 or SOC 255	General Psychology Principles of Sociology Cultural Anthropology	3
		28

Major

ECE 179	Infant & Toddler Dev.	3
ECE 180	Child Growth & Dev.	3
ECE 182	Early Childhood Ed. Curr.	3
ECE 183	Creative Experiences	3
ECE 185	Intro Early Chldhd. Ed.	3
ECE 186	Family and Society	3
ECE 188	Intro to Except. Dev.	3
ECE 189	Early Chdhd. Lan. & Literacy	3
ECE 191	Assessment & Obser. Yng. Child.	3
ECE 284	Early Chldhd. Ed. Practicum	4
		31

Other Required Courses

Restricted Electives*		3
		3

***Restricted Electives**

ASL 101	American Sign Language
CPT 150	Microcomputer Concepts
ECE 187	Child Care Mgmt.
ECE 190	Health/Safety/Nut.
ECE 194	Young. Children w/Spec. Needs
EDU 200	Intro to Instructional Tech.
PSY 165	Educational Psychology

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	
ECE 179	3	ECE 180	3	ART 155 or MUS 155	3	ECE 186	3
ECE 185	3	ECE 183	3	BIO 155	4	ECE 284	4
ENG 161	3	ECE 188	3	ECE 182	3	ENG 255	3
MTH 180	3	EDU/ENG 250	3	ECE 189	3	HIS 255	3
Social Science Elective	3	MTH 185	3	ECE 191	3	Restricted Elective	3
	15		**15**		**16**		**16**

Education/Pre-K–Grade 4, Diploma

Division of Public Service/Humanities/Social Sciences/Mathematics

This curriculum focuses on competencies for early childhood education students as identified by the National Association for the Education of Young Children. However, it does not require a supervised field experience. Credits earned in this program can be applied toward the requirements of the associate degree and will lead to entry level positions in early childhood education.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- develop plans that support and value relationships with families and communities
- demonstrate the use of systematic observations and other effective assessments to positively influence children's development
- identify and use ethical guidelines and other professional standards related to early childhood practices
- utilize their knowledge of child development to design and evaluate environments that are healthy, respectful, supportive, and challenging for all children
- design, implement and eveluate appropriate curriculim for all children ages birth to nine years

Students enrolled in this diploma program must be certified in CPR and first aid prior to graduation.

PROGRAM REQUIREMENTS (TOTAL CREDITS — 33)

General Education		
ENG 161	College Writing	3
MTH 180	Elements of Math I	3
		6

Major		
ECE 179	Infant & Toddler Dev.	3
ECE 180	Child Growth & Dev.	3
ECE 182	Early Chldhd. Ed. Curr.	3
ECE 183	Creative Experiences	3
ECE 185	Intro Early Chldhd. Ed.	3
ECE 186	Family and Society	3
ECE 188	Intro to Except. Dev.	3
ECE 189	Early Child. Lang./Lit.	3
ECE 191	Observ. & Assesmnt.	3
		27

RECOMMENDED SEQUENCE

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

Fall Semester	
ECE 179	3
ECE 182	3
ECE 185	3
ECE 191	3
ENG 161	3
MTH 180	3
	18

Spring Semester	
ECE 180	3
ECE 183	3
ECE 186	3
ECE 188	3
ECE 189	3
	15

Education/Pre-K–Grade 4, Certificate

Division of Public Service/Humanities/Social Sciences/Mathematics

Credits earned in this program can be applied toward the requirements of the diploma or associate degree.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- demonstrate an understanding of child growth and development from birth to nine years by developing appropriate curriculum for children ages birth to nine years
- formulate a plan to support and value positive relationships with families

Students enrolled in ths diploma progrtam must be certified in CPR and first aid prior to graduation.

PROGRAM REQUIREMENTS (TOTAL CREDITS — 15)

	Major	
ECE 179	Infant & Toddler Dev.	3
ECE 180	Child Growth & Dev.	3
ECE 183	Creative Experiences	3
ECE 185	Intro Early Chldhd. Ed.	3
ECE 186	Family & Society	3
		15

Education/Early Childhood, Certificate

DIRECTOR CREDENTIAL

Division of Public Service/Humanities/Social Sciences/Mathematics

This nine-credit credential program is designed to prepare personnel to increase their knowledge and understanding of the role of the Early Childhood Director, as defined in Section 3270.34, Chapter 55, Commonwealth of Pennsylvania Child Day Care Center Regulations, and to meet the requirements for Staff Education, STAR #3 in the Keystone STARS Quality Improvement Initiative Performance Standards.

In order to enroll in the Pennsylvania Early Childhood Core Credential program, students must: 1) have an associate degree in early childhood education, child development, special education, elementary education or social science field; 2) have an associate degree in any other field, including 30 hours of early childhood education, child development, special education, elementary education or social science field; 3) have a bachelor's degree in early childhood education, child development, special education, elementary education or social science field; or 4) have a bachelor's degree in any other field, including 30 credit hours in early childhood education, child development, special education, elementary education or social science field.

Program Learning Outcomes

This curriculum is designed to prepare directors of early childhood programs to:

- apply knowledge of ages and stages of development in program planning
- create learning environments and curriculums that reflect children's ages, abilities, interests and diverse home culture
- evaluate and select assessment tools to be used with children, staff, and center
- demonstrate effective communication skills with children, parents, staff and community
- demonstrate professional behavior and interpersonal skills while adhering to early childhood professional code of ethics
- evaluate and ensure that health, safety, and nutritional practices are compliant with all standards
- analyze the organization, administration, management, budget and the daily operations of an early childhood facility

For a candidate to be awarded a director credential, the candidate's choice of three three-credit courses must be pre-approved by the the granting institution faculty advisor based on the candidates prior academic record and prior experience. Successful completion of each of the three courses means a grade of "C" or better.

PROGRAM RECOMMENDATIONS (Minimum credits – 9)

ECE 179	Infant & Toddler Dev.	3	ECE 189	Language & Literacy	3	BUS 258	Supervisory Mgmt.	3
ECE 180	Child Growth & Dev.	3	ECE 190	Child Hlth./Sfty./Nut.	3	CPT 150	Microcomputer Concepts	3
ECE 182	ECE Curriculum	3	ECE 191	Obv. & Assmnt./Yg. Ch.	3	CPT 151	Advanced Office Appl.	3
ECE 183	Creative Experiences	3	ECE 194	Ed. Yg. Child./Spec. Needs	3	ENG 163	Business Commun.	3
ECE 185	Intro Early Ch. Curr.	3	EDU 250	Teach Eng./Speakers of Oth. Langs.	3	EDU 156	Intro/Mid. & Sec.. Ed.	3
ECE 186	Family & Society	3	BUS 120	Math of Business	3	HMS 155	Intro to Human Serv.	3
ECE 187	Child Care Mgmt.	3	BUS 160	Intro to Business	3	PSY 165	Educat. Psychology	3
ECE 188	Intro to Except. Dev.	3	BUS 241	Human Resource Mgmt.	3	SOC 161	Marriage & Family	3

Electrical Utility Technology, AAS

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

The electric utility technology degree will prepare students for mid level positions in the electric utility industry. Students who complete this program will develop a comprehensive understanding of the activities associated with electric utility line work, including circuit analysis, technical communication, heavy equipment operation, working with high voltage electricity, class A CDL license, first aid and CPR certifications, electrical transmission and distribution, and the safety aspects related to each. Students will engage in classroom and laboratory activities that will develop the basic technical skills necessary to obtain a position within the electric utility industry. In addition, students will be required to participate in a 10-week, compensated field experience with FirstEnergy that supplements the learning process.

Special Admission and Selection Criteria

- Students who are accepted must have and maintain a valid driver's license.
- Students must successfully pass a background screening for criminal and driving records conducted by FirstEnergy.
- Students must successfully pass a physical capabilities test administered by Industrial Physical Capability Services, Inc.
- Students must pass a Department of Transportation CDL physical and provide a copy of the Medical Examiners Certificate to FirstEnergy.
- Students must meet all academic and hands-on training requirements as part of FirstEnergy's selection process.

Career Opportunities

Graduates of the electric utility technology program may accept positions such as electric utility line worker, lineman, cableman, electrical utility foreman, electrical line supervisor and electrical line contractor.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- adhere to safety practices and procedures, such as checking equipment regularly and erecting barriers around work areas
- open switches or attach grounding devices to remove electrical hazards from disturbed or fallen lines or to facilitate repairs
- climb poles or use truck-mounted buckets to access equipment
- place insulating or fireproofing materials over conductors and joints
- install, maintain and repair electrical distribution and transmission systems, including conduits, cables, wires and related equipment such as transformers, circuit breakers and switches.
- identify defective sectionalizing devices, circuit breakers, fuses, voltage regulators, transformers, switches, relays or wiring using wiring diagrams and electrical-testing instruments
- demonstrate operation of vehicles equipped with tools and materials to job sites
- coordinate work assignment preparation and completion with other workers
- inspect and test power lines and auxiliary equipment to locate and identify problems using reading and testing instruments
- string wire conductors and cables between poles, towers, trenches, pylons and buildings; setting lines in place; and using winches to adjust tension
- identify and explain the components of an electrical distribution and transmission system
- develop the key technical skills necessary to secure a job in the electric utility industry
- install, maintain and troubleshoot electrical distribution and transmission systems
- demonstrate safe work practices at all times while on the jobsite
- demonstrate and utilize technology to maintain and troubleshoot various electrical industry systems
- demonstrate and utilize personal and interpersonal skills as an integral member of a team

Our mission is to provide students with a high quality and a variety of educational activities and experiences that will allow them to gain the level of knowledge necessary to become competent and successful in mid level line worker positions in the electric utility industry, specifically for FirstEnergy and its operating companies, West Penn and Potomac Edison.

Electrical Utility Technology, AAS

(CONTINUED)

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

PROGRAM REQUIREMENTS (TOTAL CREDITS – 63)

General Education		
PDV 160	Strategies/Acad.Success	1
CPT 150	Microcomputer App.	3
MTH 108	Math for Technologies I	4
ENG 161	College Writing	3
ENG 162	Technical Commun.	3
HUM 156	Critical Thinking	3
BUS 249	Labor Relations	3
PSY 160	General Psychology	3
		23

Major		
ELC 106	Circuit Analysis I	4
ELC 107	Circuit Analysis II	4
ELC 191	Basic Prin. of Indus. Electricity	4
ELC 192	Indus. Electrical Eqpmt.	4
ELC 223	Power Distribution	4
EUT 101	Overhead Line Tech.	5
EUT 102	Overhead Line Tech.	5
EUT 201	Overhead Lines Tech.	5
EUT 202	Overhead Lines Tech.	5
		40

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

This program does not support part-time attendance.

FALL SEMESTER		SPRING SEMESTER		FALL SEMESTER		SPRING SEMESTER	
CPT 150	3	ELC 106	4	ELC 107	4	BUS 249	3
ELC 191	4	ELC 192	4	EUT 201	5	ELC 223	4
EUT 101	5	ENG 161	3	ENG 162	3	EUT 202	5
MTH 108	4	EUT 102	5	PSY 160	3	HUM 156	3
PDV 160	1		**16**		**15**		**15**
	17						

Electronics Engineering Technology, AAS

GENERAL OPTION

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

Electronics engineering technology is concerned with the theory and practice of applied electronics engineering. It is designed to provide students with the skills and knowledge required to work with electronic equipment in a wide variety of high tech forms, often assisting electronics engineers. Graduates generally maintain, repair, test and modify complex electronic systems, conduct research and develop products.

Successful completion of this program of study leads to the associate of applied science degree.

Career Opportunities

Recent graduates of the electronics engineering technology program have accepted positions with the following titles: electronics engineering technician, electrical technician and industrial technician.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- design and construct basic circuitry based on an in-depth knowledge of electronic devices, circuits and embedded systems
- apply mathematics to the development of ideas based on scientific and engineering principles
- install, maintain and repair electronic circuits and systems using extensive knowledge of theory, test equipment and procedures
- apply understanding of electronic devices, circuits, systems, software and procedures to practical situations
- adapt and extend knowledge of electronics to new devices, circuits and systems
- communicate technological ideas and information with others verbally, graphically and in writing

PROGRAM REQUIREMENTS (TOTAL CREDITS — 61)

General Education

DFT 258	AutoCAD	4
ENG 161	College Writing	3
ENG 162 or	Technical Commun.	
ENG 163 or	Business Commun.	3
ENG 164	Advanced Composition	
MTH 108**	Math for the Tech. I	4
PHY 155	College Physics I	4
Social Science Elective		3
		21

Major

ELC 102	Electronic Devices	4
ELC 106	Circuit Analysis I	4
ELC 107	Circuit Analysis II	4
ELC 114	Digital Techniques	4
ELC 202	Linear Electronics	4
ELC 206	Microprocessors	4
ELC 213	Microprocessor Appli.	4
Restricted Electives*		4
		32

Other Required Courses

MTH 109**	Math for the Tech. II	4
PHY 156	College Physics II	4
		8

***Restricted Electives**

Courses with an ELC prefix

**Students planning to transfer to four-year institutions should consult with their advisor for course substitutions.

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**	
ELC 106	4	ELC 102	4	ELC 202	4	DFT 258	4
ENG 161	3	ELC 107	4	ELC 206	4	PHY 156	4
MTH 108	4	ELC 114	4	ENG 162, 163 or 164	3	ELC 213	4
Social Science Elective	3	MTH 109	4	PHY 155	4	Restricted Elective	4
	14		**16**		**15**		**16**

Engineering Technology, AAS

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

The engineering technology program is designed to provide students with the skills and knowledge they need to function as assistants to engineers. Graduates will be prepared to practice as engineering technicians.

Successful completion of this program of study leads to the associate of applied science degree.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- demonstrate basic quantitative skills through the study of applied mathematics and the application of mathematics to engineering systems
- expand basic skills to encompass mechanical skills, such as drafting, spatial relations, and force and motion analysis
- demonstrate product design capability
- develop skills in communications and business methods
- demonstrate computer literacy
- demonstrate use of critical thinking skills to the solution of basic engineering problems
- communicate effectively, and appropriately record and report information significant to the job

PROGRAM REQUIREMENTS (TOTAL CREDITS — 62)

General Education

ENG 161	College Writing	3
ENG 162	Technical Commun.	
or		
ENG 163	Business Commun.	3
or		
ENG 164	Advanced Comoposition	
MTH 108	Math for the Tech. I	4
PHY 155	College Physics I	4
Computer Science Elective		3
Social Science Elective		3
		20

Major

EGR 104	Engineering Materials	3
EGR 105	Manufacturing Proce.	3
EGR 110	Descriptive Geometry	3
EGR 210	Quality Control	3
EGR 220	Statics/Strength of Mat.	3
EGR 227	Kinematics	3
		18

Other Required Courses

DFT 105	Technical Drafting I	4
DFT 106	Technical Drafting II	4
DFT 266	Autodesk Inventor	4
MTH 109	Math for the Tech. II	4
MTH 172	Calculus I	4
PHY 156	College Physics II	4
		24

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**	
DFT 105	4	DFT 106	4	DFT 266	4	EGR 210	3
EGR 104	3	EGR 105	3	EGR 110	3	EGR 220	3
ENG 161	3	ENG 162, 163, or 164	3	MTH 172	4	EGR 227	3
MTH 108	4	MTH 109	4	PHY 156	4	Computer Science Elective	3
Social Science Elective	3	PHY 155	4		**15**		**12**
	17		**18**				

Expanded Functions Dental Assisting, Certificate

Division of Health Professions/Natural Sciences

The Expanded Functions Dental Assisting Program is designed to provide advanced training in the skills that are delegated as legal functions for the expanded functions dental assistant by the Pennsylvania State Board of Dentistry. These functions include:

1. placing and removing rubber dams
2. placing and removing matrices and wedges
3. applying cavity liners and bases
4. placing and condensing amalgam restorations
5. carving and contouring amalgam restorations
6. placing and finishing composite resin restorations and/or sealant material
7. placing sealants
8. coronal polishing
9. fluoride application

Candidates for the certificate must have at least three recent years experience as a dental assistant.

The program includes lab experience in the college campus facility and clinical experience in a dental office. Students are responsible to secure a clinical site to complete the clinical portion of the curriculum.

Special Admission and Selection Criteria

Admission to the expanded functions dental assisting program is highly competitive and enrollment is limited. Specific criteria for admission and selection are listed below.

- Applicants must be graduates of an accredited secondary school program or high school seniors enrolled in an accredited secondary school program, or those who hold a GED equivalency certificate prior to selection.

- Applicants must complete and submit a WCCC Application for Admission Form and Allied Health Programs Application to the Admissions Office by January 5 prior to the fall semester in which enrollment is anticipated. The form must be accompanied by official transcripts from all secondary schools attended, GED programs and any other formal education program attended beyond high school.

- All applicants must have three years recent chairside dental assisting experience **plus** a letter verifying experience, including dates and hours from the employing dentist.

- Applicants selected for admission must submit satisfactory results from pre-entrance medical examination and immunization obtained at the candidate's expense. Specific information regarding the examination will be provided to students upon acceptance.

ADMISSION CRITERIA:

- Upon initial acceptance into the program, a criminal background check, child abuse history and drug screening must be obtained at the applicant's expense. The following admission criteria are required:
  - Pennsylvania State Police Request for Criminal Record Check (SP4-164). Positive records will be evaluated individually. If an applicant has not established residency in the state of Pennsylvania for more than one year, they will need to submit FBI cards for School Employees (FD258).
  - Pennsylvania Child Abuse History Clearance (CY-168). Any record results in denial of admission to the expanded functions dental assisting program.
  - Drug screening must be completed within 10 days of the start of the program. A positive drug screen will result in denial of admission to the expanded functions dental assisting program or continuation in the program. The program reserves the right to require random drug screens while the student is enrolled.

- Applicants must have successfully completed AHA CPR-BLS for Health Care Providers prior to the start of the second semester of program enrollment.

- Applicants must purchase student liability insurance.

- **Please be aware that based on ongoing changes occurring in the dental assisting profession, it may be necessary to modify courses listed in this catalog to meet changing practice competencies.**

Expanded Functions Dental Assisting, Certificate

(CONTINUED)

Division of Health Professions/Natural Sciences

Program Learning Outcomes

This curriculum is designed to prepare students to be competent in:

- Placing and removing rubber dams
- Placing and removing matrices and wedges
- Applying cavity liners and bases
- Placing and condensing amalgam restorations
- Carving and contouring amalgam restorations
- Placing and finishing composite resin restorations
- Placing sealants
- Coronal Polishing
- Fluoride Application

PROGRAM REQUIREMENTS (TOTAL CREDITS - 17)

General Education			Major			Other Required Courses
CPT 150	Microcomp. Concepts	3	DAE 100	Dental Anatomy	2	None
SPC 156	Interpersonal Comm.	3	DAE 101	EFDA I	6	
		6	DAE 102	EFDA II	3	
					11	

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Fall Semester		Spring Semester	
DAE 100	2	DAE 102	3
DAE 101	6	CPT 150	3
SPC 156	3		**6**
	11		

Fire Science Technology, AAS

MUNICIPAL FIRE SERVICE OPTION

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

Graduates of the municipal fire service option of the fire science technology program are prepared to function as leaders in the fire science team.

Successful completion of this program of study leads to the associate of applied science degree.

Career Opportunities

Recent graduates of the fire science program have accepted jobs with the following titles: arson investigator, housing inspector, 911 dispatcher and firefighter.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- employ scientific processes, methods and computer-based research and common business computer software to solve firefighting problems
- deploy appropriate resources for the extinguishment of fires and non-emergency departmental functions by analyzing existing policies and procedures
- function as part of a management team to evaluate fire prevention and inspection policies based on new technologies and conducting organizational studies
- communicate effectively by preparing departmental reports on: incidents, budgets, training, personnel and equipment, standard operating procedures, mutual aid agreements and other operational issues
- collect and analyze information to specify mobile and portable fire suppression equipment
- analyze existing building code compliance and fire hazards and issue reports to comply with community, state and national regulations
- employ effective decision making while functioning within the local, state and national legal system to maintain legal immunity
- maintain personal, social and mental well being while functioning within a dynamic, yet hazardous occupational setting

PROGRAM REQUIREMENTS (TOTAL CREDITS — 60)

General Education		
CHM 105	Technical Chemistry	4
ENG 161	College Writing	3
ENG 162	Technical Commun.	
or		3
ENG 163	Business Commun.	
MTH 108	Math. for the Tech. I	4
SOC 155	Prin. of Sociology	3
Computer Technology Elective		3
		20

Major		
FST 101	Intro to Fire Science	3
FST 103	Fire Service Admin.	3
FST 104	Fire Service Hydraulics	3
FST 105	Public Fire Education	3
FST 109	Bldg. Codes/Standards	3
FST 220	Firefighting Tactics I	3
FST 222	Legal Asp./PA Fire Serv.	3
Fire Science Electives		9
		30

Other Required Courses		
PHY 107	Applied Physics	4
Mathematics Elective		3
Social Science Elective		3
		10

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	
ENG 161	3	CHM 105	4	FST 103	3	FST 222	3
FST 101	3	ENG 162 or 163	3	FST 109	3	PHY 107	4
FST 105	3	FST 104	3	FST 220	3	SOC 155	3
MTH 108	4	Fire Science Elective	3	Fire Science Elective	3	Fire Science Elective	3
Computer Tech. Elective	3	Mathematics Elective	3	Social Science Elective	3		**13**
	16		**16**		**15**		

Fire Science Technology, Diploma

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

Program Learning Outcomes

This curriculum is designed to prepare students to:

- deliver oral presentations on fire behavior, control and prevention methods, using prepared materials, when assigned to do so
- function in a management support role in a community-based fire service organization as part of a suppression or prevention task force
- analyze fire ground water movement problems and operate pressure-producing pumps to effectively supply a variety of fire control streams
- participate as part of an organizational team to deploy human and capital resources to achieve the organization's mission, goals, and objectives
- inspect and issue written reports on the proper operation of fire detection and suppression systems
- evaluate current and potential fire and emergency situations and issue verbal, written and radio transmission reports that effectively manages personnel to mitigate the situation

PROGRAM REQUIREMENTS (TOTAL CREDITS — 31)

General Education		
ENG 161	College Writing	3
MTH 108	Math for the Tech. I	4
SOC 155	Prin. of Sociology	3
		10

Major		
FST 101	Intro to Fire Science	3
FST 103	Fire Service Admin.	3
FST 104	Fire Service Hydraulics	3
FST 105	Public Fire Education	3
FST 107	Fire Protection Suppres.	3
FST 220	Firefighting Tactics I	3
Fire Science Elective		3
		21

Other Required Courses

None Required

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	
ENG 161	3	FST 104	3
FST 101	3	FST 107	3
FST 103	3	FST 220	3
FST 105	3	SOC 155	3
MTH 108	4	Fire Science Elective	3
	16		**15**

Fire Science Technology, Certificate

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

Program Learning Outcomes

This curriculum is designed to prepare students to:

- identify past and present building hazards that have caused catastrophic loss of life events and make oral or written recommendations to prevent future catastrophes
- complete written forms to document operating status of fire detection and suppression systems
- assist with the delivery of fire behavior and fire education programs by communicating effectively using prepared materials
- identify basic fire prevention inspection deficiencies for existing buildings and compile written reports using prepared forms
- collect organizational budget, incident and personnel data using existing forms and compile written summary reports
- interact with other fire science team members and the local community by using effective interpersonal and workplace life skills

PROGRAM REQUIREMENTS (TOTAL CREDITS — 19)

ENG 161	College Writing	3
FST 101	Intro to Fire Science	3
FST 103	Fire Service Admin.	3
FST 105	Public Fire Education	3
FST 107	Fire Protection Sup.	3
MTH 108	Math for the Tech. I	4
		19

Forensic Science, Certificate

FORENSIC SCIENCE INVESTIGATOR

Division of Health Professions/Natural Sciences

The forensic science certificate is designed to provide additional skills for those who wish to become forensic investigators for a police department, law firm, insurance company or other investigative agency.

An associate degree Science Technology Forensics Lab Technician program is also available. See page 184.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- analyze scientific evidence from crime scenes
- use scientific evidence in criminal investigations
- utilize skills as an expert witness in conjunction with other skills (lawyer, clinical lab technician, nurse, policeman, etc.)

PROGRAM REQUIREMENTS (TOTAL CREDITS — 21)

BIO 110	Intro/Forensic Biology	4
BIO 130	Intro/Forensic Pathology	4
BIO 160	Intro/Forensic Toxicology: Poisons, Drugs & Death	4
CRJ 160	Criminal Law I	3
CRJ 163	Criminal Procedure	3
CRJ 296	Intro to Criminalistics	3
		21

Graphic Communications

The Graphic Communications program of study serves the community as an active learning environment providing students knowledge and hands-on skills in keeping with the challenges of the communication environment, emerging technologies, and the contemporary issues and workforce requirements, as well as the evolving needs of business, industry and the individual.

The curriculum provides a flexible, responsive educational experience for students to build communication and creative skills, digital literacy and interdisciplinary thinking required to develop into innovative, perceptive and responsible production artists and technicians, knowledgeable customer service and sales, and technical support staff that are prepared to effectively collaborate with other creative and technical individuals and clients.

At the same time, deadline-based, production-oriented hands-on projects emphasize critical conventional and digital production skills and techniques essential for reproducing a broad range of expressive communication concepts and media for commercial printing, digital publishing, interactive PDFs, mobile devices and the web.

Associate of Applied Science Degree

The graphic communications associate of applied science degree program provides students with the options of two distinct concentrations: Graphics and Publishing - *creating and preparing files for commercial printing, digital publishing and specialty graphics*; Web and Mobile - *creating and delivering compelling content across diverse media and devices.*

Internships provide students the opportunity to work in a variety of off-campus sites to explore career options, gain valuable work-related experience, establish contacts, and enhance their skills and techniques while developing a compelling and reflective portfolio.

Graphic Communications Certificate

WCCC offers two certificates for students active or interested in graphic communications career choices. The certificates provide individuals basic, relevant knowledge, technical skills and hands-on experience to earn credentials for proof of concentrated study, increase their value to their organization, update/strengthen current knowledge and skills, explore or change careers, pursue an area of personal interest or start a small business venture.

Associate of Fine Arts Degree, AFA

The Public Service/Humanities/Social Sciences/Mathematics Division offers an associate in fine arts degree in Graphic Design (see page 55). This degree option is designed specifically for student who plan to transfer to a four-year college or university to further their visual communications education.

Graphic Communications, AAS

GRAPHICS & PUBLISHING OPTION

Division of Computer Technology/Business

The graphics and publishing associate degree is a project-based learning, tightly sequence curriculum designed to develop a student's creative, visual and technical skills of entry-level design and print workforce employment. Students develop four key skill areas: research and communication; layout and design; project management and collaboration; and production preparation (desktop, print and specialty graphics) incorporating Adobe software and graphic design tools.

Career Opportunities

Students have the opportunity to become creative and technically proficient production layout artists and technicians, and knowledgeable customer service and sales, and technical support staff for small and medium-size business, advertising firms, and publishing and printing industries. About 29 percent of individuals are self-employed professionals working on creative and technical projects. Employment is projected to increase by 13 percent from 2010 to 2020, about as fast as the average for all occupations (*www.bls.gov*).

Program Learning Outcomes

The curriculum is designed to prepare students to:

- demonstrate core skills in problem-solving, workflow knowledge, laws, regulations and policies
- interact closely with peers in preparing and monitoring quality and accuracy of digital files within set deadlines and budgets
- integrate traditional design skills and emerging technology to capture, edit, prepare and assemble images according to page layouts for specified production/publishing workflows
- independently read and research current technical periodicals and publications, communicate effectively and apply computation skills
- function effectively as a member of a prepress production team or independently to develop appropriate attitudes, soft skills and work habits
- employ effective decision-making, schedule production deadlines, research/test materials and ensure compliance within industry safety guidelines while meeting the client/customer's expectations

PROGRAM REQUIREMENTS (TOTAL CREDITS — 62)

General Education

ENG 161	College Writing	3
GCT 161	Digital Imaging & Editing I	3
English Elective		3
Humanities Elective		3
Mathematics Elective		3
Social Science Elective		3
		18

Major

GCT 100	Design Technology	1
GCT 115	Design & Layout I	3
GCT 131	Type & Publishing I	3
GCT 151	Art & Illustration I	3
GCT 155	Graphics & Lettering I	3
GCT 163	Emerging Technology II	3
GCT 185	Print & Prepress I	3
GCT 215	Design & Layout II	3
GCT 231	Type & Publishing II	3
GCT 255	Graphics & Lettering II	3
GCT 261	Digital Imaging & Editing II	3
GCT 285	Print & Prepress II	3
GCT 287	Digital Workflow	3
GCT 290	Seminar in Graphics✦	3
		40

✦*capstone course*

Other Required Courses

GCT 299	Graphics Internship	
or		3
MKT 252	Public Relations	
WEB 102	Acrobat Essentials	1
		4

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**	
ENG 161	3	GCT 131	3	GCT 215	3	GCT 163	3
GCT 100	1	GCT 155	3	GCT 231	3	GCT 261	3
GCT 115	3	GCT 185	3	GCT 255	3	GCT 287	3
GCT 151	3	English Elective	3	GCT 285	3	GCT 299 or MKT 252	3
GCT 161	3	Humanities Elective	3	GCT 290	3	Mathematics Elective	3
Social Science Elective	3		**15**	WEB 102	1		**15**
	16				**16**		

Graphic Communications, AAS

WEB & MOBILE OPTION

Division of Computer Technology/Business

The web and mobile associate degree is a project-based learning, tightly sequenced curriculum that provides instruction in design principles, layout and color, web-standard tools, techniques and technical skills for animated web content and design and publishing employment. The fundamentals of user experience and interactive content is emphasized. Students apply designer-based insights, technical knowledge and skills while incorporating Adobe software to create, publish and share their work across devices, desktop and the Web.

Career Opportunities

Students have the opportunity to become creative and technically proficient multimedia artists, motion graphic artists, knowledgeable web graphic designers, interface designers or web technicians for small and medium-sized business, advertising agencies, sound and video production firms, or web design and internet companies. Almost all individuals are self-employed professionals working on creative and technical projects.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- plan and create effective, cohesive design solutions using a variety of skills, software and digital media
- create communications informed and inspired by design research into communities and cultural spaces
- create documents for media production such as proposals, scripts, story boards, budgets and schedules
- incorporate project management and teamwork skills to address digital media industry issues
- evaluate the technical proficiency of media production/delivery within the design disciplines, media trends, global market places and popular culture
- communicate effectively, solve problems creatively, think laterally and apply computation skills
- function effectively as a member of a team or independently to develop appropriate attitudes, soft skills and work habits
- employ effective decision making, schedule production deadlines, research materials while meeting/exceeding the client/consumer's expectations

PROGRAM REQUIREMENTS (TOTAL CREDITS — 62)

General Education

ENG 161	College Writing	3
GCT 161	Digital Imaging & Editing I	3
English Elective		3
Humanities Elective		3
Mathematics Elective		3
Social Science Elective		3
		18

Major

GCT 100	Design Technology	1
GCT 115	Design & Layout I	3
GCT 125	Emerging Technology I	3
GCT 151	Art & Illustration I	3
GCT 163	Emerging Technology II	3
GCT 299	Graphics Internship	
or		3
MKT 252	Public Relations	
		16

Other Required Courses

MED 103	Podcasting & Soc. Med.	1
MED 105	Multimedia for Web	3
MED 150	Editing & Video Tech./ Premiere Pro	3
MED 159	DSLR Video Production	3
MED 170	Digital Photography/ Photoshop	3
MED 240	Audio Techniques/Aud.	3
WEB 110	Web Design	3
WEB 140	Dreamweaver Basics	3
WEB 188	Social Media	3
WEB 235	Interactive Design	3
		28

RECOMMENDED SEQUENCE

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

Fall Semester		**Spring Semester**		**Fall Semester**		**Spring Semester**	
ENG 161	3	GCT 115	3	GCT 125	3	GCT 163	3
GCT 100	1	GCT 151	3	MED 103	1	GCT 299 or MKT 252	3
MED 105	3	GCT 161	3	MED 170	3	WEB 235	3
WEB 110	3	MED 150	3	MED 240	3	Humanities Elective	3
WEB 140	3	MED 159	3	WEB 188	3	Mathematics Elective	3
Social Science Elective	3		**15**	English Elective	3		**15**
	16				**16**		

Graphic Communications, Certificate

GRAPHICS AND PUBLISHING

Division of Computer Technology/Business

The graphics and publishing certificate is designed to provide students with the basic skills and knowledge or design theory and industry-based technology to produce graphic art and visual materials necessary to effectively communicate visual and conceptual information through digital publishing, specialty and commercial printing for print and the web. Courses included in this certificate may be applied toward the Graphic Communications AAS Graphics and Publishing Option.

Career Opportunities

Students have the opportunity to become entry-level production layout artists and customer service and sales for small and medium-sized business, advertising firms, and publishing and printing industries. About 29 percent of individuals are self-employed professionals working on creative and technical projects. Employment is projected to increase by 13 percent from 2010 to 2020, about as fast as the average for all occupations (*www.bls.gov*).

Program Learning Outcomes

This curriculum is designed to prepare students to:

- demonstrate proficiency with Apple computers, Adobe design software and various print and prepress production techniques and processes
- integrate design and typographic principles, appropriate tools, materials and processes to create, edit and troubleshoot digital elements for print and web communications
- communicate effectively, develop appropriate attitudes, soft skills and work habits while working collaboratively within a creative team or independently

PROGRAM REQUIREMENTS (TOTAL CREDITS — 16)

	Major	
GCT 100	Design Technology	1
GCT 115	Design & Layout I	3
GCT 131	Type & Publishing I	3
GCT 151	Art & Illustration I	3
GCT 155	Graphics & Lettering I	3
GCT 161	Digital Imaging I	3
		16

Graphic Communications, Certificate

WEB AND MOBILE

Division of Computer Technology/Business

The web and mobile certificate provides students with basic hands-on experience with the tools to visualize and communicate information in compelling ways across media and formats. The certificate focuses on Web design and structure, and stress the importance of accessibility, usability and optimization and best practices. Courses included in this certificate may be applied toward the Graphic Communications AAS Web and Mobile Option.

Career Opportunities

Graduates of the certificate will have acquired the basic skills necessary for entry-level positions such as Web graphic designers or multimedia artists within the fields of web design and content development. Almost all individuals are self-employed professionals working on creative and technical projects. Employment is expected to grow by 8 percent from 2010 to 2020, slower than the average for all occupations (www.bls.gov).

Program Learning Outcomes

This curriculum is designed to prepare students to:

- demonstrate proficiency with Apple computers, Adobe production software and various multimedia, web and mobile production techniques and processes
- effectively research, plan and implement static and motion content design, optimization and publishing for screen-based media, and web and mobile communications
- communicate effectively, develop appropriate attitudes, soft skills and work habits while working collaboratively with a creative team or independently

PROGRAM REQUIREMENTS (TOTAL CREDITS — 17)

	Major	
GCT 100	Design Technology	1
GCT 115	Design & Layout I	3
GCT 125	Emerging Technology I	3
GCT 151	Art & Illustration I	3
GCT 163	Emerging Technology II	3
MED 103	Podcasting & Social Media	1
MED 105	Multimedia for Web	3
		17

Heating, Ventilation, Air-Conditioning and Refrigeration, AAS

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

This program provides students with an in-depth background of the heating, ventilation, air-conditioning and refrigeration industry. By combining theory and practical shop experiences, students will develop the skills needed for design, installation, maintenance and troubleshooting HVAC&R systems for residential and commercial applications.

Successful completion of this program leads to the associate of applied science degree.

Career Opportunities

Recent graduates of the HVAC&R program have obtained jobs with the following titles: HVAC instructor, service technician, installer, inside salesperson, maintenance technician, contractor and troubleshooter.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- work as a team to solve problems with HVAC equipment
- use control logic to find and repair electrical problems in HVAC systems
- use computers and the internet to calculate HVAC loads, design ducts and hydronic systems
- identify and demonstrate proper use of HVAC hand tools, meters and gauges
- demonstrate ability to fabricate ductwork
- become certified in EPA Refrigerant Handling by passing the EPA Refrigeration Exam
- read and interpret electrical ladder and pictorial diagrams to wire and troubleshoot electrical components in HVAC systems
- communicate effectively verbal and written orders
- read and interpret charts, diagrams, installation and service manuals

PROGRAM REQUIREMENTS (TOTAL CREDITS — 62/64)

General Education

DFT 258	AutoCAD	4
ENG 161	College Writing	3
ENG 162 or ENG 163 or ENG 164	Technical Commun. / Business Commun. / Advanced Composition	3
MTH 108	Math for the Tech. I	4
Science Elective		3/4
Social Science Elective		3
		20/21

Major

HAC 101	Heating & Cooling Fund.	4
HAC 150	Psychro. & Heat Load Est.	3
HAC 170	HVAC Control Systems	3
HAC 230	Air Dist. Design & Code	3
HAC 240	HVAC Duct Fabrication	4
HAC 250	Air-Conditioning I	4
HAC 255	Heat Pumps	4
HAC 260	Hydronics	4
		29

Other Required Courses

ELC 106	Circuit Analysis I	4
HAC 280	Residential Wiring	4
HAC 290	Refrig. Recovery	3
Drafting Elective		3/4
		14/15

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**	
ELC 106	4	HAC 170	3	ENG 161	3	DFT 258	4
HAC 101	4	HAC 255	4	HAC 150	3	ENG 162, 163 or 164	3
HAC 240	4	HAC 260	4	HAC 280 or ELC 191	4	HAC 230	3
HAC 250	4	HAC 290	3	MTH 108	4	Science Elective	3/4
	16		**14**	Drafting Elective	3/4	Social Science Elective	3
					17/18		**16/17**

Heating, Ventilation, Air-Conditioning and Refrigeration, Certificate

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

The heating, ventilation, air-conditioning and refrigeration certificate program provides students the basic skills to work in an entry level position in the HVAC&R field. The class and lab experiences will help the student develop skills in installation, maintenance and troubleshooting for residential as well as commercial applications.

Career Opportunities

Graduates of this program can obtain jobs as service technicians, installers, maintenance technicians or troubleshooters.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- enter the HVAC field as entry level installers and service people
- identify and demonstrate the proper use of HVAC hand tools, meters, gauges to install, troubleshoot and repair HVAC equipment

PROGRAM REQUIREMENTS (TOTAL CREDITS – 30)

HAC 101	Heating & Cooling Fund.	4
HAC 170	HVAC&R Control Sys.	3
HAC 240	HVAC Duct Fabrication	4
HAC 250	Air-Conditioning I	4
HAC 255	Heat Pumps	4
HAC 260	Hydronics	4
HAC 280	Residential Wiring	
or		4
ELC 191	Basic Prin. of Ind. Elec.	
HAC 290	Refrigeration Recovery	3
		30

RECOMMENDED SEQUENCE

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

Fall Semester		**Spring Semester**	
HAC 101	4	HAC 170	3
HAC 240	4	HAC 255	4
HAC 250	4	HAC 260	4
HAC 280 or ELC 191	4	HAC 290	3
	16		**14**

Homeland Security, AAS

Division of Public Service/Humanities/Social Science/Mathematics

The homeland security associate of applied science degree is designed to provide students with the skills, knowledge and hands-on experiences to prepare them for entry level positions within a homeland security organization or in continuing their educational pursuits toward a bachelor's degree in homeland security from one of the cooperating schools participating in the Region 13 Homeland Security Higher Education Training Consortium.

Career Opportunities

Students successfully completing the homeland security associates degree program may find employment opportunities in the private security industry as well as local, regional, state and federal homeland security and emergency management agencies.

Program Learning Outcomes

This curriculum is designed to prepare student to:

- discuss a broad overview of the homeland security and emergency management program in the United States
- state the origins of terrorism and terrorist motivations
- identify how to assess and safeguard critical infrastructure and key resources
- demonstrate critical and analytical thinking and decision making
- demonstrate basic knowledge and processes of funding sources and grants management
- explain the basic issues of information security and cyber security in mitigating threat potential
- develop a continuity of operations plan for an existing organization
- state the elements of a fire management program
- list the basic components of the criminal justice system
- discuss pre-hospital emergency medical services, hospital capabilities and United States concerns about weapons of mass destruction
- list the key organizations involved in homeland security and emergency management

PROGRAM REQUIREMENTS (TOTAL CREDITS — 60)

General Education

ENG 161	College Writing	3
ENG 162	Technical Communica.	
or		
ENG 163	Business Communica.	
or		3
ENG 164	Advanced Composition	
or		
ENG 168	Police Report Writing	
CPT 150	Microcomputer Concepts	3
BUS 120	Math for Business	3
PSY 160	General Psychology	3
SPC 155	Effective Speech	
or		3
SPC 156	Interpersonal Comm	
		18

Major

CIS 168	Prin. of Info. Security	3
CRJ 155	Intro to Criminal Just.	3
CRJ 225	Criminology of Terrorism	3
HSM 101	Orientation to Hmlnd Sec.	3
HSM 103	Vulnerability Assess. & Phys. Security	3
HSM 105	Hmlnd Sec. Grant Wrtg.	3
HSM 107	Continuity of Op. Plan.	3
HSM 109	Emer. Med. Serv. & Hlth. Serv. Orient.	3
HSM 201	Emerg. Mgmt. & Planning	3
		30

Other Required Courses

CRJ 195	Intro to Private Sec.	3
CRJ 276	Community Relations	
or		3
CRJ 287	Multiculturalism	
CRJ 296	Criminalistics	3
HUM 156	Critical Thinking	3
		12

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

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

Fall Semester	
CRJ 225	3
ENG 161	3
HSM 101	3
HSM 103	3
SPC 156	3
	15

Spring Semester	
CIS 168	3
HSM 105	3
HSM 107	3
PSY 160	3
	12
Summer	
CPT 150	3
CRJ 195	3
	6

Fall Semester	
CRJ 155	3
CRJ 296	3
HSM 102	3
HSM 109	3
HUM 156	3
	15

Spring Semester	
BUS 120	3
CRJ 276 or 287	3
ENG 162	3
HSM 201	3
	12

Homeland Security, Certificate

Division of Public Services/Humanities/Social Sciences/Mathematics

The Homeland Security certificate offers the student a firm foundation in the understanding of the Department of Homeland Security (DHS). It provides them with an overview of the primary areas of focus in homeland security (law enforcement, emergency management, fire, emergency medical).

Career Opportunities

Graduates of the homeland security certificate can expect to find entry level employment in a myriad of areas that support the DHS. These include emergency management, police, border and customs, immigration, fire, private security and numerous other support activities.

Program Learning Outcomes

The curriculum is designed to prepare students to:

- discuss a broad overview of homeland security and emergency management in the U.S.
- state the origins of terrorism and terrorists motivation
- identify how to assess and safeguard critical infrastructures and key resources
- discuss the strengths, weaknesses and capabilities of fire, law enforcement, emergency management and emergency medical personnel
- demonstrate an understanding of cyber security
- prepare a grant for funding
- develop a incorporate Continuity of Operations Plans for an existing organization

PROGRAM REQUIREMENTS (TOTAL CREDITS – 18)

CIS 168	Prin. of Info Security	3
CRJ 225	Criminology of Terrorism	3
HSM101	Orient. to Hmelnd. Sec. & Emer. Prep. Planning & Response	3
HSM 103	Intro to Physical Sec. & Deterr. to Terrorism	3
HSM 105	Hmelnd. Sec. Grant Wrtng. & Grant Mgt.	3
HSM 107	Cont. of Oper. Planning	3
		18

RECOMMENDED SEQUENCE

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

Fall Semester		**Spring Semester**	
CRJ 225	3	CIS 168	3
HSM 101	3	HSM 105	3
HSM103	3	HSM107	3
	9		**9**

Horticulture, AAS

FLORICULTURE OPTION

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

This option of the horticulture degree is designed to provide students with the necessary skills to work in areas of greenhouse management, garden center management, interior plantscaping and floral shop management.

Career Opportunities

Graduates of this option can be self-employed or obtain jobs as greenhouse growers, garden center managers, interior plantscapers, floral shop managers or professionals in related fields.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- identify and properly utilize important species of annuals and herbaceous perennials
- identify and properly utilize important species of ornamental trees and shrubs
- design, install and maintain interior landscaping
- schedule and produce common greenhouse crops
- make floral arrangements for general use and special occasions
- identify and control common pests that infest plants
- perform calculations related to fertilization and pesticide application
- communicate effectively with customers with letters or e-mails
- demonstrate basic knowledge of computer technology

PROGRAM REQUIREMENTS (TOTAL CREDITS – 61)

General Education		
CHM 107	Intro Concepts/Chem.	4
CPT 150	Microcomp. Concepts	3
ENG 161	College Writing	3
ENG 163	Business Commun.	3
Mathematics Elective		3
Social Science Elective		3
		19

Major		
HOR 105	Intro to Horticulture	3
HOR 125	Ornamental Shrubs	3
HOR 126	Ornamental Trees	3
HOR 155	Soils and Soil Fertility	4
HOR 157	Plant Pests	4
HOR 212	Pruning	3
		20

Concentration		
HOR 107	Landscape Drawing	3
HOR 170	Floral Dsgn. & Arranging	3
HOR 198	Floriculture Internship	3
HOR 215	Annuals & Herb. Perennials	3
HOR 241	Greenhouse Oper. & Mgmt.	3
HOR 250	Int. Plants & Plantscaping	4
HOR 270	Greenhouse Production	3
		22

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

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

Fall Semester	
CPT 150	3
HOR 105	3
HOR 125	3
Mathematics Elective	3
	12

Spring Semester	
CHM 107	4
HOR 107	3
HOR 126	3
HOR 155	4
	14

Summer Semester	
HOR 212	3
HOR 250	4
	7

Fall Semester	
ENG 161	3
HOR 157	4
HOR 198	3
HOR 215	3
HOR 241	3
	16

Spring Semester	
ENG 163	3
HOR 170	3
HOR 270	3
Social Science Elective	3
	12

Horticulture, AAS

LANDSCAPE DESIGN, INSTALLATION AND MAINTENANCE OPTION

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

This option of the horticulture degree is designed to provide students with the necessary skills to work in the landscaping industry.

Career Opportunities

Graduates of this option can be self-employed as landscapers or obtain jobs as landscape designers, managers, estimators, and technicians in landscape installation and maintenance and related fields.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- identify and properly utilize important species of annuals and herbaceous perennials
- identify and properly utilize important species of ornamental trees and shrubs
- design residential and non-commercial properties
- install landscapes according to blue prints
- properly maintain established landscapes
- start and maintain lawns
- perform calculations related to turf fertilization, liming, and pesticide application
- perform calculations necessary for running a landscaping business
- prepare bidding packages for residential and commercial properties
- communicate effectively with customers with letters or e-mails
- demonstrate basic knowledge of computer technology

PROGRAM REQUIREMENTS (TOTAL CREDITS – 61)

General Education			Major			Concentration		
CHM 107	Intro Concepts/Chem.	4	HOR 105	Intro to Horticulture	3	HOR 107	Landscape Drawing	3
CPT 150	Microcomp. Concepts	3	HOR 125	Ornamental Shrubs	3	HOR 110	Intro to Turfgrass Mgmt.	3
ENG 161	College Writing	3	HOR 126	Ornamental Trees	3	HOR 199	Internship	3
ENG 163	Business Commun.	3	HOR 155	Soils and Soil Fertility	4	HOR 205	Residential Landscap.	3
Mathematics Elective		3	HOR 157	Plant Pests	4	HOR 207	Adv. Landscaping	3
Social Science Elective		3	HOR 212	Pruning	3	HOR 215	Annuals & Herb. Perennials	3
		19			**20**	HOR 275	Landscp. Equip. Inst. & Maint.	4
								22

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	
CPT 150	3	CHM 107	4	ENG 161	3	ENG 163	3
HOR 105	3	HOR 107	3	HOR 157	4	HOR 199	3
HOR 125	3	HOR 110	3	HOR 205	3	HOR 207	3
Mathematics Elective	3	HOR 126	3	HOR 215	3	Social Science Elective	3
	12	HOR 155	4		**13**		**12**
			17				
		Summer Semester					
		HOR 212	3				
		HOR 275	4				
			7				

Horticulture, AAS

TURFGRASS MANAGEMENT OPTION

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

This option of the horticulture degree is designed to provide students with the necessary skills to work in the field of turfgrass management.

Career Opportunities

Graduates of this option can be self-employed as turf care professionals or obtain jobs as golf course or athletic field superintendants, and technicians in lawn care companies and related fields.

Program Learning Outcomes

This curriculum is designed to prepare students to:

* identify and characterize the cultural requirements of the important turfgrass species used in lawns, golf courses, and sports fields
- select the right turfgrass species for specific locations
- operate and maintain turf care equipment
- install and maintain different types of turf
- identify and control turfgrass insects, diseases, and weeds
- calibrate and operate spray equipment
- perform calculations related to turf fertilization, liming, and pesticide application
- identify and properly utilize important species of ornamental trees and shrubs
- communicate effectively with customers with letters or e-mails
- manage employees effectively
- demonstrate basic knowledge of computer technology

PROGRAM REQUIREMENTS (TOTAL CREDITS – 62)

General Education

CHM 107	Intro Concepts/Chem.	4
CPT 150	Microcomp. Concepts	3
ENG 161	College Writing	3
ENG 163	Business Commun.	3
Mathematics Elective		3
Social Science Elective		3
		19

Major

HOR 105	Intro to Horticulture	3
HOR 125	Ornamental Shrubs	3
HOR 126	Ornamental Trees	3
HOR 155	Soils and Soil Fertility	4
HOR 157	Plant Pests	4
HOR 212	Pruning	3
		20

Concentration

HOR 110	Intro to Turfgrass Mgmt.	3
HOR 120	Turfgrass Equip. Mech.	4
HOR 150	Spec. Turfgrass Mgmt.	3
HOR 275	Landsc. Equip. Inst. & Maint.	4
HOR 289	Turfgrass Internship I	3
HOR 299	Turfgrass Internship II	3
		20

Other Required Coures

BUS 158	Principles of Mgmt.	3
		3

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

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

Fall Semester	
CPT 150	3
HOR 105	3
HOR 125	3
Mathematics Elective	3
	12

Spring Semester	
CHM 107	4
HOR 110	3
HOR 126	3
HOR 155	4
	14

Summer Semester	
HOR 212	3
HOR 275	4
	7

Fall Semester	
ENG 161	3
HOR 120	4
HOR 157	4
HOR 289	3
	14

Spring Semester	
ENG 163	3
BUS 158	3
HOR 150	3
HOR 299	3
Social Science Elective	3
	15

Horticulture, Certificate

FLORICULTURE

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

This certificate program provides students with the necessary skills for working in garden centers, greenhouses and floral shops.

Career Opportunities

Graduates of this program can be self-employed or obtain jobs as technicians in garden centers greenhouses, floral shops and related businesses.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- identify and properly utilize important species of annuals and herbaceous perennials
- design, install and maintain interior landscaping
- schedule and produce common greenhouse crops
- make floral arrangements for general use and special occasions

PROGRAM REQUIREMENTS (TOTAL CREDITS – 19)

HOR 105	Intro to Horticulture	3
HOR 170	Floral Dsgn. & Arranging	3
HOR 215	Annuals & Herb. Peren.	3
HOR 241	Greenhouse Operations Mgmt.	3
HOR 250	Interior Plantscaping	4
HOR 270	Greenhouse Production	3
		19

RECOMMENDED SEQUENCE

Fall Semester		**Summer Semester**	
HOR 105	3	HOR 250	4
	3		**4**
Spring Semester		**Fall Semester**	
HOR 170	3	HOR 215	3
HOR 270	3	HOR 241	3
	6		**6**

Horticulture, Certificate

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

This certificate program provides students with the necessary skills for identifying and properly utilizing trees, shrubs, and annual and herbaceous perennial flowers in landscapes. It also prepares them for soil and pest management.

Career Opportunities

Graduates of this program can obtain jobs as technicians in nurseries, garden centers or landscaping companies.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- identify and properly utilize trees, shrubs, and bedding plants
- identify problems related to soil and make recommendations for improvement
- identify and control important insects, diseases, and weeds
- calculate the amount of fertilizers, pesticides needed for a given area
- apply pesticides safely

PROGRAM REQUIREMENTS (TOTAL CREDITS – 20)

HOR 105	Intro to Horticulture	3
HOR 125	Ornamental Shrubs	3
HOR 126	Ornamental Trees	3
HOR 155	Soils & Soil Fertility	4
HOR 157	Insects & Dis. of Plants	4
HOR 215	Annuals & Herb. Peren.	3
		20

RECOMMENDED SEQUENCE

Fall Semester		**Fall Semester**	
HOR 105	3	HOR 157	3
HOR 125	3	HOR 215	4
	6		**7**
Spring Semester			
HOR 126	3		
HOR 155	4		
	7		

Horticulture, Certificate

LANDSCAPE DESIGN

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

The landscape design certificate program provides students with the necessary skills for developing landscape designs for residential, commercial and other properties. It also prepares students for estimating landscape cost for various properties and doing bidding packages.

Career Opportunities

Graduates of this program can obtain jobs as landscape designers for landscaping companies, landscape consultants, and landscape technicians overseeing the installation of landscape designs.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- develop landscape design programs
- prepare landscape designs for residential properties
- prepare landscape designs for commercial properties and other non residential properties
- estimate costs of landscaping based on different designs
- prepare bidding packages based on different designs

PROGRAM REQUIREMENTS (TOTAL CREDITS – 18)

HOR 105	Intro to Horticulture	3
HOR 107	Landscape Drawing	3
HOR 125	Ornamental Shrubs	3
HOR 126	Ornamental Trees	3
HOR 205	Residential Landscaping	3
HOR 207	Adv. Landscaping	3
		18

RECOMMENDED SEQUENCE

Fall Semester		**Fall Semester**	
HOR 105	3	HOR 205	3
HOR 125	3		**3**
	6	**Spring Semester**	
Spring Semester		HOR 207	3
HOR 107	3		**3**
HOR 126	3		
	6		

Horticulture, Certificate

LANDSCAPE INSTALLATION AND MAINTENANCE

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

This certificate program provides students with the necessary skills for installing and maintaining residential and commercial landscapes

Career Opportunities

Graduates of this program can start their own landscaping businesses or obtain jobs as technicians and/or foremen in landscape installation and maintenance for landscaping companies.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- construct important landscape structures such as patios, retaining walls, sidewalks and so on
- plant trees and shrubs under various conditions
- start new lawns with seeds or sod
- prune trees and shrubs properly
- maintain and improve existing landscapes

PROGRAM REQUIREMENTS (TOTAL CREDITS – 23)

HOR 105	Intro to Horticulture	3
HOR 110	Intro o Turfgrass Mgmt.	3
HOR 125	Ornamental Shrubs	3
HOR 126	Ornamental Trees	3
HOR 157	Insects & Disease of Plants	4
HOR 212	Pruning	3
HOR 275	Landsc. Equip. Inst. & Main.	4
		23

RECOMMENDED SEQUENCE

Fall Semester		**Summer Semester**	
HOR 105	3	HOR 212	3
HOR 125	3	HOR 275	4
	6		**7**
Spring Semester		**Fall Semester**	
HOR 110	3	HOR 157	4
HOR 126	4		**4**
	7		

Horticulture, Certificate

TURFGRASS MANAGEMENT

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

This certificate program provides students with the necessary skills for starting and maintaining lawns, athletic fields, and golf courses.

Career Opportunities

Graduates of this program may obtain jobs as technicians in golf courses, athletic fields, and landscaping companies taking care of a variety of turfs.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- identify and properly utilize imporatn species of turfgrass
- start lawns or other types of turf with seed or sod
- identify important insects, diseases, and weeds that infest turf
- properly operate and maintain turf equipment
- apply pesticides safely

PROGRAM REQUIREMENTS (TOTAL CREDITS – 17)

HOR 105	Intro to Horticulture	3
HOR 110	Intro to Turfgrass Mgmt.	3
HOR 120	Turfgrass Equip. Mech.	4
HOR 150	Spec. Turfgrass Mgmt.	3
HOR 155	Soils & Soil Fertility	4
		17

RECOMMENDED SEQUENCE

Fall Semester		**Fall Semester**	
HOR 105	3	HOR 120	4
	3		**4**
Spring Semester		**Spring Semester**	
HOR 110	3	HOR 150	3
HOR 155	4		**3**
	7		

Hotel and Resort Management, AAS

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

Hotel and Resort Management is one of the majors comprising the college's Center for Culinary Arts and Hospitality. This curriculum is designed to prepare students for various positions with the hotel/lodging industry. Emphasis is given to the development of knowledge and skills in essential areas such as social and economic tourism, salesmanship, marketing, food and beverage, event management, lodging management, property management and recreation. This program also requires the student to arrange and participate in three credits of approved internship so that class room learning can be applied or experienced at lodging and resort facilities.

Students are expected to be well groomed in compliance with standards of sanitation. Uniforms and program tool kit are required for all lab classes. Business attire is required for various class assignments and internship experience. Students will also be required to provide medical proof of good physical health.

Career Opportunities

Students earning an associate degree in this program may be employed in positions such as hotel/motel managers or assistant managers; food, beverage and banquet managers or assistants; convention and special event coordinators; sales managers, department managers or assistants for lodging facilities; customer service representatives; and tourism promotion representatives.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- identify the importance of travel and tourism as a major industry in the local community and global environment
- recognize the impact of diversity as it relates to the host community and successful tourism
- utilize the latest computer technology to manage information as it relates to the tourism and lodging industry
- practice the technical skills needed for successful daily operation of a lodging and resort business
- recognize the role of management in controlling and supervising the functions of the various departments, properties and activities of tourism and lodging operations
- analyze and apply marketing objectives and sales strategies to the operations necessary for the management of tourism and lodging facilities
- recognize the economic and social impact of tourism and lodging to the local, regional and international economics and social structures
- utilize interpersonal and personal skills within tourism and lodging properties using acceptable procedures, practices and acquired skills
- analyze the records, financial data and systems of operation necessary for the management of lodging systems
- satisfy diverse customer expectations

Hotel and Resort Management, AAS

(CONTINUED)

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

PROGRAM REQUIREMENTS (TOTAL CREDITS — 66)

General Education

BUS 120	Business Math	3
CPT 150	Microcomputer Concepts	3
ENG 161	College Writing	3
ENG 163	Business Commun.	
or		3
ENG 164	Adv. Composition	
Humanities Elective		
or		3
FSM 170	Food Culture & Religion	
Social Science Elective		3
		18

Major

FSM 105	Foods I	4
FSM 112	Quantity Foods	4
FSM 113	Customer Service	3
FSM 117	Wait Staff/Din.Rm.Trng.	1
FSM 118	Sanitation	2
FSM 119	Beverage Managment	1
FSM 157	Catering	3
FSM 215	Food Purch. & Menu Mgmt.	3
FSM 218	Hospitality Marketing	3
FSM 219	Hospitality Internship	3
FSM 235	Supervision & Training	3
HMT 160	Exec. Houskpg./Front Off.	3
HMT 161	Rec. Facilities Mgmt.	3
HMT 170	Gaming & Casino Oper.	3
HMT 262	Lodg. & Property Mgmt.	3
HMT 264	Convention/Meet. Mgmt.	3
TRV 171	Travel/Tourism Princ.	3
		48

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

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

Fall Semester	
CPT 150	3
ENG 161	3
FSM 113	3
FSM 117	1
FSM 118	2
FSM 119	1
TRV 171	3
	16

Spring Semester	
BUS 120	3
ENG 163 or ENG 164	3
FSM 105	4
HMT 160	3
HMT 170	3
	16

Fall Semester	
FSM 157	3
FSM 215	3
HMT 161	3
HMT 262	3
Humanities Elective or FSM 170	3
	15

Spring Semester	
FSM 112	4
FSM 218	3
FSM 235	3
HMT 264	3
Social Science Elective	3
	16

Summer Semester	
FSM 219	3
	3

Hotel and Resort Management, Diploma

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

Hotel and Resort Management is one of the majors comprising the college's Center for Culinary Arts and Hospitality. This curriculum is designed to prepare students for positions with the hotel/lodging/resort industry. Emphasis is given to the development of knowledge and skills in essential areas such as social and economic tourism, salesmanship, event management, lodging management, property management and recreation.

Students are expected to be well groomed in compliance with standards of sanitation. Uniforms and program tool kit are required for all lab classes. Business attire is required for various class assignments and internship experience. Students will also be required to provide medical proof of good physical health.

Career Opportunities

Students earning a diploma in this program may be employed in positions such as assistant hotel/motel managers; food, beverage and banquet assistant managers; convention and special event coordinators; sales assistants, department assistants for lodging facilities; customer service representatives; and tourism promotion representatives.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- identify the importance of travel and tourism as a major industry in the local community and global environment
- recognize the impact of diversity as it relates to the host community and successful tourism
- utilize the latest computer technology to manage information as it relates to travel, tourism and lodging
- practice the technical skills needed for successful daily operation of a tourism and lodging business
- recognize the role of management in controlling and supervising the functions of the various departments, properties and activities of tourism and lodging operations
- analyze and apply marketing objectives and sales strategies to the operations necessary for the management of tourism lodging facilities
- recognize the economic and social impact of travel and tourism to the local, regional and international economics and social structures
- utilize interpersonal and personal skills within tourism and lodging properties using acceptable procedures, practices and acquired skills
- analyze the records, financial data and systems of operation necessary for the management of lodging systems
- satisfy diverse customer expectations

PROGRAM REQUIREMENTS (TOTAL CREDITS — 48)

	Major	
FSM 105	Foods I	4
FSM 112	Quantity Foods	4
FSM 113	Customer Service	3
FSM 117	Wait Staff/Din.Rm.Trng.	1
FSM 118	Sanitation	2
FSM 119	Beverage Managment	1
FSM 157	Catering	3
FSM 215	Food Purch. & Menu Mgmt.	3
FSM 218	Hospitality Marketing	3
FSM 219	Hospitality Internship	3
FSM 235	Supervision & Training	3
HMT 160	Exec. Houskpg./Front Off.	3
HMT 161	Rec. Facilities Mgmt.	3
HMT 170	Gaming & Casino Oper.	3
HMT 262	Lodg. & Property Mgmt.	3
HMT 264	Convention/Meet. Mgmt.	3
TRV 171	Travel/Tourism Princ.	3
		48

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**	
FSM 113	3	FSM 105	4	FSM 112	4
FSM 117	1	FSM 235	3	FSM 157	3
FSM 118	2	HMT 160	3	FSM 215	3
FSM 119	1	HMT 170	3	FSM 218	3
HMT 161	3	HMT 264	3	FSM 219	3
HMT 171	3		**16**		**15**
HMT 262	3				
	16				

Hotel and Resort Management, Certificate

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

Hotel and Resort Management is one of the majors comprising the college's Center for Culinary Arts and Hospitality. This curriculum is designed to prepare students for entry positions with the hotel/lodging industry. Emphasis is given to the development of knowledge and skills in essential areas such as social and economic tourism, salesmanship, event management, lodging management, property management and recreation.

Career Opportunities

Students earning a certificate in this program may be employed in positions such as front desk clerks; beverage and banquet servers and hosts; room service attendants; housekeeping supervisors; and activities coordinators.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- identify the importance of travel and tourism as a major industry in the local community and global environment
- recognize the impact of diversity as it relates to the host community and successful tourism
- utilize the latest computer technology to manage information as it relates to travel, tourism and lodging
- practice the technical skills needed for successful daily operation of a tourism and lodging business
- recognize the economic and social impact of travel and tourism to the local, regional and international economics and social structures
- utilize interpersonal and personal skills within tourism and lodging properties using acceptable procedures, practices and acquired skills
- satisfy diverse customer expectations

PROGRAM REQUIREMENTS (TOTAL CREDITS — 18)

HMT 160	Exec. Houskpg./Front Off.	3
HMT 161	Rec. Facilities Mgmt.	3
HMT 170	Gaming & Casino Oper.	3
HMT 262	Lodg. & Property Mgmt.	3
HMT 264	Convention/Meet. Mgmt.	3
TRV 171	Travel/Tourism Princ.	3
		18

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**	
HMT 161	3	HMT 160	3
HMT 262	3	HMT 170	3
TRV 171	3	HMT 264	3
	9		**9**

Human Services/Social Work, AAS

Division of Public Service/Humanities/Social Sciences/Mathematics

The Human Services/Social Work program is designed to provide students with the knowledge base for the profession and general skills to enter into the workforce and/or transfer to a bachelor's program. Students who want to pursue a career in human services/social work have a sincere concern for others, ability to motivate others and desire to make a change in the world. The program allows for classroom instruction about the field including networking with agency workers in the area and learning about available programs. The program includes the opportunity to spend one semester in an agency where the skills and knowledge acquired in the classroom will be applied. The student will also earn general education credits that will apply to a bachelor's program.

Career Opportunities

Students who complete this program of study may be employed as entry level case aides or caseworkers, resident counselors in youth and adult programs and other entry level human services and social work positions in the community. Students in this program are usually interested in working in the fields of child welfare, counseling, adoption, drug and alcohol, healthcare, mental health, aging, community organization, politics and race relations.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- identify target populations, their needs, interactions and goals including the aging population
- use their local human services system to access services for clients
- provide basic casework services to clients
- conduct an interview and prepare written documentation and assessments
- use appropriate problem solving methods to advance the client
- organize and facilitate a support, education or task group
- identify client strengths and weaknesses and build action plans accordingly
- provide quality services to clients of various cultures and abilities while respecting the historical and societal influences on their lived experience
- utilize a basic knowledge of substance abuse issues when identifying and treating client problems
- analyze how political, community, and societal structures affect social services programs and funding
- describe developmental theories of the human life cycle and how different phases of human development influence the clients and the decisions they make
- demonstrate a knowledge of the present day social welfare system and how it has been influenced throughout history
- articulate knowledge of the values and code of ethics of the helping professions
- express self-awareness regarding personal motives for choosing this field and profession
- articulate personal values that are reflected in professional behavior, appearance, and communication
- explain attitudes about self in relation to others in the context of current social issues
- exhibit knowledge of the present day social welfare system, how it has been influenced throughout history and the history of the profession

Human Services/Social Work, AAS

CONTINUED

Division of Public Service/Humanities/Social Sciences/Mathematic

PROGRAM REQUIREMENTS (TOTAL CREDITS — 61/62)

General Education

ENG 161	College Writing	3
ENG 164	Advanced Composition	3
SOC 155	Principles of Sociology	3
Computer Technology Elective		3
Humanities Elective (PHL 160 or 161)		3
Mathematics Elective		3
		18

Major

HMS 155	Intro to Human Services & Social Work	3
HMS 157	Intvwing./Recrdkpg. Sk.	3
HMS 160	Group Process	3
HMS 162	Problem Solving	3
HMS 170	Race & Diversity in the U.S.	3
HMS 171	Intro to Gerontology	3
HMS 172	Drug/Alcohol Depend.	3
HMS 258	HMS Practicum I	4
		25

Other Required Courses

PSY 160	General Psychology	3
PSY 161	Human Growth & Dev.	3
PSY 270	Abnormal Psychology	3
		9

***Restricted Electives** *(pick three)*

ASL 101	American Sign Language I
ASL 102	American Sign Language II
BIO 155	Biology I
BUS 158	Principles of Management
HIS 155 or HIS 156	Early Western Civilization or Modern Western Civilization
HIS 255	Early U.S. & Pa. History
HMS 163	Intro to Social Welfare
HMS 259	Practicum II
PHL 160	Intro to Philosophy
PHL 161	Intro to Ethics
PSY 265	Child Psychology
PSY 268	Adolescent Psychology
SOC 161	Marriage and Family
SOC 162	Contemp. Soc. Problems
SPC 155	Effective Speech

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**	
ENG 161	3	ENG 164	3	HMS 160	3	HMS 170	3
HMS 155	3	HMS 157	3	HMS 162	4	HMS 172	3
PSY 160	3	PSY 161	3	HMS 171	3	HMS 258	4
SOC 155	3	Computer Tech Elective	3	PSY 270	3	Humanities Elective	3
Mathematics Elective	3	Restricted Elective*	3/4	Restricted Elective*	3/4	Restricted Elective*	3/4
	15		**15/16**		**15/16**		**16/17**

Industrial Electricity Technology, Certificate

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

The industrial electricity technology certificate is designed to provide students with the skills and knowledge required to work in an entry level position in the industrial electrical field. Students develop knowledge and skills in the installation and maintenance of electrical systems including programmable logic controllers and variable speed drives, safety and accident prevention, wiring methods, circuits and power distribution systems.

Career Opportunities

Students who graduate with a certificate in industrial electronics technology may find jobs as industrial electrical maintenance technicians or industrial electrical repair technicians.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- install, maintain, troubleshoot and repair electrical devices and systems such as PLCs, motors controls and relay control systems
- install, maintain, troubleshoot and repair industrial enclosures, wiring, conduit and cable-tray equipment
- demonstrate safety practices on the job
- design industrial electrical currents
- install, maintain, troubleshoot and repair power distribution equipment and systems
- communicate technological ideas and information with others
- work effectively with electrical and electronic test equipment and tools

PROGRAM REQUIREMENTS (TOTAL CREDITS – 16)

ELC 191	Basic Prin. of Ind. Elec.	4
ELC 192	Indus, Electrical Equi.	4
ELC 221	Industrial Motor Cntrl.	4
ELC 222	Adv. Indus. Motor Cntrl.	4
		16

Industrial Technology, Diploma

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

Industry in the Southwestern Pennsylvania region is dynamic and employees who have a broad educational background in industrial technology are a valuable commodity. The applied industrial technology diploma will allow students to customize their educational pathway and pursue education and training in more than one skill group while integrating a core set of foundation courses including applied math, science and communication. Students who complete this diploma will be employable in various industries including manufacturing, oil and gas, technical sales, warehouse operations and transportation. Students will engage in classroom discussions, research activities and laboratory exercises that will enhance existing and develop new knowledge, skills and abilities.

Career Opportunities

Students who complete this program may accept positions such as general maintenance and repair workers, production managers, manufacturing and technical sales representatives, production workers, machinists, dispatchers, supervisors, electrical technicians, telecommunications technicians, safety specialists and many others.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- demonstrate the skills, professional values and ethics necessary to be employed in the various industries that employ individuals with technical or trades-related skills associated with the management and energy sectors
- demonstrate effective oral and written communication skills with corporate officers, supervisors, government officials, front line workers and colleagues
- demonstrate knowledge, skills and abilities in multiple technological and trades related disciplines
- identify, install, troubleshoot, construct, form, weld, assemble, wire or develop systems or processes based upon selected educational pathways
- implement safe work practices in all occupational areas
- apply and demonstrate compliance with applicable regulations, laws, governing bodies or associations as necessary depending upon chosen disciplines

PROGRAM REQUIREMENTS (TOTAL CREDITS – 30)

Major Courses

Students must select two of the following certificate majors:

Computer Numerical Technology (CNC) I, II	16
Industrial Electricity Technology	16
Machine Technology I, II	16
Mechatronics Systems	16
Mechatronics Systems Technician I, II	16
Natural Gas & Oil Technology	16
Occupational Health & Safety	16
Petroleum & Industrial Process Operations Technology (PIPOT)	16
Pipeline Mechanic	16

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Students should consult their advisor for appropriate course sequence.

Journeyman Technology, AAS

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

This program prepares students for employment, advancement and certification in both the manual and computer numerical control (CNC) machining industries. Students will learn to read and interpret prints, use common hand tools, set up and operate metal cutting machines including mills, lathes and grinders and use precision measuring equipment. Students will also learn to create machine code programs for CNC equipment, and load, troubleshoot and execute the programs on CNC equipment including three-, four- and five-axis mills and two- and three-axis lathes. Students will fulfill the required classroom training hours for the Pennsylvania Journeyman Certificate, which may be obtained by completing the required shop experience hours from an associated machine shop.

Career Opportunities

Graduates of this program can expect to be employed as machinists, tool and die makers, metal workers, CNC programmers and CNC operators. This program can also benefit those desiring to become managers and designers.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- select appropriate materials and processes to produce parts
- interpret conventional and GD&T blueprints
- utilize mathematics in the layout and production of parts
- design parts and fixtures using CAD drafting software
- produce G-code machine programs using CAM software
- effectively plan and sequence work operations
- produce quality parts and fixtures using various materials
- inspect parts based on tolerance specifications
- analyze and solve hardware and production problems
- communicate effectively and appropriately

PROGRAM REQUIREMENTS (TOTAL CREDITS – 63)

General Education			Major			Other Required Courses		
DFT 258	AutoCad	4	CNC 111	CNC I	4	DFT 112	Intro Design, Mat. & Process.	3
ENG 161	College Writing	3	CNC 112	CNC II	5	DFT 207	Tool Design	4
ENG 162	Technical Commun.	3	CNC 213	CNC III	5	MTT 101	Blueprints	4
MTH 108*	Math for the Tech. I	4	MTT 111	Machining I	4	MTT 201	Inspection	4
MTH 109*	Math for the Tech. II	4	MTT 112	Machining II	5	MTT 202	Maintenance	4
Social Science Elective		3			**23**			**19**
		21						

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students should consult their advisor.

Fall Semester		Spring Semester		Fall Semester		Spring Semester	
CNC 111	4	CNC 112	5	CNC 213	5	ENG 162	3
MTH 108	4	DFT 112	3	DFT 207	4	MTT 112	5
MTT 101	4	DFT 258	4	ENG 161	3	MTT 202	4
MTT 111	4	MTH 109	4	MTT 201	4	Social Science	3
	16		**16**		**16**		**15**

**Students planning to transfer to a four-year institution should consult with their advisor for course substitutions.*

Journeyman Technology, Diploma

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

This program is specifically designed for those who are employed full-time and are seeking to complete the classroom training hours for the Pennsylvania Journeyman Certification by taking one course per semester. This state certification can subsequently be achieved by completing the required number of shop experience hours with companies who are setup with the state in association with the WCCC classroom program.

Students will learn to read and interpret prints, use common hand tools, set up and operate metal cutting machines including mills, lathes and grinders, and use precision measuring equipment. Students will also learn to create machine code programs for CNC equipment and load, troubleshoot and execute the programs on CNC mills and lathes.

Students will receive a total of 47 college level credits toward an AAS degree. The Journeyman Technology degree may be achieved by completing the necessary 16 additional credits.

Career Opportunities

Graduates of this program can expect to increase their employability as machinists, tool and die makers, metal workers, CNC programmers and CNC operators.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- select appropriate materials and processes to produce parts
- interpret conventional and GD&T blueprints
- utilize mathematics in the layout and production of parts
- design parts and fixtures using CAD drafting software
- produce G-code machine programs using CAM software
- effectively plan and sequence work operations
- produce quality parts and fixtures using various materials
- inspect parts based on tolerance specifications
- analyze and solve hardware and production problems
- communicate effectively and appropriately

PROGRAM REQUIREMENTS (TOTAL CREDITS – 47)

General Education

DFT 258	AutoCAD	4
ENG 161	College Writing	3
MTH 108	Math for the Tech. I	4
MTH 109	Math for the Tech. II	4
		15

Major

CNC 111	CNC I	4
CNC 112	CNC II	5
MTT 111	Machining I	4
		13

Other Required Courses

DFT 112	Intro to Design, Mat. & Process.	3
DFT 207	Tool Design	4
MTT 101	Blueprints	4
MTT 201	Inspection	4
MTT 202	Maintenance	4
		19

RECOMMENDED SEQUENCE FOR FOUR-YEAR COMPLETION

	Fall Semester		Spring Semester		Summer Semester	
First Year	MTT 101	4	DFT 112	3	MTH 108	4
Second Year	MTT 111	4	MTT 202	4	MTH 109	4
Third Year	CNC 111	4	CNC 112	5	ENG 161	3
Fourth Year	DFT 207	4	MTT 201	4	DFT 258	4

Journeyman Technology I, Certificate

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

This program prepares students for entry level employment in both the manual and computer numerical control (CNC) machining industries. Students will learn the basic use of machine shop hand tools, mills, lathes, and grinders. Students will produce and execute G-code programs on CNC mills and lathes. Students will learn to read and interpret both conventional and GD&T blueprints. Students will also gain the mathematical skills necessary to machine shop production.

This is the first of four certificate programs for students pursuing the Journeyman Technology degree.

Career Opportunities

Graduates of this program can expect to be employed as entry level machinists, tool and die makers, metal workers, CNC programmers and CNC operators. These classes may also be used toward a Pennsylvania Journeyman Certification with shops associated with WCCC.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- use basic shop hand tools to produce simple parts
- operate manual mills, lathes and grinders
- write and troubleshoot CNC G-code programs
- execute programs on CNC mills and lathes
- interpret conventional and GD&T blueprints
- use mathematics to solve shop equations

PROGRAM REQUIREMENTS (TOTAL CREDITS – 16)

	Major	
CNC 111	CNC I	4
MTH 108	Math for the Tech. I*	4
MTT 101	Blueprints	4
MTT 111	Machining I	4
		16

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students should consult their advisor.

Fall Semester	
CNC 111	4
MTH 108	4
MTT 101	4
MTT 111	4
	16

**Students planning to transfer to a four-year institution should consult with their advisor for course substitutions.*

Journeyman Technology II, Certificate

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

This program prepares students for upper entry level employment in both the manual and computer numerical (CNC) machining industries. Students will learn to produce G-code programs for CNC mills and lathes using MasterCAM. Students will also learn the properties of materials and the processes used to turn raw materials into finished products. Students will learn to design and draw parts using AutoCAD. Students will also advance their mathematical skills for machine shop production.

This is the second of four certificate programs for students pursuing the Journeyman Technology degree.

Career Opportunities

Graduates of this program can expect to be employed as upper entry-level machinists, tool and die makers, metal workers, CNC programmers and CNC operators. These classes may also be used toward a Pennsylvania Journeyman Certification with shops associated with WCCC.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- generate G-code programs using MasterCAM
- execute these programs on CNC mills and lathes
- select appropriate materials and processes to produce parts
- design parts and fixtures using AutoCAD
- solve advanced mathematical shop formulas

PROGRAM REQUIREMENTS (TOTAL CREDITS – 16)

	Major	
CNC 112	CNC II	5
DFT 112	Intro Design, Mat. & Process.	3
DFT 258	AutoCAD	4
MTH 109*	Math for the Tech. II	4
		16

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students should consult their advisor.

Spring Semester	
CNC 112	5
DFT 112	3
DFT 258	4
MTH 109	4
	16

**Students planning to transfer to a four-year institution should consult with their advisor for course substitutions.*

Journeyman Technology III, Certificate

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

This program prepares students for lower mid-level employment in both the manual and computer numerical (CNC) machining industries. Students will learn to produce multi-axis mill and lathe G-code programs using MasterCAM. They will also learn the design principles for creating jigs and fixtures used in production work. Students will learn to use manual and digital methods to inspect parts to specific tolerances. Students will also learn to communicate effectively.

This is the third of four certificate programs for students pursuing the Journeyman Technology degree.

Career Opportunities

Graduates of this program can expect to be employed as lower mid-level machinists, tool and die makers, metal workers, CNC programmers and CNC operators. These classes may also be used toward a Pennsylvania Journeyman Certification with shops associated with WCCC.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- generate multi-axis G-code using MasterCAM
- execute these programs on multi-axis lathes and mills
- design and build production jigs and fixtures
- inspect parts based on tolerance specifications
- communicate effectively and appropriately

PROGRAM REQUIREMENTS (TOTAL CREDITS – 16)

	Major	
CNC 213	CNC III	5
DFT 207	Tool Design	4
ENG 161	College Writing	3
MTT 201	Inspection	4
		16

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students should consult their advisor.

Fall Semester	
CNC 213	5
DFT 207	4
ENG 161	3
MTT 201	4
	16

Journeyman Technology IV, Certificate

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

This program prepares students for upper mid-level employment in both the manual and computer numerical (CNC) machining industries. Students will learn to effectively use advanced manual operations on mills, lathes and grinders in the production of parts. Students will also learn to perform periodic maintenance and repair shop equipment and systems. Students will also acquire technical communication skills and take a social study elective.

This is the fourth of four certificate programs for students pursuing the Journeyman Technology degree.

Career Opportunities

Graduates of this program can expect to be employed as mid-level machinists, tool and die makers, metal workers, CNC programmers and CNC operators. These classes may also be used toward a Pennsylvania Journeyman Certification with shops associated with WCCC.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- effectively produce parts using manual mills, lathes and grinders
- utilize special tooling and fixtures in precision machining
- perform periodic maintenance and repair shop equipment
- demonstrate technical communication skills
- complete the degree requirements with an elective study

PROGRAM REQUIREMENTS (TOTAL CREDITS – 15)

	Major	
ENG 162	Technical Commun.	3
MTT 112	Machining II	5
MTT 202	Maintenance	4
Social Science Elective		3
		21

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students should consult their advisor.

Spring Semester	
ENG 162	3
MTT 112	5
MTT 202	4
Social Science Elective	3
	15

Machine Technology, AAS

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

This program prepares students for employment and advancement in the machine tool field. Machinists are skilled workers who are able to read and interpret prints, use common hand tools, set up and operate metal cutting machines, and use precision measuring instruments. This program curriculum parallels the National Institute of Metalworking Skills Standards. Advanced placement in this program is possible for experienced machinists. Apprenticeship advanced standing credit is available.

Career Opportunities

Graduates of this program can accept jobs with the following titles: mold maker, tool maker, die maker, metal worker, machinist, and foreman.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- produce jobs, fixtures, gauges and other devices used in the manufacture of precision metal parts
- construct metal forms (dies) to shape metal in stamping and forging operations
- make metal molds for the die castings and for molding plastics
- assist in designing tools and dies
- appropriately utilize metals and alloys
- interpret prints and sketch orthographically in two and three dimension
- effectively plan and sequence work operations
- communicate effectively and appropriately; record and report information significant to the job
- utilize effective mathematics skills in the layout and production of quality parts
- apply concepts from physics, engineering and mathematics to the manufacturing of durable products

PROGRAM REQUIREMENTS (TOTAL CREDITS – 64)

General Education			Major			Other Required Courses		
DFT 258	AutoCAD	4	CNC 111	CNC I	4	DFT 112	Intro Des., Mat. & Process	3
ENG 161	College Writing	3	MTT 111	Machining I	4	DFT 207	Tool Design	4
ENG 162	Technical Commun.	3	MTT 112	Machining II	5	MTT 101	Blueprints	4
MTH 108*	Math for the Tech. I	4	MTT 213	Machining III	5	MTT 201	Inspection	4
MTH 109*	Math for the Tech. II	4	MTT 214	Machining IV	6	MTT 202	Maintenance	4
Social Science Elective		3			**24**			**19**
		21						

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students should consult their advisor.

Fall Semester		Spring Semester		Fall Semester		Spring Semester	
CNC 111	4	DFT 112	3	DFT 207	4	ENG 162	3
MTH 108	4	DFT 258	4	ENG 161	3	MTT 202	4
MTT 101	4	MTH 109	4	MTT 201	4	MTT 214	6
MTT 111	4	MTT 112	5	MTT 213	5	Social Science Elective	3
	16		**16**		**16**		**16**

*Students planning to transfer to a four-year institution should consult with their advisor for course substitutions.

Machine Technology I, Certificate

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

The machine technology certificate program provides students with the basic skills to work in an entry level position in the machining field. The class and lab experiences will help the student develop skill in the use of common hand tools, operation of metal cutting machines, and the use of precision measuring instruments.

This program is the first of four certificate programs for students studying manual machining. This course will introduce students to computer numerical control of machining equipment. Students will be taught manual parts programming using the industrial standard G-code format. Students will operate CNC mills and lathes and create parts using their programs.

Career Opportunities

Production machinists produce large quantities of one part, especially parts requiring the use of complex operations and great precision. Since many modern machine tools are computer numerically controlled (CNC), an introductory course in computer numeric control will be an integral part of this certificate. Many machinists must be able to use both manual and computer controlled machinery in their job.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- safely work in a machine shop using standard hand tools
- produce simple parts and tooling using basic shop equipment
- use reference materials to calculate basic feeds and speeds
- demonstrate the operation of mills, lathes and grinders

PROGRAM REQUIREMENTS (TOTAL CREDITS – 16)

	Major	
CNC 111	CNC I	4
MTH 108	Math for Technologies	4
MTT 101	Blueprints	4
MTT 111	Machining I	4
		16

RECOMMENDED SEQUENCE

Fall	
CNC 111	4
MTH 108	4
MTT 101	4
MTT 111	4
	16

Machine Technology II, Certificate

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

The machine technology certificate program provides students with the basic skills to work in an entry level position in the machining field. The class and lab experiences will help the student develop skill in the use of common hand tools, operation of metal cutting machines, and the use of precision measuring instruments.

This program is the second of four certificate programs for students studying manual machining. This course will introduce students to basic milling, lathe and grinding operations. Topics include machine parts, machine operations, toolholding, holemaking, chucks, cutting tools, facing, turning, knurling, threading, endmills, cutters, abrasives and surface grinding.

Career Opportunities

Production machinists produce large quantities of one part, precision machinists and tool and die makers produce smaller quantities of product. Machinists typically modify mostly metal parts by the use of lathes, mills and grinders. Potential job opportunities would be tool and die makers, production machinists and precision machinists.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- manufacture simple parts from prints using shop equipment
- perform basic operations on mills including facing, contouring, and hole-making
- perform basic operations on lathes including facing, turning, and threading
- perform basic operations on grinders including roughing, finishing, and sizing

PROGRAM REQUIREMENTS (TOTAL CREDITS – 16)

	Major	
DFT 112	Intro to Design Mat. & Processing	3
DFT 258	AutoCAD	4
MTH 109	Math for Technologies II	4
MTT 112	Machining II	5
		16

RECOMENDED SEQUENCE FOR FULL-TIME STUDENTS

Spring	
DFT 112	3
DFT 258	4
MTH 109	4
MTT 112	5
	16

Machine Technology III, Certificate

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

The machine technology certificate program provides students with the basic skills to work in an entry level position in the machining field. The class and lab experiences will help the student develop skill in the use of common hand tools, operation of metal cutting machines, and the use of precision measuring instruments.

This program is the third of four certificate programs for students studying manual machining. This course will provide students with further training and experience using mills, lathes, and grinders. Topics will include squaring, angular machining, rotary tables, indexing heads, grooving, slotting, radii, pocketing, taper turning, sine chucks, cylindrical grinding, and EDM.

Career Opportunities

Production machinists produce large quantities of one part, precision machinists and tool and die makers produce smaller quantities of product. Machinists typically modify mostly metal parts by the use of lathes, mills and grinders. Potential job opportunities would be tool and die makers, production machinists and precision machinists.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- manufacture complex parts from prints using standard shop equipment
- perform advanced operations on mills including angular and pocket machining
- perform advanced operations on lathes including internal and radii turning
- perform advanced operations on grinders including cylindrical grinding

PROGRAM REQUIREMENTS (TOTAL CREDITS-16)

	Major	
DFT 207	Tool Design	4
ENG 161	College Writing	3
MTT 201	Inspection	4
MTT 213	Machining III	5
		16

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Fall	
DFT 207	4
ENG 161	3
MTT 201	4
MTT 213	5
	16

Machine Technology IV, Certificate

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

The machine technology certificate program provides students with the basic skills to work in an entry level position in the machining field. The class and lab experiences will help the student develop skill in the use of common hand tools, operation of metal cutting machines, and the use of precision measuring instruments.

This program is the fourth of four certificate programs for students studying manual machining. This course will enable students to develop expertise in manual shop machining. Students will work on projects to produce finished parts from raw materials. Production steps will include planning, layout, sawing, tooling, fixturing, milling, turning, grinding and inspection.

Career Opportunities

Production machinists produce large quantities of one part, precision machinists and tool and die makers produce smaller quantities of product. Machinists typically modify mostly metal parts by the use of lathes, mills and grinders. Potential job opportunities would be tool and die makers, production machinists and precision machinists.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- produce finished parts from raw materials using shop equipment
- enumerate and follow the appropriate production steps to produce parts
- generate the tooling and fixturing needed to produce complex parts
- demonstrate the ability to analyze and correct errors in production

PROGRAM REQUIREMENTS (TOTAL CREDITS-16)

	Major	
ENG 162	Technical Communica.	3
MTT 202	Maintenance	4
MTT 214	Machining IV	6
Social Science Elective		3
		16

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Spring	
ENG 162	3
MTT 202	4
MTT 214	6
Social Science Elective	3
	16

Manufacturing Technology, AAS

MANUFACTURING PROCESS TECHNOLOGY OPTION

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

The manufacturing process technology option is designed to prepare students to gain entry level positions working with automated systems. Graduates work in positions requiring skills in product flow, quality control and problem solving.

Career Opportunities

Many positions are available as manufacturing technicians, automation technicians, electromechanical technicians, plant technicians, method analysis technicians, and testing and quality control technicians.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- test, operate, program, modify and repair automated manufacturing systems
- schedule production, test materials, integrate systems
- perform quality control functions and make appropriate adjustments
- apply concepts from chemistry, engineering, electronics, mathematics and drafting to the manufacturing of durable products
- identify, analyze and troubleshoot problems using systems approach
- apply understanding of flexible manufacturing systems to practical situations
- communicate effectively and appropriately; record and report information significant to the job

PROGRAM REQUIREMENTS (TOTAL CREDITS — 63)

General Education		
CHM 107	Intro to Con. Chem. I	4
DFT 258	AutoCAD	4
ENG 161	College Writing	3
ENG 162	Technical Commun.	3
MTH 108*	Math for Tech. I	4
Social Science Elective		3
		21

Major		
ELC 100	Prog. Logic Control I	4
DFT 112	Intro to Dsgn. Mat. Pro.	3
MPT 199	MPT Internship	
or		3
ELC 201	Prog. Logic Control III	
ELC 200	Prog. Logic Control II	4
ELC 209	Instrumentation & Process Control	4
MPT 240	Intro to Auto Manufac.	3
		21

Other Required Courses		
EGR 180	Prin. of Ind. Hydraulics	4
EGR 210	Quality Control	3
ELC 106	Circuit Analysis I	4
MTH 160	Intro to Statistics	3
PHY 107	Applied Physics	4
PHY 150	Energy & Society	3
		21

*Students planning to transfer to a four-year institution should consult their advisor for course substitutions.

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

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

Fall Semester	
DFT 112	3
ELC 106	4
ENG 161	3
MTH 108	4
	14

Spring Semester	
CHM 107	4
DFT 258	4
ENG 162	3
ELC 100	4
PHY 150	3
	18

Fall Semester	
PHY 107	4
EGR 180	4
ELC 200	4
ELC 209	4
	16

Spring Semester	
EGR 210	3
MPT 199 or ELC 201	3
MPT 240	3
MTH 160	3
Social Science Elective	3
	15

Manufacturing Technology, AAS

NANOFABRICATION MANUFACTURING OPTION

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

The nanofabrication manufacturing option is designed to prepare students to gain entry level positions working in the nanomanufacturing/semiconductor manufacturing industry. Students will study manufacturing at WCCC for three semesters and complete their degree requirements at the Nanofabrication Facility at Penn State University (PSU). Students need to apply for admission to the nanofabrication program at least one semester prior to the semester at PSU. Tuition for MPT courses completed at PSU will be WCCC tuition. Graduates work in positions requiring skills in product flow, quality control and problem solving.

Career Opportunities

Many positions are available as manufacturing technicians with industries that include semiconductor manufacturing, opto electronics, biomedical applications and microelectro mechanical devices.

Program Learning Outcomes

This curriculum is designed to prepare student to:

- properly operate equipment used in basic nanofabricator manufacturing
- schedule production, test materials, integrate systems
- perform quality control functions and make appropriate adjustments
- apply concepts from chemistry, engineering, electronics and mathematics to the manufacturing of durable products
- identify, analyze and troubleshoot problems using systems approach
- apply understanding of nanofabrication manufacturing systems to practical situations
- communicate effectively and appropriately; record and report information significant to the job

PROGRAM REQUIREMENTS (TOTAL CREDITS — 68)

General Education

CHM 107	Intro to Con. Chem. I	4
CPT 150	Microcomputer Concepts	3
ENG 161	College Writing	3
ENG 162	Technical Commun.	3
MTH 108*	Math for Tech. I	4
Social Science Elective		3
		20

Major

DFT 112	Intro to Dsgn. Mat. Proc.	3
MPT 211	Mat. Sfty. Equip. for Nan.	3
MPT 212	Basic Nanotech. Proc.	3
MPT 213	Mat. in Nanotechnology	3
MPT 214	Paterning for Nanotech.	4
MPT 215	Mat. Modif. in Nanofab.	3
MPT 216	Testing of Nanotech. Structures & Materials	3
		22

Other Required Courses

ELC 102	Electronic Devices	4
ELC 106	Circuit Analysis I	4
ELC 114	Digital Techniques	4
ELC 206	Microprocessors	4
PHY 107	Applied Physics	4
PHY 150	Energy & Society	3
MTH 160	Intro to Statistics	3
		26

*Students planning to transfer to a four-year institution should consult their advisor for course substitutions.

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**	
DFT 112	3	ELC 102	4	CHM 107	4	MPT 211	3
ELC 106	4	ELC 114	4	CPT 150	3	MPT 212	3
ENG 161	3	ENG 162	3	ELC 206	4	MPT 213	3
MTH 108	4	PHY 150	3	MTH 160	3	MPT 214	4
	14	Social Science Elective	3	PHY 107	4	MPT 215	3
			17		**18**	MPT 216	3
							19

Mechatronics Systems, AAS

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

A mechatronics systems degree graduate will function as a skilled technician who can work with modules and components in complex mechatronic systems as well as be able to assess and analyze the system as a whole. Graduates can manage, investigate, repair and troubleshoot mechatronic systems, with the aim of operational efficiency and cost and process control. A mechatronics systems graduate would usually carry out their work at production facilities, workshops or in service sites that use complex mechatronics systems.

Career Opportunities

Mechatronics is a blend of mechanical, electrical and computerized technologies that together form a complex system used by many manufacturing, packaging and other modern operations. The need for skilled individuals to support these systems is ongoing. Graduates of the mechatronics systems AAS degree, depending upon existing education and qualifications, may accept positions such as gas plant operators, petroleum pump system operators, refinery operators, chemical plant operators, industrial machinery mechanics, maintenance and repair workers, and general and maintenance workers.

Students graduating from the Mechatronics Systems AAS degree program have the option to test for the Siemens Mechatronic Systems Certifications Level I and Level II.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- describe what a mechatronics systems is and the inter-relationships of components and modules within a system
- explain the role of mechanical components and electrical drives in complex mechatronics systems, modules and subsystems
- describe the basic components in a PLC
- apply various techniques to convert data between binary, decimal and hexadecimal formats
- describe the flow of energy, mass and information in the system
- explain the role of electrical components in complex mechatronics systems and subsystems

PROGRAM REQUIREMENTS (TOTAL CREDITS – 65)

General Education

DFT 258	AutoCAD	4
ENG 161	College Writing	3
ENG 162	Technical Comm.	3
MTH 108	Math for Tech.	4
PSY 160	Psychology	3
		17

Major

EMA 110	Electrical Components	4
EMA 120	Mechanical Components & Electric Motors	4
EMA 130	Electro-pneum. & Hydr. Control Circuits	4
EMA 140	Digital Fundamentals and PLCs	4
EMA 210	Process Control Techs.	4
EMA 220	Totally Integrated Auto.	4
		24

Other Required Courses

EMA 230	Automation Systems	4
EMA 240	Motor Control	4
EMA 250	Mechanical Comps. and Systems	4
EMA 260	Manufacturing Process	4
NGT 140	Gas Plant Processing	4
NGT 160	Petroleum Instrum.	4
		24

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**	
ENG 161	3	EMA 110	4	EMA 210	4	EMA 240	4
ENG 162	3	EMA 120	4	EMA 220	4	EMA 250	4
MTH 108	4	EMA 130	4	EMA 230	4	EMA 260	4
DFT 258	4	EMA 140	4	NGT 160	4	NGT 140	4
PSY 160	3		**16**		**16**		**16**
	17						

*Students planning to transfer to a four-year institution should consult their advisor for course substitutions.

Mechatronics Systems, Certificate

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

This course is a study of basic electrical, mechanical and computerized components in an industrial mechatronics system. Topics covered will include basic functions and physical properties of electrical components; AC and DC drives; materials, lubrication requirements and surface properties; the systematic flow of energy and measurement of components; troubleshooting techniques and strategies to identify, localize and correct malfunctions; and systematic preventive maintenance and electrical component safety. Technical documentation such as data sheets, schematics, timing diagrams and system specifications will also be covered. Students will study basic digital logic and programmable logic controllers (PLCs) in a mechatronics system. Topics covered will include basic PLC functions, testing and identification of malfunctioning PLCs.

Career Opportunities

Students successfully completing this certificate program will be prepared to enter the mechatronics working environment with a nationally recognized Level 1 Siemens Mechatronics Systems Certification. They will be able to configure and troubleshoot mechatronics systems throughout the industry.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- describe and apply safety rules while working on a mechatronics systems
- explain the physical operation of electromagnetic and electrostatic components such as coils, solenoids, relays and various sensors used in a mechatronics systems
- explain what a mechatronics systems is and the interrelationships of components and modules within a complex mechatronics systems with a focus on (electro) pneumatic and hydraulic control systems.
- describe troubleshooting, maintenance and safety issues revolving around (electro) pneumatic and hydraulic circuits within a mechatronics systems

PROGRAM REQUIREMENTS (TOTAL CREDITS-16)

	Major	
EMA 110	Electrical Components	4
EMA 120	Mechanical Components & Electric Motors	4
EMA 130	Electro-pneumatic & Hydraulic Control. Cir.	4
EMA 140	Digital Fund. & Prog. Logic Controllers	4
		16

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Fall Semester	
EMA 110	4
EMA 120	4
EMA 130	4
EMA 140	4
	16

Mechatronics Systems Technician I, Certificate

Division of Workforce Development/Technologies/Culinary Arts/Physical Science/Horticulture

A mechatronics systems technician I (MSTI) will function as a skilled technician who can work with modules and components in complex mechatronics systems as well as be able to assess and analyze the system as a whole. A technician can manage, investigate, repair and troubleshoot mechatronics systems, with the aim of operational efficiency and cost and process control. A mechatronics systems technician would usually carry out their work at production facilities, workshops or in service sites that use complex mechatronics systems.

Mechatronics systems technicians can see the system as a whole, but can also dive in and work with particular system components. More important, they understand how the components work together.

Career Opportunities

Mechatronics is a blend of mechanical, electrical and computerized technologies that together form a complex system used by many manufacturing, packaging and other modern operations. The need for skills individuals to support these systems is ongoing. Graduates of the mechatronics systems technician I certificate, depending upon existing education and qualifications, may accept positions such as gas plant operators, petroleum pump system operators, refinery operators, chemical plant operators, industrial machinery mechanics, maintenance and repair workers, and general and maintenance workers.

Student must complete the mechatronics systems certificate before enrolling in the MSTI certificate.

Students graduating from the MSTI certificate program must also complete the Mechatronics Systems Technician II certificate to test for the Siemens Mechatronics Systems Certification Level II.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- analyze the technical specifications of mechatronics systems, modules and components
- derive and determine parameters for mechatronics systems and system elements
- measure, interpret and analyze electrical, PLC/microcontroller and mechanical values
- assemble and install tools and hardware systems
- perform scheduled and preventive maintenance
- install, implement and modify software tools used in mechatronics systems
- tune proportional, integral and derivate (PID) control loops including all regulator types
- connect regulating components to PID control

PROGRAM REQUIREMENTS (TOTAL CREDITS – 16)

EMA 210	Process Control Tech.	4
EMA 220	Totally Integ. Automa.	4
EMA 230	Automation Systems	4
NGT 160	Petroleum Instrumen.	4
		16

Mechatronics Systems Technician II, Certificate

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

A mechatronics systems technician II (MSTII) will function as a skilled technician who can work with modules and components in complex mechatronics systems as well as be able to assess and analyze the system as a whole. A technician can manage, investigate, repair and troubleshoot mechatronics systems, with the aim of operational efficiency and cost and process control. A mechatronics systems technician would usually carry out their work at production facilities, workshops or in service sites that use complex mechatronics systems.

Mechatronics systems technicians can see the system as a whole, but can also dive in and work with particular system components. More importantly, they understand how the components work together.

Career Opportunities

Mechatronics is a blend of mechanical, electrical and computerized technologies that together form a complex system used by many manufacturing, packaging and other modern operations. The need for skills individuals to support these systems is ongoing. Graduates of the mechatronics systems technician II certificate, depending upon existing education and qualifications, may accept positions such as gas plant operators, petroleum pump system operators, refinery operators, chemical plant operators, industrial machinery mechanics, maintenance and repair workers, and general and maintenance workers.

Student must complete the mechatronics systems certificate before enrolling in the MSTII certificate.

Students graduating from the MSTII certificate program must also complete the Mechatronics Systems Technician I certificate to test for the Siemens Mechatronics Systems Certification Level II.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- program mechatronics modules and systems, especially PLCs
- connect and configure PLC networks and data transfer using bus systems
- analyze system logs
- incorporate relevant technical literature into understanding of system operation and using this information to propose procedural and operational changes
- operate, program and troubleshoot AC/DC drives and variable frequency drives (VFDs)
- observe, follow and influence cost control and process efficiency procedures
- execute all of the above as an effective member of a team through group processes

PROGRAM REQUIREMENTS (TOTAL CREDITS – 16)

EMA 240	Motor Control	4
EMA 250	Mechanical Components & Systems	4
EMA 260	Manufacturing Process.	4
NGT 140	Gas Plant Processing	4
		16

Medical Assisting, Diploma

Division of Health Professions/Natural Sciences

The medical assisting program prepares the graduate to assist the physician with the care and treatment of patients in both administrative and clinical procedures. Some of these administrative functions include patient reception and scheduling appointments, word processing and forms preparation, ordering and maintaining supplies and equipment, and maintaining patient records. Examples of clinical functions include assisting with general physical examination and related patient procedures, collection and processing of laboratory specimens, administering medications, and instructions to patients as specified by the physician.

Career Opportunities

In this role, the medical assistant may be employed in doctor's offices, clinics and health maintenance organizations.

Special Admission and Selection Criteria

- Applicants must be graduates of an accredited secondary school program or hold a GED equivalency certificate prior to selection. Evidence of proficiency in keyboarding and word processing are program prerequisites. This requirement can be met by successfully completing OFT 110 Document Processing I.
- Applicants must demonstrate math skills at the MTH 052 level or have successfully completed that course.
- Applicants must complete and submit a WCCC Application for Admission and an Allied Health Programs Application to the Admissions Office by January 5 prior to the fall semester for which enrollment is anticipated to be guaranteed consideration. Since this program requires a supervised clinical placement, enrollment may be limited.
- Applicants must also take the computerized placement test (Accuplacer) and have successfully completed any required developmental courses prior to program acceptance. All developmental courses must be completed with a minimum grade of C prior to program acceptance. (C minus grade not accepted.) Students who have attempted developmental courses three or more times will not be considered for admission.
- Applicants who have completed credit courses must have a 2.0 GPA. Only courses necessary to meet the Medical Assisting program requirements are considered when calculating GPA. If the GPA is less than 2.0, one or more of the courses can be repeated in order to meet this requirement by the deadline date. The student must maintain a 2.0 GPA in order to progress in the program.
- Applicants who are accepted must have successfully completed CPR/Basic Life Support for Health Care Providers Annual Certification, the required first aid training program prior to program enrollment.
- Applicants who are accepted must submit satisfactory results from pre-entrance physical examinations obtained at the applicant's expense. Specific information regarding the examination will be provided to selected applicants.
- Applicants who are accepted must purchase student liability insurance coverage upon program enrollment.
- Applicants must provide evidence of Pennsylvania State Police Request for Criminal Record Check (SP4-164) and Pennsylvania Child Abuse History Clearance (CY-113) at the candidate's expense. Any child abuse record results in denial of admission to the medical assisting program. FBI Fingerprinting is required through the Department of Public Welfare, at the applicant's expense. These records must be submitted to the medical assisting program within two weeks of the date of notification of initial acceptance. Any felony conviction may result in denial of admission to the medical assisting program. Any misdemeanor is conditional pending receipt and evaluation of the background information to determine whether there is a conviction which may bar the student from admission to the medical assisting program.
- Urine drug screening is required at applicant's expense. A positive drug screen may result in denial of admission to the medical assisting program or continuation in the medical assisting program. The program reserves the right ot require random drug screening while the student is enrolled.

Upon completion of MAS 120, practicum students will be eligible to sit for the CMA (AAMA) credential.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- collect, transport, handle, and process laboratory specimens for analysis
- demonstrate professional conduct, stress management, and interpersonal and communication skills with patients, the public, peers and other health care personnel
- display an understanding of requisitioning and the legal implications of their work environment
- recognize and act upon individual needs for continuing education as a function of growth and maintenance of professional competence

Medical Assisting, Diploma

(CONTINUED)

Division of Health Professions/Natural Sciences

Functional Abilities Guidelines

Functional abilities are physical, mental and attitudes needed to practice safely, with or without accommodations. Accommodations must be first evaluated and documented by a behaviors physician and then evaluated by the college's counselor for special populations and individual healthcare programs.

- move freely to observe and assess patients
- full manual dexterity of upper extremities, including neck and shoulders, and unrestricted movement of both upper and lower extremities in order to position to complete tasks
- lift and support at least 75 pounds
- visually able to perform tasks safely
- hear sounds of spoken word and verbal communications
- demonstrate tactile ability to assess blood draw procedures and assess pulses
- ability to speak to patients and communicate essential directions
- write in legible manner and be able to document concise information
- exercise proper judgment and insight
- ability to complete task after verbal or written instructions
- ability to demonstrate new procedures in clinical application
- demonstrate respect, honestly and integrity at all times
- demonstrate privacy and confidentiality at all times
- ability to perform gross and fine motor skills in order to complete procedures
- ability to adapt to changing environmental/stress and deal with the unexpected
- perform multiple responsibilities concurrently
- establish rapport with patients and coworkers
- effectively and accurately speak on telephone and convey information through writing and verbal manner
- able to follow directions from others
- demonstrate math skills to calculate within metric system

PROGRAM REQUIREMENTS (TOTAL CREDITS — 41)

General Education

BIO 107	Human Biology	3
PSY 160	General Psychology	3
		6

Major

MAS 100	Intro to Med. Assisting	4
MAS 105	Adminis. Procedures	3
MAS 110	Clinical Procedures	4
MAS 120	Practicum	3
		14

Other Required Courses

ALH 120	General Pharmacology	3
CPT 150	Microcomputer Concepts	3
OFT 130	A & P for Medical Offic.	3
OFT 150	Medical Billing Mgmt.	3
OFT 235	Customer Service	3
OFT 250	Diagnostic Med. Coding	3
OFT 260	Procedural Med. Cod.	3
		21

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Fall Semester	
BIO 107	3
CPT 150	3
MAS 100	4
OFT 150	3
PSY 160	3
	16

Spring Semester	
ALH 120	3
MAS 105	3
MAS 110	4
OFT 130	3
OFT 260	3
	16

Summer Semester	
MAS 120	3
OFT 235	3
OFT 250	3
	9

Multimedia and Photography, AAS

MULTIMEDIA TECHNOLOGY OPTION

Division of Computer Technology/Business

The multimedia technology option is designed to prepare students for employment in commercial, industrial and educational settings as audiovisual technicians. Program graduates are prepared to provide for the operation of various multimedia equipment. Students will acquire production skills in the areas of instructional graphics, television, audio recording, digital photography and interactive multimedia. Under supervision, students complete an internship experience in which they apply theoretical knowledge to workplace situations.

Career Opportunities

Career opportunities for multimedia technology graduates exist within in-house corporate audiovisual departments as well as in advertising agencies and sound or video production houses. A large number of individuals working in the media field are self-employed free-lancers working on a variety of creative and technical multimedia projects.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- systematically design, produce, and analyze nonbroadcast media and messages such as computer presentation, video, multi-image, graphics/print, photography and interactive computer-based media
- apply knowledge of the theory, application, utilization and management of nonbroadcast communication technologies
- communicate effectively and appropriately using vocabulary indicative to the technology
- design and implement computer-based imagery by producing effective presentations
- apply communication principles to training and communications within organizations
- effectively function with associates as a member of a visual communications production team
- operate various types of standard as well as specialized media related equipment
- practice appropriate safety procedures inherent to the industry
- evaluate instructional media and organizational communication

PROGRAM REQUIREMENTS (TOTAL CREDITS — 64)

General Education

ENG 161	College Writing	3
ENG 162 or ENG 163 or ENG 164	Technical Commun. / Business Commun. / Advanced Composition	3
MED 110	Digital Presentation	3
SPC 155 or SPC 156	Effective Speech / Interpersonal Comm.	3
Mathematics Elective		3
Social Science Elective		3
		18

Major

MED 103	Podcasting & Soc. Media	1
MED 105	Multimedia for Web	3
MED 150	Editing & Video Tech/ Premiere Pro	3
MED 155	Intro to Multimedia	3
MED 158	History of Cinema	3
MED 159	DSLR Video Prod.	3
MED 170	Digital Photography/ Photoshop	3
MED 240	Audio Tech./Audition	3
MED 255	Public Relations	3
MED 256	Advertising	3
MED 257	Television Production	3
MED 260	Interactive Multimedia	3
MED 270	Adv. Editing & Video Tech/Premiere Pro	3
MED 271	Adv. Digital Photography/ Photoshop	3
MED 290	Video Special Effects✦	3
MED 299	Internship	3
		46

✦*capstone course*

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**	
ENG 161	3	MED 110	3	ENG 162, 163 or 164	3	MED 270	3
MED 103	1	MED 150	3	MED 260	3	MED 290	3
MED 105	3	MED 158	3	MED 256	3	MED 271	3
MED 155	3	MED 159	3	MED 257	3	MED 299	3
MED 170	3	MED 255	3	Mathematics Elective	3	Social Science Elective	3
MED 240	3	SPC 155 or 156	3		**15**		**15**
	16		**18**				

Multimedia and Photography, AAS

PHOTOGRAPHY OPTION

Division of Computer Technology/Business

The photography option prepares students to function in entry level positions within commercial, industrial and educational settings. Students will acquire production skills in state-of-the-art computer-based photographic imaging. Under supervision, students complete an internship experience in which they apply theoretical knowledge to workplace situations.

Career Opportunities

Career opportunities for photography graduates exist with advertising agencies, studios, service bureaus and corporate in-house photographic/advertising/public relations departments. A large portion of individuals working in this field are self-employed persons working on various creative and technical projects.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- produce a portfolio which demonstrates the ability to implement theory with practical situations
- employ processes and methods to produce photo imagery significant to the job
- communicate effectively and appropriately using vocabulary indicative of the technology
- design and implement computer-based imagery by producing effective digital presentations
- demonstrate the ability to meet deadlines of required assigned tasks
- effectively function with associates as a member of a visual communications production team
- operate various types of standard as well as specialized photographically related equipment
- practice appropriate safety procedures inherent to the industry
- effectively network with art directors, designers, printers and others within the field

PROGRAM REQUIREMENTS (TOTAL CREDITS — 61)

General Education

ENG 161	College Writing	3
ENG 162 or ENG 163 or ENG 164	Technical Commun. / Business Commun. / Advanced Composition	3
MED 110	Digital Presentation	3
SPC 155 or SPC 156	Effective Speech / Interpersonal Comm.	3
Mathematics Elective		3
Social Science Elective		3
		18

Major

MED 103	Podcasting & Soc. Media	1
MED 105	Multimedia for Web	3
MED 150	Editing & Video Tech./ Premiere Pro	3
MED 159	DSLR Video Production	3
MED 160	Basic Photography	3
MED 161	Portrait Photography	3
MED 170	Digital Photography/ Photoshop	3
MED 199	Internship	3
MED 200	Portfolio Development	3
MED 255	Public Relations	3
MED 256	Advertising	3
MED 260	Interactive Media	3
MED 263	Photojournalism	3
MED 266	Studio/Location Photog.	3
MED 271	Adv. Digital Photography/ Photoshop	3
		43

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	
ENG 161	3	ENG 162, 163 or 164	3	MED 150	3	MED 199	3
MED 103	1	MED 159	3	MED 256	3	MED 200	3
MED 105	3	MED 161	3	MED 260	3	MED 263	3
MED 110	3	MED 255	3	MED 271	3	MED 266	3
MED 160	3	SPC 155 or 156	3	Mathematics Elective	3	Social Science Elective	3
MED 170	3		**15**		**15**		**15**
	16						

Multimedia and Photography, Certificate

ADOBE VIDEO STUDIO

Division of Computer Technology/Business

The Adobe Video Studio certificate option provides students with an intensive experience in Windows-based video, audio and DVD digital software. Courses included in this certificate may be applied toward the Multimedia and Photography AAS Multimedia Technology Option.

Career Opportunities

Graduates of the Adobe Video Studio certificate program may find employment as computer support specialists in the field of multimedia as technicians and/or customer sales or service representatives.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- organize and incorporate basic images in the creation of complex graphics
- produce motion animations and special video effects
- effectively utilize software to encode, author and burn DVDs
- identify, analyze, manipulate and fix common audio problems

PROGRAM REQUIREMENTS (TOTAL CREDITS — 16)

MED 103	Podcasting & Soc. Media	1
MED 150	Editing & Video Tech/ Premiere Pro	3
MED 240	Audio/Techniques/ Audition	3
MED 260	Interactive Media	3
MED 270	Adv. Editing & Video Tech/Premiere Pro	3
MED 290	Video Special Effects	3
		16

Multimedia and Photography, Certificate

PHOTOGRAPHY

Division of Computer Technology/Business

The photography certificate option provides students with an intensive experience in traditional and digital photographic techniques and processes. Courses included in this certificate may be applied toward the Multimedia and Photography AAS Photography Option

Career Opportunities

Graduates of the photography certificate program may find employment as photographers, photographic technicians, customer sales or service representatives.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- incorporate basic lighting manipulation skills in the creation of complex images
- produce a portfolio demonstrating the ability to handle various photographic situations
- effectively utilize the computer as a photographic tool

PROGRAM REQUIREMENTS (TOTAL CREDITS — 16)

MED 103	Podcasting/Social Med.	1
MED 160	Basic Photography	3
MED 161	Portrait Photography	3
MED 170	Digital Photography/ Photoshop	3
MED 266	Studio/Location Photo.	3
MED 271	Adv. Digital Photography/ Photoshop	3
		16

Multimedia and Photography, Certificate

VIDEO/TELEVISION

Division of Computer Technology/Business

The video/television certificate option provides students with an intensive experience in video and television production techniques and processes. Courses included in this certificate may be applied toward the Multimedia and Photography AAS Multimedia Technology Option.

Career Opportunities

Graduates of the video/television certificate program may find employment as entry level video camera and editing technicians, customer sales or service representatives.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- utilize applicable production procedures to produce broadcast media
- effectively utilize software to produce digital audio effects
- operate linear/non-linear video related equipment
- design and implement commercial/industrial audio-video productions
- produce complex motion animations and special video effects

PROGRAM REQUIREMENTS (TOTAL CREDITS — 16)

MED 103	Podcasting & Soc. Media	1
MED 150	Editing & Video Tech/ Premiere Pro	3
MED 159	DSLR Video Production	3
MED 240	Audio Techniques/ Audition	3
MED 257	Television Production	3
MED 290	Video Special Effects	3
		16

Natural Gas and Oil Technology, Certificate

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

The natural gas and oil technology certificate is designed to prepare students for entry level positions in the natural gas and oil industry. Students who complete this program will develop a comprehensive understanding of the activities in the natural gas and oil industry, including: exploration, drilling, production, midstream, transportation, storage, distribution and the safety aspects related to each. Students will engage in classroom and laboratory activities that will develop the basic technical skills necessary to obtain a position within the industry sectors listed above. In addition, students will be required to participate in field activities that supplement the learning process. Students must pass the PEC Safeland Basic safety exam with a minimum score of 80%.

Career Opportunities

Graduates of the natural gas technology program may accept positions such as: electric/electronics installer, field maintenance, heavy equipment maintenance, water management technician, measurement and regulation technician, field safety representatives, seismic crew member, hydraulic fracturing crew member, casing crew member, drilling crew member, service team member, boring team member, logging crew member, compressor operator, processing operators and well testing technicians.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- identify and explain the importance of the key sectors that comprise the oil and gas industry: exploration, drilling, production, midstream, transportation, storage, and distribution
- develop the key technical skills necessary to secure a job in the natural gas and oil industry
- install, maintain and troubleshoot basic mechanical, hydraulic, pneumatic and electrical systems
- implement safe work practices
- utilize technology to maintain and troubleshoot various industry systems
- apply key personal and interpersonal skills necessary work in a team environment
- implement and adhere to policies and procedures that govern the natural gas industry and recognize the agencies that regulate the industry

PROGRAM REQUIREMENTS (TOTAL CREDITS – 18)

ELC 191	Basic Prin. of Ind. Elect.	4
NGT 100	Comm. Teamwork & Conflict Res. in Ind.	1
NGT 101	Intro to Natural Gas & Oil Industry	4
NGT 110	Environmental Protection, Methods & Devices for Natural Gas Industry	2
WEL 209	Indust. Main, & Troub.	3
WEL 210	Mainte. & Troublesh. II	4
		18

Nursing, AAS

Division of Health Professions/Natural Sciences

Admission to the nursing program is selective and enrollment is limited by the clinical placement necessary to complete the nursing course requirements. **All applicants must meet specific criteria before being admitted to any of the program options.**

The program is accredited by the Accreditation Commission for Education in Nursing (ACEN), 3343 Peachtree Road NE, Suite 850, Atlanta, GA 30326; phone 404-975-5000. The ACEN is responsible for the specialized accreditation of nursing education programs: Associate Degree. The ACEN is nationally recognized as a specialized accrediting agency for both postsecondary and higher degree programs in nursing education.

Admission Criteria for the Associate Degree Nursing Program Guidelines

Purpose: Admission to the nursing program is a selective process because enrollment is limited by the clinical placement necessary to complete the nursing course requirements. Therefore, all applicants applying for admission must meet the criteria.

Guidelines: Applicants to the associate degree nursing program must submit the appropriate forms to the Admissions Office.

Application Process

- Complete and submit a WCCC Application for Admission
- Submit official transcript from all secondary schools attended, graduate equivalency degree (GED) programs, and any other formal educational programs beyond high school
- Submit all required documents to the Admissions Office by the following deadlines:

ADN Program	Day Programs: Day/Weekend Greene	Evening/Weekend Program ADN Students
Application Deadline	January 5 prior to fall start	May 15 prior to spring start
Testing Dates	February	July
Acceptance Notification	Mid-March	Mid-August
Start Nursing Classes	Fall Semester	Spring Semester

- Applicants must take a preadmission examination administered by WCCC; eligible candidates will be notified of the testing dates once all required information has been submitted.
- Tattoos: Visible tattoos are not permitted at the clinical affiliation sites and must be covered during clinical and lab experience.

Admission Criteria

- Graduate of accredited secondary school program or hold a graduate equivalency degree (GED) certificate prior to selection
- High school validating the successful completion of academic work equivalent to a standard high school program with a minimum of 16 units:
  - English (4 units)
  - Social studies (3 units)
  - Mathematics (2 units, one in algebra required)
  - Science (2 units in chemistry and biology with related laboratory)
  - If high school algebra, chemistry and biology were not successfully completed with a "C" grade or better, applicants may meet these preadmission requirements by completing MTH 052, CHM 107, and BIO 107 with a "C" grade or better
- Applicants must also take the computerized placement test (Accuplacer)
- Students who test into developmental courses must complete them with a "C" or better
- Applicants who have completed credit courses must attain a 2.5 GPA
  - Only credit courses necessary to meet the requirements for the nursing program are considered when calculating GPA
  - If GPA is less than 2.5, one or more of these courses may be repeated to meet the requirements before testing
  - Students must earn a "C" or better in all nursing and corequisite courses to progress in the program and to graduate
  - Transfer courses are not calculated into the GPA

Final Admission Criteria

Accepted applicants are to submit proof of the following requirements, at the applicants expense:

- Physical examination, laboratory studies, proof of immunizations, and urine drug screen. A positive urine drug screen will result in denial of admission to the program
- CPR Basic Life Support for Health Care Providers; certification is valid for two years
- Evidence of a nursing liability insurance policy by date specified

- Act 33-34 Clearance, PA Criminal Record and Child Abuse Clearance; and FBI fingerprinting through the Department of Public Welfare, at the applicant's expense
- All records must be received by the nursing program prior to the stated deadlines or prgram acceptance will be withdrawn
- Students must earn a "C" or better in all nursing and corequisite courses to graduate

Criminal Conviction and/or Crimes of Moral Turpitude

Pennsylvania State Board of Nursing reserves the right to deny a license to any candidate who has been convicted of any felonious act. Conviction includes a judgment, and admission of guilt or a plea of nolo contendere, probation without verdict or incomplete Accelerated Rehabilitative Disposition (ARD). Further, the Board shall not issue a license to any applicant who has been:

1. Convicted of a felonious act prohibited by the act of April 14, 1972 (P.L. 233, No. 64) known as The Controlled Substance Drug, Device and Cosmetic Act; or
2. Convicted of a felony relating to a controlled substance in a court of law of the United States or any other state, territory, or country unless;
   a. at least 10 years have elapsed from the date of the conviction;
   b. the applicant satisfactorily demonstrates to the Board, significant progress in personal rehabilitation since the conviction such that the licensure should not create a substantial risk of further violations; and
   c. the applicant otherwise satisfies the qualifications contained in this act.

Additionally, charges and/or convictions with offense codes on the Prohibited Offenses Contained in Act 169 of 1996 as Amended by Act 13 of 1997 Criminal Offenses will result in withdrawal of seat in the nursing program. Any record of child abuse results in denial of admission to the nursing program.

NOTE: Admission decisions consider three factors which contribute to the overall admission score: GPA, Nursing Entrance Exam Score, and pattern of success in courses already taken. Admission to the nursing program is highly competitive and there are a limited number of seats.

Graduate/Program Learning Outcomes – (Associate Degree Nursing)

This curriculum is designed to prepare the graduate to:

Caring

1. Deliver quality and safe professional nursing care based on knowledge and evidence from nursing, physical, biological and behavioral sciences.
2. Promote health through patient and family centered teaching and health education.
3. Use caring constructs to provide patient and family centered care that is based on respect for diversity.

Competency

4. Implement technical aspects of care safely, skillfully, effectively and efficiently.
5. Manage the care for a group of patients in a variety of settings using evidence based management concepts and skills.

Communication

6. Use therapeutic communication skills with individuals when providing professional nursing care.
7. Use effecive communication skills to promote teamwork, multidisciplinary collaboration and shared decision making.

Critical Thinking

8. Use the nursing process to assess, diagnose, plan, implement and evaluate care to meet mutually identified needs of individuals and their families.
9 Apply critical thinking to decision-making and safe clinical judgments.
10. Use information technologies effectively by accessing and managing information to enhance provision, adaptation and management of care.

Commitment

11. Implement collaborative, dependent and independent nursing actions within the legal and ethical framework of professional nursing practice.
12. Demonstrate commitment to active learning to enhance self-development, professional identity and growth as a nurse.

Nursing, AAS

(CONTINUED)

Division of Health Professions/Natural Sciences

PROGRAM REQUIREMENTS (ADN PROGRAM CREDITS – 72)

General Education

BIO 171	Anatomy & Physiology I	4
CPT 150	Microcomp. Concepts	3
ENG 161	College Writing	3
ENG 164	Advanced Composition	3
PSY 160	General Psychology	3
Mathematics Elective		3
		19

Major

NSG 112	Intro/Prof. Nsg. & Hlth. Care Acr. Lifespan	3
NSG 114	Hlth. & Phys. Assmnt.	3
NSG 116	Found. of Nsg. Care	7
NSG 124	Med-Surg. Nsg. Care/Ad.	9
NSG 225	Nsg. Care/Chldbrng. Fam./Infant & Child	4
NSG 240	Psych./Mntl. Hlt. Nsg. Care	3
NSG 255	Adv. M/S Aging Adult Chronic	3
NSG 260	Adv. Care/Chronically Ill	3
NSG 270	Adv. Care/Acutely Ill	3
NSG 280	Manager of Nsg. Care	4
		42

Other Required Courses

BIO 172	Anatomy & Physiology II	4
BIO 265	Microbiology	4
ALH 120	Pharmacology	3
		11

RECOMMENDED SEQUENCE OF STUDIES FOR Full-Time DAY

All course work must be completed prior to or during corequisite semester with a "C" or better.

LEVEL I

Prerequisite	
BIO 171	4
CPT 150	3
	7
Fall	
BIO 172	4
NSG 112	3
NSG 114	3
NSG 116	7
	17

Spring Semester	
ALH 120	3
NSG 124	9
PSY 160	3
	15

LEVEL II

Fall Semester	
BIO 265	4
ENG 161	3
NSG 225	4
NSG 240	3
NSG 255	3
	17

Spring Semester	
ENG 164	3
NSG 260	3
NSG 270	3
NSG 280	4
Mathematics Elective	3
	16

PROGRAMS OF STUDIES FOR Part-Time EVENING/WEEKEND YOUNGWOOD

*Students would need to complete BIO 171, BIO 172, PSY 160, ENG 161 prior to testing for the program. BIO 265 completed during spring or summer of first year.

All other course work completed prior to or during corequisite semester with a "C" or better.

Program prerequisites prior to testing into Evening/Weekend Program with a GPA of 2.5 and "C" or better for each course

*BIO 171	4
*BIO 172	4
*CPT 150	3
*ENG 161	3
*PSY 160	3
	17

LEVEL I

Spring Semester	
NSG 112	3
NSG 114	3
NSG 116	7
	13
Summer Semester	
*BIO 265	4
	4

Fall Semester	
ALH 120	3
NSG 124	9
	12

LEVEL II

Spring Semester	
ENG 164	3
NSG 225	4
NSG 240	3
NSG 255	3
	13

Fall Semester	
NSG 260	3
NSG 270	3
NSG 280	4
Mathematics Elective	3
	13

Nursing, AAS

(CONTINUED)

Division of Health Professions/Natural Sciences

PROGRAM OF STUDIES FOR PART-TIME PROGRAM DAY/WEEKEND GREENE COUNTY EDUCATION CENTER

*Students would need to complete BIO 171, BIO 172, PSY 160, ENG 161 and CPT 150 prior to testing for the program. BIO 265 completed during the spring or summer of first year.

All course work must be completed prior to or during corequisite semester with a "C" or better.

Program prerequisites prior to testing into Evening/Weekend Program with a GPA of 2.5 and "C" or better for each course

*BIO 171	4
*BIO 172	4
*PSY 160	3
*ENG 161	3
*CPT 150	3
	17

LEVEL I

Fall Semester	
NSG 112	3
NSG 114	3
NSG 116	7
	13

Spring Semester	
NSG 124	9
ALH 120	3
	12

Summer Semester	
*BIO 265	4
	4

LEVEL II

Fall Semester	
ENG 164	3
NSG 225	4
NSG 240	3
NSG 255	3
	13

Spring Semester	
NSG 260	3
NSG 270	3
NSG 280	4
Mathematics Elective	3
	13

Associate Degree in Nursing - Total 72 credits

Nursing, Advanced Standing to AAS for LPNs

Division of Health Professions/Natural Sciences

Admission to the nursing program is selective and enrollment is limited by the clinical placement necessary to complete the nursing course requirements. **All applicants must meet specific criteria before being admitted to any of the program options.**

The program is accredited by the Accreditation Commission for Education in Nursing (ACEN), 3343 Peachtree Road NE, Suite 850, Atlanta, GA 30326; phone 404-975-5000. The ACEN is responsible for the specialized accreditation of nursing education programs: Associate Degree. The ACEN is nationally recognized as a specialized accrediting agency for both postsecondary and higher degree programs in nursing education.

Advanced Placement for Licensed Practical Nurses (LPNs) into the Associate Degree Nursing (ADN) Program Guidelines

Purpose: Admission to the nursing program is a selective process because enrollment is limited by the clinical placement necessary to complete the nursing course requirements. Therefore, all applicants applying for advanced placement admission must meet the criteria.

Guidelines: Graduate and licensed practical nurses may apply for advanced placement admission into the second year of the associate degree nursing program if they meet the following criteria before being fully accepted:

Application Criteria:

- Must hold a current Pennsylvania Practical Nursing license
- Must have at least one year of full-time acute care clinical practice experience: defined as bedside nursing with primary patient care responsibilities at either an Acute Care Hospital, Long-Term Acute Care (LTAC) facility, or Sub-Acute Unit in a skilled nursing facility.
- LPN applicants who do not have acute care clinical practice experience within the past five years prior to application must provide documentation of successful completion of an LPN refresher course
- LPN applicants must submit a WCCC Application for Admission Form and Allied Health Programs Application to the Admissions Office by:

Level 2 (LPNs)	Day Programs: Evening/Weekend Greene	Evening/Weekend Program
Application Deadline	January 5 prior to fall start	May 15 prior to spring start
LPN Transition Course: NSG 200/NSG 114	Summer semester prior to fall start	Fall semester prior to spring start
Start Nursing Classes	Fall Semester	Spring Semester

- Applicants must take the *Nursing ACE I PN-RN Foundations of Nursing* and the *ACE I PN-RN Childbearing/Care of Child* examinations administered by WCCC; eligible applicants will be notified of the testing date and fee

Criteria for Advanced Placement for LPNs:

- Graduate of accredited secondary school program or hold a graduate equivalency degree (GED) certificate
- High school validating the successful completion of academic work equivalent to a standard high school program with a minimum of 16 units:
  - English (4 units)
  - Social studies (3 units)
  - Mathematics (2 units, one in algebra required)
  - Science (2 units in chemistry and biology with related laboratory)
    - A "C" grade or better must be attained in high school algebra, chemistry, and biology; if a "C" grade or better is not attained, applicants may meet these preadmission requirements by completing MTH 052, CHM 107, and BIO 107 and must attain a "C" grade or better
- Applicants who have completed credit courses must attain a 2.5 GPA
  - Only credit courses necessary to meet the requirements for the nursing program are considered when calculating GPA
  - If GPA is less than 2.5, one or more of these courses may be repeated to meet the requirements before testing
  - Students must earn a "C" grade or better in all nursing and corequisite courses to progress in the program and to graduate
  - Transfer courses are not calculated into GPA
- LPNs must also take the Accuplacer, which is a computerized placement test, and complete any required developmental courses
  - Students who test into developmental courses must complete all courses with a C grade or above

Nursing, Advanced Standing to AAS for LPNs

(CONTINUED)

Division of Health Professions/Natural Sciences

Pre-testing Criteria and Required Documents

- Proof of completion of required courses or enrollment in equivalent courses via high school and or college transcripts. It is the students responsibility to provide transcripts to admissions office.
- WCCC transcript must include the following courses and GPA must be at least 2.5 and a C or better in the following courses:
  - BIO 171 - Anatomy and Physiology I
  - BIO 172 - Anatomy and Physiology II
  - PSY 160 - General Psychology
  - ENG 161 - College Writing
  - ALH 120 - Pharmacology
  - CPT 150 - Microcomputer Concepts
- Only science credits completed within the past 10 years will be accepted for transfer
- Additional required documents:
  - LPN program transcript
  - Copy of current LPN license
  - Evidence of successful completion of state board approved intravenous (IV) therapy course within the past two years of application, or validation by current employer for LPNs currently practicing IV skills

After Notice of Acceptance the Following Conditions Must be Satisfied:

Final Admission Criteria

- Accepted applicants are required to attend a mandatory group interview and information session as the final step in the admission process
- At the mandatory session, information regarding the following additional program requirements will be provided:
- Physical examination, laboratory studies, proof of immunizations, and urine drug screen. A positive urine drug screen will result in denial of admission to the nursing program
- CPR Basic Life Support for Health Care Providers current certification
- Evidence of a nursing liability insurance policy
- All of these required documents must be submitted to the nursing program prior to stated deadlines or program acceptance will be withdrawn
- Students must earn a "C" or better in all nursing and corequisite courses to progress and graduate
- Students must complete the NSG 200-Transition to the ADN Program course and NSG 114-Health and Physical Assessment with a "C" or better to progress into the nursing courses.

Criminal Record Check, Child Abuse Clearance, Federal Bureau of Investigation (FBI) Check Requirements:

- Applicants must submit information regarding criminal conviction and/or crimes of moral turpitude
- Act 33-34 Clearance: PA Criminal Record and Child Abuse Clearance; and FBI fingerprinting through the Department of Public Welfare, at the applicant's expense
- All records must be received by the nursing program prior to the stated deadline
- Admission is conditional pending receipt and evaluation of criminal background check to determine if there is any conviction that may bar the applicant from admission to the nursing program
  - Any record of child abuse results in denial of admission to the nursing program
  - According to federal sentencing guideline, any punishment over one year indicate a felony
  - Any felony conviction within the past 10 years results in denial of admission to the nursing program; any misdemeanor will be evaluated based on the nature of the offense, length of time since the offense, and explanatory letter/materials submitted by the applicant

The PA State Board of Nursing reserves the right to deny a license to any candidate who has been convicted of any felonious act. Conviction includes a judgment, an admission of guilt or a plea of nolo contendere, probation without verdict, or incomplete Accelerated Rehabilitative Disposition (ARD). Further, the board shall not issue a license to any applicant who had been:

1. Convicted of a felonious act prohibited by the act of April 14, 1972 (P. L. 233, No. 64) known as The Controlled Substance Drug, Device and Cosmetic Act; or
2. Convicted of a felony relating to a controlled substance in a court of law of the United States or any other state, territory, or country unless;
   a. at least 10 years have elapsed from the date of the conviction;
   b. the applicant satisfactorily demonstrates to the board, significant progress in personal rehabilitation since the conviction such that licensure should not create a substantial risk of further violations; and
   c. the applicant otherwise satisfies the qualifications contained in this act.

Additionally, charges and/or convictions with offense codes on the Prohibited Offenses contained in Act 169 as Amended Act 13 of 1997 Criminal Offenses will result in withdrawal of seat in the nursing program. Any record of child abuse results in denial of admission to the nursing program.

NOTE: Admission decisions consider three factors which contribute to the overall admission score: GPA, Nursing Entrance Exam Score and pattern of success in the courses already taken. Admission to the Nursing program is highly competitive and there are a limited number of seats.

Nursing, Advanced Standing to AAS for LPNs

(CONTINUED)

Division of Health Professions/Natural Sciences

Graduate/Program Learning Outcomes – (Associate Degree Nursing)

This curriculum is designed to prepare the graduate to:

Caring

1. Deliver quality and safe professional nursing care based on knowledge and evidence from nursing, physical, biological and behavioral sciences.
2. Promote health and prevent disease through patient and family center teaching and health education.
3. Use caring constructs to provide patient and family centered care that is based on respect for diversity.

Competency

4. Implement technical aspects of care safely, skillfully, effectively and efficiently.
5. Manage the care for a group of patients in a variety of settings using evidence based management concepts and skills.

Communication

6. Use therapeutic communication skills with individuals when providing professional nursing care
7. Utilize effective communication skills to promote teamwork, multidisciplinary collaboration and shared decision making.

Critical Thinking

8. Use the nursing process to assess, diagnose, plan, implement and evaluate care to meet mutually identified needs of individuals and their families.
9. Apply critical thinking to decision making and safe clinical judgments
10. Use information technologies effectively be accessing and managing information to enhance provision, adaptation and management of care.

Commitment

11. Implement collaborative, dependent and independent nursing actions within the legal and ethical framework of professional nursing practice
12. Demonstrate commitment to active learning to enhance self-development, professional identity and growth as a nurse.

PROGRAM REQUIREMENTS FOR ADVANCED STANDING LPNs

General Education

ALH 120	Pharmacology	3
BIO 171	Anatomy & Physiology I	4
BIO 172	Anatomy & Physiology II	4
BIO 265	Microbiology	4
CPT 150	Microcomputer Concepts	3
ENG 161	College Writing	3
ENG 164	Advanced Composition	3
PSY 160	General Psychology	3
Mathematics Elective		3
		30

Credit for LPN Coursework

NSG 112	Intro Prof. Nsg. & Hlth. Care	CR
NSG 116	Found of NSG Care	CR
NSG 124	Med-Surg. Nsg. Care of Adults	CR

Major – Level II Courses

NSG 114	Hlth./Phys. Assess.	3
NSG 225	Nsg. Care/Chldb. Fam./ Infant.Child.	4
NSG 240	Psych./Mental Hlth. Nsg. Care	3
NSG 255	Adv. M/S Aging Adult Chronic	3
NSG 260	Adv. Care/Chronically Ill	3
NSG 270	Adv. Care/Acutely Ill	3
NSG 280	Manager of Nsg. Care	4
		23

*NSG 200-Transition to the ADN Program and NSG 114- Health and Physical Assessment will be scheduled after final acceptance.

RECOMMENDED SEQUENCE FOR ADVANCED STANDING LPNs

All course work must be completed prior to or during corequisite semester with a "C" or better.

First Semester	
BIO 265	4
NSG 225	4
NSG 240	3
NSG 255	3
	14

Second Semester	
ENG 164	3
NSG 260	3
NSG 270	3
NSG 280	4
Mathematics Elective	3
	16

Occupational Health and Safety, Certificate

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

This curriculum is designed to prepare students for positions as health and safety professionals in various industries including manufacturing, oil and gas, service professions, logistics and facilities management. Students who complete this program will develop a comprehensive understanding of the principles of safety management, the organizations that govern industry safety standards, compliance and recordkeeping requirements, hazard identification and mitigation and safety auditing.

Career Opportunities

Graduates of the occupational health and safety certificate program, depending upon existing education and qualifications, may be accept positions such as: safety manager, safety technician, quality/risk manager, EH&S coordinator, corporate safety coordinator, safety specialist, safety inspector, loss control consultant, safety analyst and/or health and safety consultant.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- identify health and safety hazards
- develop and implement programs and hazard mitigation plans that isolate, remove or repair a potential hazard
- apply an understanding of rules and regulations that govern health and safety in various industry clusters including General Industry, Construction, Transportation, Nuclear, Mining and Agriculture
- identify and interpret rules, regulations and standards under OSHA, ANSI, DOT, MSHA, NRC, NFPA and others
- apply effective oral and written communication skills to develop and deliver safety training programs, conduct an accident investigation, and/or a health and safety audit
- conduct an accident investigation or be a member of an accident investigation team
- conduct a health and safety audit or be a member of a health and safety audit team
- identify, record and report accidents, injuries, hazards and/or violations as required by OSHA and/or other regulatory agencies

PROGRAM REQUIREMENTS (TOTAL CREDITS-17)

	Major	
FST 201	Hazardous Materials	3
HSS 103	Health & Safety in the Workplace	3
HSS 105	Health & Safety for General Industry	4
HSS 120	Accident Investigation Techniq. for Industry	2
HSS 140	Safety Mgmt. & Auditing	3
HSS 150	Adult Learning Methodologies	2
		17

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

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

Fall Semester	
FST 201	3
HSS 103	3
HSS 105	4
HSS 120	2
HSS 140	3
HSS 150	2
	17

Office Technology, AAS

MEDICAL ADMINISTRATION OPTION

Division of Computer Technology/Business

This option combines specific course work in human biology, medical terminology, medical billing and inpatient/outpatient coding. During the last semester, students will have the opportunity to apply their skills by completing an internship. This curriculum is designed to provide the student with the knowledge to enter the medical billing/coding arena.

Career Opportunities

Graduates of the Medical Administration AAS degree program may find employment as medical office personnel, medical registrars, billing specialists, insurance verifiers, schedulers, entry level coders, claims processors and unit secretaries.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- demonstrate skill in office coordination and administration
- analyze and record billing transactions and insurance claims using a computerized medical program
- apply correct coding techniques in billing and preparing insurance claims
- demonstrate competency in accounting skills and in processing financial records
- develop skills in word processing, written communication, medical terminology, medical billing, coding and reimbursement
- transcribe written, printed and voice-recorded dictation as well as edit copy with a high degree of accuracy and speed

PROGRAM REQUIREMENTS (TOTAL CREDITS — 60)

General Education

BUS 120	Math of Business	3
CPT 150	Microcomputer Concepts	3
ENG 161	College Writing	3
ENG 163	Business Commun.	3
SOC 155	Prin. of Sociology	3
SPC 156	Interpersonal Comm.	3
		18

Major

OFT 130	A & P for Medical Off.	3
OFT 145	Medical Office Proced.	3
OFT 150	Med. Billing Mgmt.	3
OFT 155	Electronic Health Rec.	3
OFT 165	Law & Ethics/Hlthcare	3
OFT 199	Internship I	3
OFT 250	Diag. Medical Coding	3
OFT 260	Procedural Med. Coding	3
OFT 270	Hosp. Billing/Coding	3
OFT 285	Adv. Medical Coding✦	3
		30

✦*capstone course*

Other Required Courses

BIO 107	Human Biology	3
BUS 140	Intro to Business	3
CPT 248	PC Hardware	3
CPT 259	User Support Oper.	3
		12

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**	
BIO 107	3	CPT 259	3	BUS 120	3	ENG 163	3
BUS 140	3	OFT 130	3	OFT 150	3	OFT 199	3
CPT 150	3	OFT 145	3	OFT 165	3	OFT 270	3
CPT 248	3	OFT 155	3	OFT 260	3	OFT 285	3
ENG 161	3	OFT 250	3	SPC 156	3	SOC 155	3
	15		**15**		**15**		**15**

Office Technology, AAS

OFFICE ADMINISTRATION OPTION

Division of Computer Technology/Business

This option is designed to prepare students for administrative positions in an office setting. Course work is presented in general education, office technology, business procedures and computer technology.

Career Opportunities

Graduates of the office administration option of the Office Technology AAS degree program may find employment as administrative assistants, executive office managers, office managers, executive secretaries, receptionists and personnel clerks. Opportunities are available in large corporations, small business offices, insurance offices, nonprofit organizations, legal offices and government offices.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- develop advanced keyboarding, document processing and information management skills
- achieve proficiency using Microsoft Office in word processing, spreadsheets, database applications, personal information manager software, presentation and desktop publishing software applications
- proofread and edit copy with a high degree of accuracy
- use appropriate office procedures in records management, telephone communications, electronic and hard-copy mail, meetings and conferences, travel arrangements and financial matters
- adapt to the changing nature of technology, equipment and procedures while retaining appropriate office practices
- work independently or in teams to demonstrate effective interpersonal and problem-solving skills, attitudes, work habits, professional behavior and ethics
- demonstrate academic knowledge required of all graduates including competency in critical thinking, writing, information literacy, oral communication and quantitative reasoning
- provide ethical service to a diverse customer base

PROGRAM REQUIREMENTS (TOTAL CREDITS — 62)

General Education

BUS 120	Math of Business	3
CPT 150	Microcomputer Concepts	3
ENG 161	College Writing	3
ENG 163	Business Commun.	3
SPC 156	Interpersonal Comm.	3
Social Science Elective		3
		18

Major

CPT 195	Excel for Windows	3
CPT 196	Access for Windows	3
OFT 110	Document Processing I	3
OFT 120	Document Processing II	3
OFT 140	Office Procedures	3
OFT 185	PowerPoint	1
OFT 190	Word for Windows	3
OFT 210	Office Technologies	3
OFT 220	Transcription	3
OFT 225	Proofreading	3
OFT 235	Customer Service	3
OFT 278	Integrated Office App.	3
OFT 280	Office Management✦	
or		3
OFT 299	Office Internship	
		37

Other Required Courses

BUS 140	Intro to Business	3
WEB 102	Acrobat Essentials	1
WEB 188	Social Media	3
		7

✦*capstone course*

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**	
BUS 120	3	BUS 140	3	CPT 196	3	CPT 278	3
CPT 150	3	CPT 195	3	OFT 140	3	OFT 225	3
ENG 161	3	ENG 163	3	OFT 210	3	OFT 235	3
OFT 110	3	OFT 120	3	OFT 220	3	OFT 280 or 299	3
OFT 190	3	OFT 185	1	WEB 102	1	WEB 188	3
	15	SPC 156	3	Social Science Elective	3		**15**
			16		**16**		

Office Technology, Diploma

MEDICAL ADMINISTRATION

Division of Computer Technology/Business

The medical administration diploma combines course work in human biology, medical terminology, transcription, medical office duties, electronic health record and billing processes. Courses included in this diploma program may be applied toward the Office Technology AAS Medical Administration Option.

Career Opportunities

Graduates of the medical administration diploma program may find employment as medical administrative assistants, medical office personnel, medical records assistants, unit secretaries, admissions clerks, claims processors and medical records technicians.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- develop skills in writing, basic math and communication
- collect, prepare, file, store and retrieve information
- develop skills using practice management and electronic health record software
- produce CMS 1500 claim forms
- work independently or in teams to demonstrate effective interpersonal and problem-solving skills, attitudes and work habits

PROGRAM REQUIREMENTS (TOTAL CREDITS — 30)

General Education

BUS 120	Math of Business	3
CPT 150	Microcomputer Concepts	3
ENG 161	College Writing	3
SPC 156	Interpersonal Comm.	3
		12

Major

OFT 130	A & P for Medical Office	3
OFT 145	Medical Office Proced.	3
OFT 150	Medical Billing Mgmt,	3
OFT 155	Electronic Health Rec.	3
		12

Other Required Courses

BIO 107	Human Biology	3
CPT 259	User Support Oper.	3
		6

RECOMMENDED SEQUENCE

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

Fall Semester		**Spring Semester**	
BIO 107	3	BUS 120	3
CPT 150	3	CPT 259	3
ENG 161	3	OFT 130	3
OFT 145	3	OFT 150	3
SPC 156	3	OFT 155	3
	15		**15**

Office Technology, Diploma

OFFICE ADMINISTRATION

Division of Computer Technology/Business

The office administration diploma program offers course work in office administration, office procedures and computer applications. Courses in this diploma may be applied toward the Office Technology AAS Office Administration Option.

Career Opportunities

Graduates of the office administration diploma program may find employment as administrative assistants, office managers, receptionists, personnel clerks and word processors. Opportunities are available in large corporations, small business offices, insurance offices, nonprofit organizations, legal offices and government offices.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- key documents using touch-typing with a high degree of speed and accuracy
- understand filing principles and office procedures
- achieve proficiency using Microsoft Office word processing, spreadsheets, presentation software applications
- compose and edit business correspondence, reports and forms
- provide ethical service to a diverse customer base

PROGRAM REQUIREMENTS (TOTAL CREDITS — 31)

General Education		
BUS 120	Math of Business	3
CPT 150	Microcomputer Concepts	3
ENG 161	College Writing	3
ENG 163	Business Commun.	3
		12

Major		
CPT 195	Excel for Windows	3
OFT 110	Document Processing I	3
OFT 120	Document Processing II	3
OFT 140	Office Procedures	3
OFT 185	PowerPoint	1
OFT 190	Word for Windows	3
OFT 235	Customer Service	3
		19

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

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

Fall Semester	
CPT 150	3
ENG 161	3
OFT 110	3
OFT 140	3
OFT 190	3
	15

Spring Semester	
BUS 120	3
CPT 120	3
CPT 195	3
ENG 163	3
OFT 185	1
OFT 235	3
	16

Office Technology, Certificate

CUSTOMER SERVICE

Division of Computer Technology/Business

The customer service certificate program is designed to teach quality customer service by examining the attitudes, knowledge and skills that are needed to work effectively in any job that has contact with clients, customers or patients. Coursework combines customer service skills with other courses that emphasize interpersonal communications, keyboarding, mathematics and computer applications. Topics will include improving customer loyalty, customer service, handling complaints and customer relations. Courses in this certificate may be applied toward the Office Technology AAS Office Administration Option.

Career Opportunities

Graduates of this program may find employment as customer service assistants, customer service representatives, office managers, technical support clerks, customer service clerks and administrative assistants. The job category of customer service representative has been defined as a high-priority occupation for the Westmoreland-Fayette Workforce Investment Area with an estimated average salary of $30,930 and an annual job growth rate of 14%. The Pennsylvania Department of Labor anticipates 134 job openings per year in our region.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- professionally communicate non-verbally and in writing
- provide ethical service to a diverse customer base
- demonstrate skills in using Microsoft Office
- perform mathematical calculations required by business
- perform data entry with speed and accuracy

PROGRAM REQUIREMENTS (TOTAL CREDITS — 18)

BUS 120	Math of Business	3
BUS 140	Intro to Business	3
CPT 150	Microcomputer Concepts	3
OFT 110	Document Pro. I	3
OFT 235	Customer Service	3
SPC 156	Interpersonal Comm.	3
		18

Office Technology, Certificate

MEDICAL ADMINISTRATION

Division of Computer Technology/Business

The medical administration certificate program is designed for students who are interested in medical administration. Course work combines medical terminology, medical office procedures and medical billing management software. Courses in this certificate may be applied toward the Office Technology AAS Medical Administration Option and the Office Technology Diploma Medical Administration Option.

Career Opportunities

Graduates of the medical administration certificate may find employment as medical administrative assistants, medical office personnel, medical records assistants and patient access representatives.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- collect, prepare, file, store and retrieve information
- develop skills in electronic processing and claims processing
- develop skills in medical terminology, human biology, and anatomy and physiology
- describe and implement medical insurance and electronic health regulations by using various software programs

PROGRAM REQUIREMENTS (TOTAL CREDITS — 18)

CPT 150	Microcomputer Cncpts.	3
OFT 110	Document Processing I	3
OFT 145	Medical Office Proc.	3
OFT 150	Medical Billing Mgmt.	3
OFT 155	Electronic Health Rec.	3
OFT 235	Customer Service	3
		18

Office Technology, Certificate

OFFICE ADMINISTRATION

Division of Computer Technology/Business

The office administration certificate is designed to provide a concentration in keyboarding and the Microsoft Office software products. Office applications covered include Word, Excel and PowerPoint. Courses in this certificate may be applied toward the Office Technology AAS Office Administration Option.

Career Opportunities

Graduates of the office administration certificate program may find employment as administrative office support, receptionists and personnel clerks.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- develop keyboarding, word processing, spreadsheet and presentation skills
- use appropriate office procedures in records information management, telephone communications, electronic and hard-copy mail, meetings and conferences, travel arrangements and financial matters

PROGRAM REQUIREMENTS (TOTAL CREDITS — 16)

CPT 195	Excel for Windows	3
OFT 110	Document Processing I	3
OFT 120	Document Processing II	3
OFT 140	Office Procedures	3
OFT 185	PowerPoint	1
OFT 190	Word for Windows	3
		16

Office Technology, Certificate

MEDICAL COMPUTER SUPPORT

Division of Computer Technology/Business

The medical computer support certificate is designed for those students who seek entry-level positions in the computer/medical field. Courses in this certificate may be applied toward the Office Technology AAS Medical Administration Option.

Career Opportunities

Graduates of the medical computer support certificate may find employment as computer help desk support specialists, unit clerks, medical records assistants and front office billing representatives.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- setup, maintain and troubleshoot a computer workstation (hardware, devices, drivers, software) within a networked environment
- collect, prepare, file, store and retrieve electronic data
- develop skills in electronic document processing and claims processing
- describe and implement medical insurance and electronic health regulations by using various software application programs

PROGRAM REQUIREMENTS (TOTAL CREDITS — 18)

CPT 150	Microcomputer Cncpts.	3
CPT 248	PC Hardware	3
CPT 259	User Support Operations	3
OFT 145	Med. Office Procedures	3
OFT 150	Medical Billing Mgmt.	3
OFT 155	Electronic Health Rec.	3
		18

Paralegal, AAS

Division of Public Service/Humanities/Social Sciences/Mathematics

The paralegal associate degree program is designed to provide students with the knowledge and skills needed to perform legal services on a paraprofessional level, usually under the direct supervision of a lawyer. Typical tasks include legal research, client interviewing, investigation, drafting of pleadings, motions, memoranda and other documents, and creating and maintaining client files.

Career Opportunities

Paralegals are employed by law firms, corporations, government agencies and community legal service agencies. Many legal assistants specialize in one area of the law such as corporate law, real estate, labor law, litigation, domestic law, or estates and trusts.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- demonstrate effective communication skills, orally and verbally, by actively listening, and by reading and understanding legal documents
- utilize and apply mathematical concepts and numerical computational skills utilized in a legal setting
- demonstrate a thorough understanding of diversity in the workplace and in society, citizenship, ethics and human relations
- apply effective critical thinking and problem solving skills in interpersonal situations with clients and other professionals in the workplace
- collect, analyze, evaluate and organize information from clients, personnel in the legal system, and apply good research and investigative skills utilizing the appropriate legal terminology
- utilize effective interpersonal skills with others in the legal environment, including supervisors, clients, and other legal professionals
- illustrate the ability to change and adapt to changing circumstances, including the continuing learning environment of the legal professional, along with the responsibility to change and adapt themselves, personally and professionally
- demonstrate effective use of technology, including computer-assisted legal research, the Internet, and other technology utilized for research, investigative skills and applications in a legal setting.

PROGRAM REQUIREMENTS (TOTAL CREDITS — 60)

General Education

ENG 161	College Writing	3
ENG 163	Business Commun.	
or		3
ENG 164	Advanced Composition	
HUM 156	Critical Thinking	
or		3
SPC 155	Effective Speech	
Computer Technology Elective		3
Mathematics Elective		3
Social Science Elective		3
		18

Major

LAS 101	The Legal Assistant	3
LAS 111	Legal Analysis	3
LAS 115	Torts	3
LAS 120	Estates and Trusts	3
LAS 125	Litigation I	3
LAS 140	Domestic Relations	3
LAS 210	Legal Writing	3
LAS 215	Legal Research	3
LAS 293	Internship	3
OFT 140	Office Procedures	3
RLS 210	Law of Real Estate	3
		33

Other Required Courses

CRJ 160	Criminal Law I	3
Restricted Electives*		6
		9

***Restricted Electives**

ACC 155	Accounting I
BUS 205	Business Law I
BUS 249	Labor Relations
CRJ 163	Criminal Procedure
CRJ 261	Criminal Law II
CRJ 263	Investigative Concepts
LAS 200	Constit. Power & Civ. Lib.

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**	
ENG 161	3	ENG 163 or 164	3	LAS 120	3	CRJ 160	3
LAS 101	3	HUM 156 or SPC 155	3	LAS 215	3	LAS 140	3
LAS 111	3	LAS 115	3	OFT 140	3	LAS 293	3
Computer Tech. Elective	3	LAS 125	3	RLS 210	3	Restricted Elective*	6
Mathematics Elective	3	LAS 210	3	Social Science Elective	3		**15**
	15		**15**		**15**		

Paralegal, Diploma

Division of Public Service/Humanities/Social Sciences/Mathematics

The paralegal diploma program is designed to provide a solid foundation in the principles and practices involved in performing certain paraprofessional services.

Career Opportunities

Graduates of the program typically work in areas involving legal research, preparation of documents, maintenance of files and client interviewing.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- use good research skills
- understand basic legal terminology
- gain familiarity with computer operations and applications
- prepare, under supervision, legal documents such as deeds and mortgages

PROGRAM REQUIREMENTS (TOTAL CREDITS — 33)

General Education		
ENG 161	College Writing	3
Computer Technology Elective		3
Mathematics Elective		3
Social Science Elective		3
		12

Major		
LAS 101	The Legal Assistant	3
LAS 111	Legal Analysis	3
LAS 125	Litigation I	3
LAS 210	Legal Writing	3
LAS 215	Legal Research	3
RLS 210	Law of Real Estate	3
		18

Other Required Courses	
Restricted Elective*	3
	3

*Restricted Electives
These are listed in the legal assisting associate degree program.

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

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

Fall Semester	
ENG 161	3
LAS 101	3
LAS 111	3
RLS 210	3
Computer Elective	3
	15

Spring Semester	
LAS 125	3
LAS 210	3
Mathematics Elective	3
Restricted Elective*	3
Social Science Elective	3
	15

Fall Semester	
LAS 215	3
	3

Petroleum Technology, AAS

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

The petroleum technology degree is designed to prepare students for entry-level positions in the upstream, midstream and downstream phases of the natural gas and oil sector, particularly in the field of gas plant processing, refining, power generation, pipeline technology and other various plant processes. Through classroom and laboratory exercises and field activities, this degree will provide the skill set essential for entry-level industrial plant operations and pipeline technologies with emphasis on safety, efficiency and productivity. Students will acquire skills required to ensure maximum production and quality through the knowledge of hydraulics/pneumatics, PLC controls, compression and flow dynamics, circuits, corrosion, metallurgy, pipeline code and regulations, mechanical drives and industrial management. These concepts will enable the student to ensure maximum production and quality while improving performance and cost efficiency.

Career Opportunities

Graduates of the petroleum technology program, depending upon existing education and qualifications, may accept positions such as: gas plant operators; petroleum pump system operators; refinery and chemical plant operators, including industrial machinery mechanics, maintenance and repair workers; and general maintenance workers.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- demonstrate the skills, professional values, and ethics necessary to be employed in the field of natural gas and oil operations
- demonstrate effective oral and written communication skills with corporate officers, supervisors, government officials, front line workers, and other petroleum operations employees
- describe the principles of petroleum extraction and related geology
- describe the general principles and terminology of natural gas and oil field operations
- describe the general principles and terminology of gas plant operations
- identify and interpret occupational health and safety standards
- perform gas and oil measurements within a pipeline and/or gas plant
- read, record and adjust petroleum instrumentation
- describe relevant gas law calculations with a special emphasis on relationships between variables
- describe the transportation, processing, storage and distribution processes of natural gas and oil
- test equipment operation and maintenance
- identify common safety hazards associated with exploration, production, transportation, storage, and distribution
- identify, complete and submit required record-keeping documentation for various occupational industries including petroleum plants, chemical plants and pipelines
- use troubleshooting skills to identify, foresee and prevent possible problems, conflicts and failures, and to systematically and intelligently make repairs

PROGRAM REQUIREMENTS (TOTAL CREDITS – 63)

General Education

ENG 161	College Writing	3
ENG 162	Technical Comm.	3
MTH 108	Math for Tech.	4
DFT 258	AutoCAD	4
PSY 160	Psychology	3
		17

Major

NGT 100	Comm. Teamwork & Conflict Res. in Ind.	1
NGT 101	Intro to Natural Gas & Oil Industry	4
NGT 105	Emg. Response for Nat. Gas & Oil	1
NGT 110	Envirn. Protect, Meth. & Dev. for Nat. Gas Ind.	2
NGT 140	Gas Plant Processing	4
NGT 150	Gas Comp. & Flow Dynamics	4
NGT 160	Petroleum Instrum.	4
NGT 170	Corrosion Basics	4
		24

Other Required Courses

ELC 191	Basic Prin. of Ind. Elec.	4
EMA 120	Mechanical Components & Electric Motors	4
MET 105	Welding Metallurgy I	4
WEL 209	Intro to Main. & Troub.	3
WEL 210	Main. & Troublesh. II	4
WEL 220	Inspection of Code Weld.	3
		22

RECOMMENDED SEQUENCE

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

Fall Semester		**Spring Semester**		**Fall Smester**		**Spring Semester**	
DFT 258	4	ELC 191	4	EMA 120	4	MET 105	4
ENG 161	3	NGT 100	1	NGT 140	4	NGT 105	1
ENG 162	3	NGT 101	4	NGT 150	4	NGT 170	4
MTH 108	4	NGT 110	2	NGT 160	4	WEL 220	3
PSY 160	3	WEL 209	3		**16**		**12**
	17	WEL 210	4				
			18				

Petroleum and Industrial Process Operation Technology, Certificate

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

The petroleum and industrial process operation technology certificate is designed to prepare students for entry-level positions in the midstream and downstream phases of the natural gas and oil sector, particularly in the field of gas plant processing, refining, power generation and other various plant processes. Through classroom and laboratory exercises and field activities, this certificate will provide the skill set essential for entry-level industrial plant operations with emphasis on safety, efficiency and productivity. Students will acquire skills required to ensure maximum production and quality through the knowledge of gas processing, compression and flow dynamics, circuits, mechanical drives and basic instrumentation and control. These concepts will enable the student to ensure maximum production and quality while improving performance and cost efficiency.

Career Opportunities

Graduates of the petroleum and industrial process operation technology program, depending upon existing education and qualifications, may accept positions such as: gas plant operators, petroleum pump system operators, refinery and chemical plant operators, including industrial machinery mechanics, maintenance and repair workers and general maintenance workers.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- demonstrate the skills, professional values and ethics necessary to be employed in the field of industrial and gas plant processing
- demonstrate effective oral and written communication skills with corporate officers, supervisors, government officials, front line workers, and other industrial and gas plant processing employees
- describe the general principles and terminology of gas plant operations
- identify and interpret occupational health and safety standards
- perform gas and oil measurements
- describe relevant gas law calculations with a special emphasis on relationships between variables
- describe the transportation, processing, storage and distribution processes of natural gas and oil
- identify common safety hazards associated with exploration, production, transportation, storage and distribution
- identify, complete and submit required record-keeping documentation for various occupational industries

PROGRAM REQUIREMENTS (TOTAL CREDITS – 16)

EMA 120	Mechanical Comp. & Electric Motors	4
NGT 140	Gas Processing I	4
NGT 150	Gas Compression & Flow Dynamics	4
NGT 160	Petroleum Instrumen.	4
		16

Phlebotomy/Specimen Processing, Certificate

WITH PHLEBOTOMY ONLY OPTION

Division of Health Professions/Natural Sciences

The purpose of the program is twofold. First the student must function as a phlebotomist in a hospital or non-acute healthcare setting (ex. clinic, lab, skilled nursing facility). The second purpose is to prepare the student to function as a laboratory specimen processor or laboratory aide in a clinical laboratory setting.

Admission to the program is limited by the availability of clinical sites. A separate application is required. Students with previous credit or noncredit phlebotomy certificates and documented two years of clinical experience may apply to test out of the phlebotomy specific courses.

The Phlebotomy Only option is for those students who desire to be a phlebotomist only and not to learn the laboratory specimen processor skills.

Career Opportunities

As a phlebotomist, the graduate may draw blood in physicians office, blood banks, hospitals, and phlebotomy units. In addition to phlebotomy, a specimen processor will collect, evaluate and process various laboratory samples for hospital laboratories, physician office groups, and free-standing surgical facilities.

Special Admission and Selection Criteria for Phlebotomy/Specimen Processing Certificate Program

- Applicants must be graduates of an accredited secondary school program or hold a GED equivalency certificate prior to selection. **Medical Terminology, ALH 122** is a program prerequisite for the Specimen Processing program.
- Applicants must complete and submit a WCCC Application for Admission and a separate Allied Health Programs Application to the Admissions Office. Since this program requires a clinical placement, enrollment may be limited.
- Applicants who are accepted must have successfully completed CPR/Basic Life Support for Health Care Providers Annual Certification prior to program enrollment and maintain current status during program enrollment.
- Applicants who are accepted must submit satisfactory results from pre-entrance medical examination and immunizations obtained at the applicant's expense. Specific information regarding the examination is provided to applicants.
- Applicants who are accepted must purchase student liability insurance coverage upon program enrollment.
- Applicants must provide evidence of Pennsylvania State Police Request for Criminal Record Check (SP4-164) and Pennsylvania Child Abuse History Clearance (CY-113) at the candidate's expense. Any child abuse record results in denial of admission to the phlebotomy/lab specimen processing program. FBI fingerprinting is required through the Department of Public Welfare, at the applicant's expense. These records must be submitted to the phlebotomy/lab specimen processing program within two weeks of the date of notification of initial acceptance. Any felony conviction may result in denial of admission to the phlebotomy/lab specimen processing program. Any misdemeanor is conditional pending receipt and evaluation of the background information to determine whether there is a conviction which may bar the student from admission to the phlebotomy/lab specimen processing program.
- Urine Drug Screening is required at applicant's expense. A positive drug screen may result in denial of admission to the phlebotomy/lab specimen processing program continuation in the phlebotomy/lab specimen processing program. The program reserves the right to require random drug screening while the student is enrolled.
- Applicants must be able to meet the Functional Abilities Guidelines of the Program.
- Students are expected to conduct themselves according the general professional guidelines when representing the college. In addition, students are expected to follow applicable institutional guidelines and policies when in the course setting.
- Students must notify the program director immediately, in writing, if there is any change in physical, mental, criminal, child abuse or drug screening results status.
- Protection of privacy/confidentiality is essential at all times. Violation of privacy/confidentiality acts or policies will result in dismissal of student from program and/or college.
- All prerequisite and program course work must be completed with a C grade or better. Those students who have taken developmental courses three or more times will not be considered for admission to the program.
- Student must have a college level grade point average of 2.0 or above.

Fall Admission

Applicants must complete and submit a WCCC Application for Admission and an Allied Health Programs Application to the Admissions Office by **January 5** prior to the fall semester for which enrollment is anticipated to be guaranteed consideration.

Spring Admission

Applicants must complete and submit a WCCC Application for Admission and an Allied Health Programs Application to the Admissions Office by **May 15** prior to the spring semester for which enrollment is anticipated to be guaranteed consideration.

Phlebotomy/Specimen Processing, Certificate

WITH PHLEBOTOMY ONLY OPTION (CONTINUED)

Division of Health Professions/Natural Sciences

Program Learning Outcomes

This curriculum is designed to prepare students to:

- collect, transport, handle, and process laboratory specimens for analysis
- demonstrate professional conduct, stress management, and interpersonal and communication skills with patients, the public, peers and other health care personnel
- display an understanding of requisitioning and the legal implications of their work environment
- recognize and act upon individual needs for continuing education as a function of growth and maintenance of professional competence

Functional Abilities Guidelines

Functional abilities are physical and mental attitudes and behaviors needed to practice safely, with or without accommodations. Accommodations must be first evaluated and documented by a physician and then evaluated by the college's counselor for special populations and individual healthcare programs.

- move freely to observe and assess patients
- full manual dexterity of upper extremities, including neck and shoulders, and unrestricted movement of both upper and lower extremities in order to position to complete tasks
- lift and support at least 75 pounds
- visually able to perform tasks safely
- hear sounds of spoken word and verbal communications
- demonstrate tactile ability to assess blood draw procedures
- ability to speak to patients and communicate essential directions
- write in legible manner and be able to document concise information
- exercise proper judgment and insight
- ability to complete task after verbal or written instructions
- ability to demonstrate new procedures in clinical application
- demonstrate respect, honestly and integrity at all times
- demonstrate privacy and confidentiality at all times
- ability to perform gross and fine motor skills in order to complete procedures
- ability to adapt to changing environmental/stress and deal with the unexpected
- perform multiple responsibilities concurrently
- establish rapport with patients and coworkers
- effectively and accurately speak on telephone and convey information through writing and verbal manner
- able to follow directions from others

There is the option for students to take the Phlebotomy Only Option certificate program.** ***The following information applies just to the Phlebotomy Only Option Program:

- Student must declare that they are enrolled for this option at the time of application for admission to the program.
- Once students begin PHB 101, they cannot change and enroll in the Phlebotomy/Specimen Processing Certificate additional courses and/or prerequisites until another semester.
- Upon successful completion of the Phlebotomy Only Option, the student may be able to seek employment as a phlebotomist only.
- Students must follow and complete all requirements to enter the Phlebotomy Only Option as identified in the Phlebotomy/Specimen Processing Certificate Program (such as: criminal check, child abuse check, health examination and immunization, etc).
- The Functional Abilities Guidelines and CPR/BLS requirements also apply to the Phlebotomy Only Option program.
- Students who have specific questions related to this program option should call either their advisor or the program director before classes begin to clarify the differences between the two programs.
- Students who have successfully completed the Phlebotomy Only Option cannot represent themselves as having experience or competence in the lab specimen processing knowledge and/or skills.
- Students who successfully complete the Phlebotomy Only Option may apply to return in another semester to take the additional required prerequisites and program courses for the Phlebotomy/Specimen Processing Certificate Program.
- Upon completion of practicum experience students may sit for phlebotomy technician PBT (ASCP) from the American Society of Clincial Pathologists

Phlebotomy/Specimen Processing Certificate Program

PROGRAM REQUIREMENTS (TOTAL CREDITS – 16)

Prerequisite			Major			General Education		
ALH 122	Medical Terminology	3	PHB 101	Clinical Phlebotomy	4	OFT 110	Document Proc. I	3
		3	PHB 105	Specimen Processing	4			**3**
			PHB 110	Spec. Proc. Practicum	5			
					13			

Phlebotomy ONLY Option Certificate Program*

PROGRAM REQUIREMENTS (TOTAL CREDITS – 12)

Prerequisite		Major		
None		ALH 122	Medical Terminology	3
		PHB 101	Clinical Phlebotomy	4
		PHB 111	Phlebotomy Practicum	5
				12

Pipeline Mechanic, Certificate

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

The pipeline mechanic certificate is designed to prepare students for positions in the midstream and downstream phases of the natural gas and oil sector, particularly in the field of pipeline operations. The pipeline mechanic certificate is designed to prepare students for entry-level positions in natural gas, pipeline operations, compression, refining, power generation and various plant processes. This certificate will provide the skill set essential for pipeline operations with emphasis on safety, efficiency and productivity. Students will acquire skills required to ensure maximum production and quality through the knowledge of corrosion, metallurgy, pipeline code and regulations, hydraulics/pneumatics, PLC controls, compression and flow dynamics, circuits, mechanical drives and industrial management. These concepts will enable the student to ensure maximum production and quality while improving performance and cost efficiency.

Career Opportunities

Graduates of the pipeline mechanic certificate, depending upon existing education and qualifications, may accept positions such as pipeline technicians, field service technicians, compressor operators, gas plant operators, petroleum pump system operators, refinery and chemical plant operators, pipeline maintenance and repair workers, and general maintenance workers.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- demonstrate the skills, professional values and ethics necessary to be employed in the field of industrial and gas pipeline operations
- demonstrate effective oral and written communication skills with corporate officers, supervisors, government officials, front line workers and other petroleum operations employees
- describe the general principles and terminology of pipeline operations
- identify and interpret occupational health and safety standards
- perform gas and oil measurements
- read, record and adjust petroleum instrumentation
- describe relevant gas law calculations with a special emphasis on relationships between variables
- describe the transportation, processing, storage and distribution processes of natural gas and oil
- identify common safety hazards associated with exploration, production, transportation, storage and distribution
- identify, complete and submit required record-keeping documentation for various occupational industries

PROGRAM REQUIREMENTS (TOTAL CREDITS – 16)

	Major	
NGT 105	Emerg. Response for Natural Gas & Oil	1
NGT 150	Gas Compression & Flow Dynamics	4
NGT 170	Corrosion Basics	4
MET 105	Welding Metallurgy I	4
WEL 220	Insp. of Code Welding	3
		16

Radiology Technology, AAS

Division of Health Professions/Natural Sciences

The radiology technology program offers the academic preparation and clinical training needed for a career as a radiologic technologist (radiographer). While many radiographers provide services in a hospital setting, others provide services in stand-alone medical imaging centers, mobile radiography providers and private physician offices. Radiography is the gateway to most other specialized imaging modalities. With additional education through either employer based training or formal education, radiographers can progress to careers in Computed Tomograph (CT), Magnetic Resonance Imaging (MRI), Angiography, Mammography and Quality Management. The program includes clinical experience in various off campus locations that provide radiologic imaging services.

Students who complete the radiology technology program satisfactorily are eligible to apply to take the American Registry of Radiologic Technologists (ARRT) national certification exam.

Career Opportunities

Students completing this program will be qualified to enter the work force as an entry level radiographer. Radiographers may find employment opportunities with hospitals, stand-alone medical imaging centers, mobile imaging providers and private practice physicians.

Special Admission and Selection Criteria

Since this program requires a clinical placement, enrollment is selective and enrollment is limited by the clinical placement necessary to complete the radiology technology course requirements. Students may be required to interview at one or more clinical sites on their own time and expense. Clinical site preference is not guaranteed. Specific criteria for admission and selection are listed below.

- Applicants must be graduates of an accredited secondary school program, or high school seniors enrolled in an accredited secondary school program, or those who hold a GED equivalency certificate prior to selection.
- High school preparation should include one year each of biology, physics, chemistry, and algebra. If these courses were not taken in high school, BIO 107, PHY 110, CHM 107 and MTH 100 must be completed prior to the application deadline for the radiology technology program with a minimum "C" grade or better (C minus grade not accepted.)
- College prerequisite coursework includes completion of BIO 171-Anatomy and Physiology I, with a minimum grade of C (C minus grade not accepted.)
- BIO 171 must be successfully completed by the end of the spring semester prior to starting the RAD program. Students accepted into the RAD program and not completing BIO 171 with a "C" or better will be withdrawn from the program.
- Applicants must complete and submit a WCCC Application for Admission and Allied Health Programs Application to the Admissions Office by **January 5** prior to the fall semester in which enrollment is anticipated. The forms must be accompanied by official transcripts from all secondary schools attended, GED programs, and any other formal education program attended beyond high school.
- Applicants must take the computerized placement test (Accuplacer) and have successfully completed any required developmental courses and/or high school course work with a minimum grade of C (C minus grade not accepted.) Also, applicants who have completed credit courses must have a 2.5 or better GPA. Only courses necessary to meet the radiology technology program requirements are considered when calculating the GPA. If the GPA is less than 2.5, one or more of these courses can be repeated in order to meet this requirement before testing.
- Students who have attempted developmental courses in math or science three or more times will not be considered for admission.
- Applicants to the radiology program should review the ARRT rules and regulations and the ARRT standard of ethics prior to submitting their application. Information can be found on the ARRT website http://www.arrt.org.
- Admission to the radiology technology program requires the applicant to submit information regarding criminal conviction and/or crimes of moral turpitude. Upon initial acceptance into the program, a criminal record check and child abuse history must be obtained at the applicant's expense. These records must be submitted to the radiology program. Admission is conditional pending receipt and evaluation of the background information to determine whether there is any conviction which may bar the student from admission to the radiology program.

NOTE: Admission decisions are based on two factors which contribute to the overall admission score: GPA and evidence of success in courses already taken. Admission to the radiology program is competitive and there are a limited number of seats.

Child Abuse Clearance

Any record results in denial of admission to the radiology program.

Criminal Record Check

Any felony conviction may result in denial of admission to the radiology technology program. Any misdemeanor will be individually evaluated. Conviction of a felonious act may result in the American Registry of Radiologic Technologist denying the applicant to sit for certification examination.

Drug Screen

A positive drug screen may result in denial of admission to the radiology technology program or continuation in the radiology technology program.

Essential Cognitive, Physical and Behavior Functions for the Radiology Technology Program

Radiology technology students must be able to meet the following physical and mental abilities for successful completion of the radiology technology program:

- Must have the physical ability to move radiography equipment and manipulate the X-ray tube, which is located 70-80 inches above the floor
- Lift and/or support at a minimum 50 pounds in order to lift and carry X-ray accessories
- Have the ability to appropriately position patients for radiographic procedures and safely transfer patients who may weigh in excess of 300 pounds
- Must be able to push a portable X-ray machine for bedside radiography
- Ability to articulate clear verbal commands to the patient while the patient is being positioned for a procedure from a distance of 7-12 feet
- Have the ability to select and calculate proper X-ray exposure factors based on exam type and patient body habitus
- Must be able to manage stressful situations that relate to patient care, procedure and technical standards
- Must be able to evaluate radiographs for proper patient positioning, proper exposure factors, and other essential factors for the purpose of image quality control
- Have sight corrected, to observe patients from a distance of 5-20 feet, ability to read and adjust the X-ray control panel, and position patients correctly
- Have hearing corrected, with the ability to hear patients at a distance of 5-12 feet
- Have sufficient tactile ability in order to asses a patient's pulses, in addition to changes in a patient's physiologic status (i.e. changes in edema, skin temperature, etc.)
- Have the ability to smell odors that may signify a change in the physiologic status of a patient or an unsafe environmental condition
- Have the ability to read and comprehend written classroom material, medical documents, and institution procedures and policies
- Have the ability to write legibly in English
- Must be able to accurately calculate in order to prepare medications, administer proper dosage of radiographic contrast material, and count pulse and respirations
- Must be able to move freely with full manual dexterity of both upper and lower extremities, have unrestricted movement of neck, shoulder, back and hips in order to assess, observe and perform emergency patient care, assist with all aspects of patient care, and be able to touch the floor for the removal of environmental hazards
- Cannot be dependent on any chemical or substance
- Have the ability to react appropriately and quickly in emergency situations
- Must be poised, well groomed and neat in appearance, discreet, tactful, diplomatic, professional, versatile, ethical and dependable
- Must have the ability to comprehend written and verbal instructions correctly in academic and clinical health care settings
- Must exhibit the capacity for reasoned judgment and calm in a health care environment
- Must not have physical or mental medical disorders that limit the ability to perform the duties of a radiology technology student
- Must be stable emotionally; this type of work involves life and death situations
- Must show honesty and integrity in all matters
- Enjoy working with people and patient contact

Students will be removed from the program if a health condition significantly limits the student from performing the routine functions of a radiology technology student and/or presents a danger to the safety and health of patients.
After starting the radiology technology program, students will immediately notify the program director if any of these stated functions change. An evaluation may occur to determine if students are able to continue in the program.

Student Pregnancy

Voluntary Declaration

Students who become pregnant during their enrollment in the radiology technology program have the ability to decide whether or not to notify the program. Students who decide to notify the program must do so in writing to the program director. Students who do not voluntarily disclose their pregnancy are considered not pregnant.
Upon disclosure of pregnancy, students may:

- Remain in the program on a full-time basis without modification, as requested by the student
- Withdraw from the radiology technology program

Safety Practices for the Pregnant Radiation Worker

The American Society of Radiologic Technologist states, "Customary radiation safety practices for pregnant radiation workers shall be followed." The recommendation suggests referencing the following:

- 10 CFR Part 20.1208
- NRC Regulatory guides #8.2, 8.7, 8.13, 8.29, 8.34, 8.36, may be obtained from the NRC via the Public Document room at 1-800-397-4209 or via the Electronic Reading room ADAMS access system on their website at www.nrc.gov
- Pregnancy Disability Law, P.L. 95-555
- EEOC "Guidelines on sex discrimination and questions and answers"
- ICRP Publication #84. Pregnancy and Medical Radiation
- NCRP report #116

Note: The WCCC Library holds the above reference material

In compliance with NCR regulation 10 CFR Part 20.1208, "Dose to an Embryo/Fetus," requires licensees to "ensure that the dose to an embryo/fetus during the entire pregnancy, due to occupational exposure of a declared pregnant woman, does not exceed 0.5 rem (5 mSv)."

These exposure limits will apply until:

- The student gives birth
- The student revokes in writing to the program director her previously declared pregnancy
- The student informs the program director in writing that she is no longer pregnant

For students who formally declare their pregnancy

- Past dosimetry reports will be reviewed
- Pregnant students will be required to purchase a second film badge to be worn at waist level and under any radiation protective apparel
- Review of radiation safety practices for pregnant radiation workers
- Notification to clinical instructors of pregnancy
- If students choose, they have the opportunity for clinical assignments that do not include fluoroscopy and portable radiography during their first trimester
- Students will submit a statement from the physician stating that the student is cleared to continue on in the program
- Students will submit monthly statements from their physician to continue after the sixth month
- Review of student's monthly radiation dosimetry report

If the student makes the decision to withdraw from the radiology technology program, she may be reinstated the following year providing space is available and she continues to meet admission criteria of the radiology technology program.

Final Admission Criteria

Accepted applicants will be required to attend a mandatory information session as the final step in the admission process. Specific information regarding the following additional program requirements will be provided to applicants at that time. These include:

- Complete physical examination, lab tests, proof of immunizations, and urine drug screen
- CPR-Basic Life Support for Health Care Providers Annual Certification required
- Evidence of a student's liability insurance policy

All of the above must be submitted to the radiology program by June 15 or program acceptance will be withdrawn.

Readmission Policy

Students returning to the program after removal must successfully complete laboratory remediation from a tutor and a laboratory exam commensurate with the knowledge level when the student left the program.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- provide radiographic imaging services within a healthcare setting for a diverse patient population with an awareness of cultural diversity within the community
- use the principle of ALARA to minimize radiation exposure to the patient, one's self and the general population
- operate all radiologic imaging equipment safely, effectively and efficiently
- expose, process and evaluate all types of radiologic images
- apply computation skills to provide safe X-ray exposure to patients
- develop competency in assessing patients and devising ways to image compromised patients
- use computers and computerized equipment in the process of imaging and caring for patients
- provide imaging procedure patient education
- respect patient confidentiality and follow HIPPA guidelines
- practice radiography in a manner consistent with the ARRT ethical guidelines
- use effective communication skills when collaborating with multidisciplinary health team members
- develop interpersonal and communication skills to effectively interact with diverse population groups
- provide appropriate life-support measures for medical emergencies that may be encountered in a radiologic imaging setting
- use resources to enhance self-development and professional growth

Radiology Technology, AAS

(CONTINUED)

Division of Health Professions/Natural Sciences

Purpose

The radiology technology program provides students with a complete educational experience for those who wish to become health-care providers. The radiology technology program provides each student opportunities to learn and develop competence in patient care, communication skills, critical thinking, and technical skills that will permit the student to become a Diagnostic Radiologic Technologist. Integrated educational activities include lecture, laboratory activities, case studies, and hands-on clinical training.

Program Mission

Our mission is to provide students with a variety of educational activities and experiences that will prepare them with a level of expertise required to become competent and successful radiographers.

Program Goals

- to produce graduates prepared for entry into the health care field
- to produce graduates who have demonstrated the skills, professional values, and ethics to function as entry-level radiographers
- to produce graduates with the ability to think independently and value lifelong learning
- to produce graduates with the ability to effectively communicate with patients and other health care providers
- to produce graduates prepared for the American Registry of Radiologic Technologist examination

PROGRAM REQUIREMENTS (TOTAL CREDITS - 73)

Prerequisite

BIO 171	Anatomy & Physiology I	4
		4

General Education

CPT 150	Microcomputer Concepts	3
ENG 161	College Writing	3
ENG 162	Technical Commun.	3
MTH 157	College Algebra	3
PSY 160	General Psychology	3
Humanities Elective		3
		18

Major

PHY 125	Physics for Radiology	3
RAD 111	Intro to Rad. Tech., Pat. Care, Pharm. & Pos, I	4
RAD 121	Prin. of Radiologic Image Capture & Display I	3
RAD 131	Prin. of Digital Imaging	3
RAD 141	Pharm, Ethics, Law & Positioning II	4
RAD 146	Clinical Education I	4
RAD 211	Rad. Imaging Equip., QC, IM, Aha. Pro. Bio & Pos. III	4
RAD 215	Clinical Education II	3
RAD 216	Clinical Education IV	4
RAD 221	Radiation Path., Com. Tomo. & Career Sea	3
RAD 226	Clinical Education V	5
RAD 231	Radiology Technology Capstone	1
RAD 255	Clinical Education III	3
		44

Other Required Courses

AlH 122	Medical Terminology	3
BIO 172	Anatomy & Physiology II	4
		7

RECOMMENDED SEQUENCE

Prerequisite	
BIO 171	4
	4
Fall Semester	
ALH 122	3
BIO 172	4
RAD 111	4
RAD 121	3
	14

Spring Semester	
MTH 157	3
PHY 125	3
RAD 131	3
RAD 141	4
RAD 146	4
	17
Summer Semester	
RAD 215	3
RAD 255	3
	6

Fall Semester	
CPT 150	3
ENG 161	3
PSY 160	3
RAD 211	4
RAD 216	4
	17

Semester Semester	
ENG 162	3
RAD 221	3
RAD 226	5
RAD 231	1
Humanities Elective	3
	15

Restaurant/Culinary Management, AAS

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

Restaurant/culinary management is one of the majors comprising the college's Center for Culinary Arts and Hospitality. This curriculum is designed to prepare students for various levels of management positions in the food service industry. In addition to classroom and food laboratory experience, students are required to complete an internship. Students are expected to be well groomed in compliance with standards of sanitation. Uniforms and program tool kit are required for all lab classes. Business attire may be required for some classes. Students will also be required to provide medical proof of good physical health. This program is accredited by the American Culinary Federation Education Foundation Accrediting Commission (ACFEFAC).

Career Opportunities

Graduates of the restaurant/culinary management program may accept positions as: general operations manager, catering manager, restaurant sales representative, restaurant manager, assistant restaurant manager, food service director, assistant food service director, food purchasing agent, party planner, dining room manager, sales and marketing manager, training and development specialist or customer service manager.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- identify the procedures and responsibilities of departmental teams within a foodservice operation
- identify and satisfy diverse customer expectations
- identify, prepare, season and cook according to recipe soups, sauces, salads, meats, fish, poultry, game, vegetables and desserts
- prepare quantity foods with emphasis on food cost controls as part of a production team
- research, evaluate, write and maintain menus; purchase orders; local, regional and international recipes; production schedules and inventories
- research and adhere to sound practices for sanitation and safety
- utilize the high-tech approach to maintain acceptable systems of operation
- research, analyze and apply marketing objectives and strategies to food service operations
- supervise a food service operation team utilizing personal and interpersonal skills

PROGRAM REQUIREMENTS (TOTAL CREDITS — 65/66)

General Education

CPT 150	Microcomputer Concepts	3
ENG 161	College Writing	3
ENG 163	Business Commun.	
or		3
ENG 164	Adv. Composition	
Humanities Elective		
or		3
FSM 170	Food Culture & Religion	
Mathematics Elective		3
Social Science Elective		3
		18

Major

FSM 103	Intro. to Hospitality Ind.	3
FSM 105	Foods I	4
FSM 112	Quantity Foods	4
FSM 113	Customer Service	3
FSM 117	Wait Staff/Din. Rm. Trng.	1
FSM 118	Sanitation	2
FSM 119	Beverage Mgmt.	1
FSM 159	Nutrition	
or		3/4
BKP 243	Healthy Cooking Trends	
FSM 213	A la Carte Kitchen	4
FSM 215	Food Pur. & Menu Mgt.	3
FSM 218	Hospitality Marketing	3
FSM 219	Hospitality Internship	3
FSM 235	Supervision & Trng.	3
		37/38

Other Required Courses

BKP 141	Baking I	4
CUL 135	Speed Scratch Ckg.	3
FSM 157	Catering	3
		10

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

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

Fall Semester	
CPT 150	3
ENG 161	3
FSM 103	3
FSM 105	4
FSM 117	1
FSM 118	2
FSM 119	1
	17

Spring Semester	
BKP 141	4
CUL 135	3
FSM 112	4
FSM 113	3
Mathematics Elective	3
	17

Fall Semester	
ENG 163 or 164	3
FSM 159 or BKP 243	3/4
FSM 213	4
FSM 215	3
Humanities Elective or	
FSM 170	3
	16/17

Spring Semester	
FSM 157	4
FSM 218	3
FSM 219	3
FSM 235	3
Social Science Elective	3
	15

Restaurant/Culinary Management, Diploma

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

Restaurant/culinary management is one of the majors comprising the college's Center for Culinary Arts and Hospitality. The curriculum is designed to prepare students for mid-level of management positions in the food service industry. In addition to classroom and food laboratory experience, students are required to complete an internship. Students are expected to be well groomed in accordance with industry sanitation standards. Uniforms and program tool kit are required for all lab classes. Business attire may be required for some classes. Students will also be required to provide medical proof of good physical health.

Career Opportunities

Graduates of the restaurant culinary management program may accept positions as: general operations manager, catering manager, restaurant sales representative, restaurant manager, assistant restaurant manager, food service director, assistant food service director, food purchasing agent, party planner, dining room manager, sales and marketing manager, training and development specialist or customer service manager.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- identify the procedures and responsibilities of departmental teams within a foodservice operation
- identify and satisfy diverse customer expectations
- prepare, season and cook according to recipe and local, regional and international traditions and diversity: soups, sauces, salads, meats, fish, poultry, game, vegetables and desserts
- prepare quantity foods with emphasis on food cost controls
- research, evaluate and write menus, purchase orders, production schedules and inventories
- demonstrate sanitation and safety
- utilize technology to maintain systems of operation
- analyze and apply marketing objectives and strategies to food service operations
- supervise a food service operation team utilizing personal and interpersonal skills

PROGRAM REQUIREMENTS (TOTAL CREDITS – 32)

General Education	
CPT 150 Microcomputer Concepts	3
	3

Major		
FSM 105	Foods I	4
FSM 112	Quantity Foods	4
FSM 113	Customer Service	3
FSM 117	Wait Staff/Din. Rm. Trng.	1
FSM 118	Sanitation	2
FSM 159	Nutrition	3
FSM 215	Food Pur. & Menu Mgmt.	3
FSM 218	Hospitality Marketing	3
FSM 219	Hospitality Internship	3
FSM 235	Supervision & Trng.	3
		29

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	
FSM 113	3	CPT 150	3	FSM 112	4
FSM 117	1	FSM 105	4	FSM 159	3
FSM 118	2	FSM 219	3	FSM 218	3
FSM 235	3	FSM 215	3		**10**
	9		**13**		

Restaurant/Culinary Management, Certificate

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

Restaurant/culinary management is on the majors comprising the college's Center for Culinary Arts and Hospitality. This curriculum is designed to prepare students for entry levels of management positions in the food service industry. In addition to classroom and food laboratory experience, students are required to complete and internship. Students are expected to be well groomed in accordance with industry sanitation standards. Uniforms and program tool kit are required for all lab classes. Business attire may be required for some classes. Students will also be required to provide medical proof of good physical health.

Career Opportunities

Graduates of the restaurant/culinary management certificate program may accept positions as: sales representative, assistant restaurant manager, assistant food service director, party planner, dining room manager, training and development specialist or customer service representatives.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- identify the procedures and responsibilities of departmental teams within a food service operation
- identify and satisfy diverse customer expectations
- prepare, season and cook according to recipe: soups, sauces, meats, salads, meats, fish, poultry, game, vegetables and desserts
- demonstrate sanitation and safety
- utilize technology to maintain systems of operation
- utilize personal and interpersonal skills as a team member

PROGRAM REQUIREMENTS (TOTAL CREDITS — 19)

General Education		
CPT 150	Microcomputer Concepts	3
		3

Major		
FSM 105	Foods I	4
FSM 113	Customer Service	3
FSM 117	Wait Staff/Din. Rm. Trng.	1
FSM 118	Sanitation	2
FSM 219	Hospitality Internship	3
FSM 235	Supervision & Trng.	3
		16

RECOMMENDED SEQUENCE

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

Fall Semester	
FSM 113	3
FSM 117	1
FSM 118	2
FSM 235	3
	9

Spring Semester	
FSM 105	4
FSM 219	3
CPT 150	3
	10

Robotics Technology, AAS

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

The Robotics Technology program is designed to provide students with the knowledge they need to assist manufacturing, mechanical and electronics engineers in all phases of robotic design, development, production, testing and operations. A new and growing sector, robotics technology develops agile robotics systems to remotely perform complex tasks in dynamic environments.

Career Opportunities

Engineering technology jobs in robotics and automated systems are found in many industries. Graduates of the Robotics Technology program are able to design, troubleshoot, manufacture, maintain and repair robots. These technologists are also involved in the research and design of applications from other science areas for robots to perform. A growing job market is emerging in the defense robotics market. Robotics technicians are also involved in the development of intelligent vehicle highway systems and robotic aids for the handicapped. Robotics technology jobs are also found in the food processing and pharmaceutical industries.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- design agile robotics systems capable of remotely performing complex tasks
- discuss the various roles of a robotics technician in the workforce
- demonstrate the use of electronics in robotics technology
- demonstrate design and use of controllers
- apply agile robotics to engineering processes
- demonstrate the use of C programming as applied to robotics
- apply the characteristics of teaming behavior to agile robotics
- work effectively as part of a technology team
- demonstrate all aspects of project planning and management as applied to agile robotics
- construct an agile robotics project

PROGRAM REQUIREMENTS (TOTAL CREDITS — 63)

General Education

ENG 161	College Writing	3
ENG 162	Technical Comm.	3
MTH 108*	Math for Technologies I	4
PHY 155	College Physics	4
Social Science Elective		3
		17

Major Courses

ELC 106	Circuit Analysis I	4
ELC 107	Circuit Analysis II	4
ELC 114	Digital Techniques	4
ELC 206	Microprocessors	4
MPT 240	Intro to Auto. Manufac.	3
RBT 110	Agile Robotics I	4
RBT 120	Agile Robotics II	4
RBT 210	Robotic Teaming	4
RBT 280	Robotic Sys. Project✦	3
		34

✦*capstone course*

Other Courses

DFT 258	AutoCAD	4
ELC 213	Microprocessor Appli.	4
MTH 109*	Math for Technologies II	4
		12

*Students planning to transfer to a four-year institution should consult their advisor for course substitutions.

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**	
ELC 106	4	ELC 107	4	ELC 206	4	DFT 258	4
ENG 161	3	ELC 114	4	ENG 162	3	ELC 213	4
MTH 108	4	MTH 109	4	PHY 155	4	MPT 240	3
RBT 110	4	RBT 120	4	RBT 210	4	RBT 280	3
	15		**16**		**15**	Social Science Elective	3
							17

Science Technology, AAS

FORENSICS LAB TECHNICIAN OPTION

Division of Health Professions/Natural Sciences

This option of the Science Technology degree is designed to provide students with the skills, knowledge and hands-on experiences to prepare them for work as a forensic sciences technician.

A Forensic Science-Forensic Science Investigator certificate program is also available. See page 122.

Career Opportunities

Graduates of this program can work as crime science technicians, lab technicians, evidence room technicians, or fingerprint identification technicians.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- handle chemicals and biological specimens safely with proper health and environmental considerations
- handle laboratory equipment safely
- perform analytical tests
- collect, identify, classify, and analyze physical evidence related to criminal investigations
- perform tests on weapons or substances, such as fiber, hair, and tissue to determine significance to investigations
- testify as expert witnesses on evidence or crime laboratory techniques
- serve as specialists in an area of expertise, such as fingerprinting, handwriting, or biochemistry
- ensure chain of custody of evidence

PROGRAM REQUIREMENTS (TOTAL CREDITS — 64)

General Education

CPT 150	Microcomputer Conc.	3
ENG 161	College Writing I	3
ENG 162	Technical Comm.	3
MTH 157	College Algebra	3
PHL 161	Intro to Ethics	3
		15

Major

BIO 110	Intro to Forensic Bio	4
BIO 130	Intro to Pathology	4
BIO 160	Intro to Forensic Toxic.	4
BIO 171	A & P I	4
BIO 172	A & P II	4
BIO 265	Microbiology	4
CHM 102	Careers Lab Tech.	1
CHM 120	Chemical & Lab Safety	2
CHM 199	Chemistry Internship I	3
CHM 264	Chem for Health Sci.	4
CRJ 155	Intro to Criminal Just.	3
CRJ 220	Research Methods	3
CRJ 296	Intro to Criminalistics	3
		43

Other Required Courses

ALH 120	Pharmacology	3
MTH 160	Statistics	3
		6

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**	
BIO 110	4	ALH 120	3	BIO 160	4	BIO 265	4
CHM 102	1	BIO 130	4	BIO 172	4	CHM 199	3
CHM 120	2	BIO 171	4	CRJ 155	3	CHM 264	4
CPT 150	3	ENG 162	3	CRJ 220	3	CRJ 296	3
ENG 161	3	MTH 160	3		**14**	PHL 161	3
MTH 157	3		**17**				**17**
	16						

Web Technology, AAS

WEB PUBLISHING OPTION

Division of Computer Technology/Business

The Web Technology Program is designed to provide students with the knowledge needed to design and implement effective, dynamic web sites. Students build static and dynamic web sites utilizing the most current versions of industry standard applications and the scripting and programming languages that drive the web. As sites take on a more important position in the operation of business, from commerce to communication, web publishers play a more significant role in a company's success.

Career Opportunities

Graduates have a range of expertise and interests that determine their selection of occupation within the fields of web design, electronic commerce, web development, web content management, web marketers, technical support and corporate communications.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- plan and create effective, cohesive design solutions using a variety of web communications
- blend web design, computer technology and business commerce expertise for delivery of interactive projects over the Internet
- utilize appropriate scripting technologies to generate dynamic, interactive web pages and perform other server and client-side processing functions
- demonstrate knowledge of Internet-based business strategies of marketing, e-commerce and security
- work effectively as part of an information technology team and provide appropriate web technology support to internal and external clients
- demonstrate academic knowledge required of all graduates including competency in: critical thinking, writing, information literacy, oral communication and quantitative reasoning
- identify the resources necessary to maintain technical skills as electronic commerce continues to evolve

PROGRAM REQUIREMENTS (TOTAL CREDITS — 61)

General Education

CPT 150	Microcomputer Concepts	3
ENG 161	College Writing	3
ENG 162 or	Technical Comm.	
ENG 163	Business Comm.	3
SPC 155 or	Effective Speech	
SPC 156	Interpersonal Comm.	3
Mathematics Elective		3
Social Science Elective		3
		18

Major

CPT 196	Access for Windows	3
CPT 201	Web Content Dvlpmnt.	3
CPT 203	HTML & CSS	3
CPT 206	Javascript	3
CPT 271	PHP and SQL	3
WEB 102	Acrobat Essentials	1
WEB 110	Web Design	3
WEB 140	Dreamweaver - Basic	3
WEB 162	Fireworks	3
WEB 188	Social Media/Business	3
WEB 235	Interactive Design	3
WEB 277	E-Commerce Tech.✦	3
		34

✦*capstone course*

Other Required Courses

GCT 125	Emerging Techs. I	3
MKT 254	Advertising & Promotion	3
OFT 235	Customer Service	3
		9

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**	
CPT 150	3	CPT 196	3	CPT 201	3	MKT 254	3
ENG 161	3	ENG 162 or 163	3	CPT 203	3	SPC 155 or 156	3
GCT 125	3	WEB 162	3	CPT 271	3	WEB 206	3
WEB 110	3	WEB 188	3	OFT 235	3	WEB 277	3
WEB 140	3	WEB 235	3	WEB 102	1	Social Science Elective	3
	15		**15**	Mathematics Elective	3		**15**
					16		

Web Technology, Certificate

WEB APPLICATIONS

Division of Computer Technology/Business

The Web Applications certificate program provides students with the technical and creative skills needed for a quality educational background. Students learn a range of production skills including interface design, motion graphics, web coding, Web graphics, production and interactive design. Students also master industry-standard software and often work in a team-based environment to create content collaboratively. Courses included in this certificate may be applied toward the Web Technology AAS Web Publishing Option.

Career Opportunities

Graduates may find employment as an entry-level web designer with web design and internet companies, and advertising and design agencies.

The Web Applications certificate is available as either a face-to-face or completely online program of study.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- use current software and technology to create web site layouts while applying color theory and graphic design principles
- develop skills for effective oral and written communication, presentation and critical thinking
- demonstrate knowledge of design principles in the creation of images and web pages for the Internet
- demonstrate proficiency in the design, development and administration of web sites to support workplace needs

PROGRAM REQUIREMENTS (TOTAL CREDITS — 16)

CPT 201	Web Content Dvlpmnt.	3
GCT 125	Emerging Techn. I	3
WEB 102	Acrobat Essentials	1
WEB 140	Dreamweaver - Basic	3
WEB 162	Fireworks	3
WEB 235	Interactive Design	3
		16

Web Technology, Certificate

WEB DEVELOPMENT

Division of Computer Technology/Business

The Web Development certificate offers the student exposure to a variety of web page development tools and modern programming languages. Courses included in this certificate may be applied toward the Web Technology AAS Web Publishing Option.

Career Opportunities

Graduates of the Web Development certificate program may find employment as computer programmers, systems analysts, PC technicians, programmer analysts, technical sales representatives, technical support analysts or web developers.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- design and create Internet and intranet-based web solutions
- enhance web sites with interactivity for real-time processing
- identify and correct problems associated with web sites

PROGRAM REQUIREMENTS (TOTAL CREDITS — 18)

CPT 201	Web Content Dvlpmnt.	3
CPT 203	HTML and CSS	3
CPT 206	JavaScript	3
WEB 110	Web Design	3
WEB 188	Social Media/Business	3
WEB 277	E-Commerce Tech.	3
		18

Welding Engineering Technology, AAS

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

Those planning careers in welding need manual dexterity, good hand-eye coordination and good eyesight. They should have the ability to concentrate on detailed work for long periods and be physically able to bend, stoop and work in awkward positions, as well as possess good problem-solving aptitude, shop math skills and exhibit a strong work ethic.

Successful completion of this program of study leads to the associate of applied science degree.

Career Opportunities

Graduates of the welding engineering technology program have obtained jobs with the following titles: welder, welding supervisor, nuclear service technician, QA/QC inspector, QA supervisor, technical sales representative and entrepreneur.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- successfully weld SMAW, GMAW and GTAW in all positions, on various materials, with or without joint preparation
- read, interpret and create blueprints
- make sound decisions in design and manufacturing of welded fabrications/assemblies based on the following: joint design, welding equipment, metallurgy, material application
- communicate technical information effectively, demonstrate accurate record keeping and utilize technical reference materials
- identify defects by use of DT/NDT methods
- maintain and troubleshoot welding, industrial and plant equipment

PROGRAM REQUIREMENTS (TOTAL CREDITS — 63)

General Education

CHM 107	Intro Concepts in Chem. I	4
DFT 258	AutoCAd	4
ENG 161	College Writing	3
ENG 162 or	Technical Commun.	
ENG 163 or	Business Commun.	3
ENG 164	Advanced Composition	
MTH 108*	Math for the Tech. I	4
Social Science Elective		3
		21

Major

WEL 125	Welding I	4
WEL 135	Welding II	4
WEL 207	Advanced Welding I	4
WEL 208	Advanced Welding II	4
WEL 209	Industrial Maintenance	3
WEL 220	Inspec. of Code Weld Spcs.	3
WEL 221	Metal Fabrication	4
WEL 222	Fund. of Aluminum	3
WEL 224	Materials Evaluation	3
		32

Other Required Courses

DFT 110	Blueprint Reading	2
MET 105	Welding Metallurgy	4
PHY 107	Applied Physics	4
		10

*Students planning to transfer to a four-year institution should consult their advisor for course substitutions.

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**	
DFT 110	2	CHM 107	4	DFT 258	4	WEL 208	4
ENG 161	3	ENG 162, 163 or 164	3	MET 105	4	WEL 209	3
MTH 108	4	WEL 135	4	PHY 107	4	WEL 224	3
WEL 125	4	Social Science Elective	3	WEL 207	4	WEL 221	4
WEL 220	3		**14**		**16**	WEL 222	3
	16						**17**

Welding Engineering Technology, Certificate

Division of Workforce Development/Technologies/Culinary Arts/Physical Sciences/Horticulture

The welding certificate program is a short-term program option that provides students with entry level training for work in welding and flame cutting occupations. Welding 125 and Welding 135 emphasize skill development as well as applied theory and oxy-fuel cutting and shield metal arc welding. Metallurgy and technical drafting courses round out the program of study by emphasizing metal properties, weldability and understanding detail and assembly work drawings. All credits earned can be applied toward the requirements of the degree program in welding engineering technology.

Program Learning Outcomes

This curriculum is designed to prepare students to:

- accurately perform oxy-fuel and plasma cutting
- SMAW in all positions using various electrodes
- weld and fabricate to blueprint specifications

PROGRAM REQUIREMENTS (TOTAL CREDITS — 24)

DFT 110	Blueprint Reading	2
MET 105	Welding Metallurgy	4
WEL 125	Welding I	4
WEL 135	Welding II	4
WEL 209	Industrial Maintenance	3
WEL 220	Inspec. of Code Wld. Spcs.	3
WEL 221	Metal Fabrication	4
		24

RECOMMENDED SEQUENCE

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

Fall Semester		**Spring Semester**	
DFT 110	2	WEL 135	4
MET 105	4	WEL 209	3
WEL 125	4	WEL 221	4
WEL 220	3		**11**
	13		

COURSE DESCRIPTIONS

Index of Courses

COURSE DESCRIPTIONS
Index of Courses

All academic courses offered by WCCC are listed below. Course numbers, titles and descriptions are WCCC designations. Courses numbered below 100 may not be used to meet degree requirements. The numbers at the far right of each course title indicate the number of lecture hours per week, lab hours per week and credits per semester.

Example: 3-0-3

3 — lecture hours per week
0 — lab hours per week
3 — course credits

All courses are identified alphabetically by a three-letter program code followed by a three-digit numerical course code. The first digit in the numerical code classifies the course as follows:

0 indicates a developmental course. Developmental courses carry no quality points and may not be used to meet degree requirements.

1 indicates a course which is normally required in the freshman year of study.

2 indicates a course which is normally required in the sophomore year of study.

Students should note that many courses have prerequisites and/or corequisites which must be met before registration.

A prerequisite is a course that must be successfully completed prior to registration.

A corequisite is a course that must either be successfully completed prior to registration or must be taken during the same semester.

ACC–ACCOUNTING

ACC 105—FINANCIAL RECORDKEEPING 3-0-3
Introduces accounting and recordkeeping practices for a service enterprise and a merchandising concern. Emphasis is on analyzing and recording financial transactions and preparing financial statements. Not open to accounting and computer technology majors.

ACC 120—QUICKBOOKS 1-0-1
This course covers small business accounting using QuickBooks software. Topics include creating a chart of accounts, recording customer and vendor transactions, and printing reports. In addition, students will set-up a new company and learn to export financial data to Excel.

ACC 155—ACCOUNTING I 3-0-3
Introduces accounting principles and practices, primarily in the context of the sole proprietorship form of business. Emphasis is on analyzing and recording financial transactions and summarizing their effects through the preparation of financial statements. Both the merchandising and service enterprises are examined. Major topics include deferrals and accruals, inventories, plant and intangible assets, cash and receivables, and partnerships. Prerequisite(s): MTH 052 or satisfactory placement test score

ACC 156—ACCOUNTING II 3-0-3
Continuation of Accounting I. Topics covered include: corporations, cash flow statements, financial statement analysis, managerial accounting concepts, job order costing, process costing, C-V-P analysis, budgetary planning and control, and incremental analysis for decision making. Prerequisite(s): ACC 155

ACC 165—ACCOUNTING FOR MANAGERS 3-0-3
This course is designed to provide business and management majors with the ability to read, understand, and use accounting information for making decisions. Topics covered include: the business environment; cost concepts and allocation costing systems; activity-based systems; cost behavior analysis; profit planning; variance analysis; performance measurement; short- and long-term decision making; quality management; and financial statement analysis. Prerequisite(s): BUS 120

ACC 199—INTERNSHIP IN ACCOUNTING 3-0-3
Students gain exposure and insight to the accounting industry through supervised and evaluated on-the-job experience. Students select locations for internships from instructor-approved sites which encompass Southwestern Pennsylvania. Seminars are conducted weekly for students to discuss their experiences. Transportation to off-campus locations is the responsibility of students. Prerequisite: Completion of 30 credits in major course requirements.

ACC 219—MANAGERIAL ACCOUNTING 3-0-3
Interpretation and use of accounting information by management for planning, controlling, decision-making and performance evaluation. Topics covered include cost-volume-profit analysis; operational and financial budgeting; short-term decision-making; capital budgeting; performance evaluation and quantitative methods. Microcomputers will be utilized for problem solving. Prerequisite(s): ACC 156

ACC 222—PRINCIPLES OF AUDITING 3-0-3
This course emphasizes the learning of basic auditing concepts such as risk, control, evidence, and objectivity and important relationships among these concepts. It introduces the student to generally accepted auditing standards, professional ethics, and legal liability. A conceptual theory of auditing is discussed and practical examples of auditing techniques and work programs are used to illustrate the application of theory. The course also covers the auditor's reporting standards. Prerequisite(s) ACC 156

ACC 230—INTEGRATED ACCOUNTING SOFTWARE 3-0-3
Uses a fully integrated accounting software system to set up, manipulate and maintain accounting records. Includes modules covering receivables, payables, inventory, payroll and the general ledger. Prerequisite(s): ACC 155

ACC 234—PAYROLL & SPREADSHEET SOFTWARE 3-0-3
A study of the skills required of a full-charge bookkeeper. Emphasis is on detailed preparation of a complete payroll system, including study of laws, regulations, tax return preparation and fringe benefits. Extensive use of computerized payroll system. May lead to possible certification as a payroll professional. Students will also complete comprehensive computerized general ledger packages from initial recording through year-end procedures and financial statements.

ACC 250—PRINCIPLES OF TAXATION 3-0-3
An introduction to the federal income tax as it applies to individuals. Topics covered include: conceptual framework, tax determination, inclusions and exclusions, deductions and credits, personal and business expenses including depreciation, loss limitations and property transactions. Prerequisite(s): ACC 155

ACC 251—CORPORATE TAXATION 3-0-3
Covers tax reporting for partnerships and S Corporations, as well as taxation of C Corporations and fiduciaries. Also included is an overview of federal estate gift taxes. The use of microcomputers in the preparation of individual tax returns is an integral part of this course. Prerequisite(s): ACC 250

ACC 255—INTERMEDIATE ACCOUNTING I 3-0-3
Examines the theory and concepts underlying the mechanics of accounting, including a review of the accounting process. Topics covered include: conceptual framework; income statement; balance sheet; cash flow statement; revenue recognition; cash and receivables; inventories-cost and estimation; plant and intangible assets-acquisition, use and retirement. Prerequisite(s): ACC 156

ACC 256—INTERMEDIATE ACCOUNTING II 3-0-3
Continuation of Intermediate Accounting I. Topics covered include: debt financing; equity financing; long- term investments; leases; pensions; income taxes; contingencies; business segments; accounting changes and error analysis; earnings per share. Prerequisite(s): ACC 156

ACC 260—ADVANCED ACCOUNTING ISSUES 3-0-3
This course refines and integrates those issues identified in various accounting courses into one comprehensive unit. Emphasis is shifted from "preparation" to "analysis." The core concept is to teach students to make decisions in uncertain and complex situations. Focus is on critical thinking, research skills and identifying answers to complex questions. Business values and ethics are a vital component of all decisions and are explored in this course. This capstone course encompasses all of the student outcomes found in each of the program's courses. Prerequisite(s): ACC 255 or ACC 256

ALH–ALLIED HEALTH

ALH 110—BASIC LIFE SUPPORT FOR THE HEALTH CARE PROVIDER 1-0-1
This course in Basic Life Support for the Health Care Providers provides the student with core materials for one- and two-rescuer adult cardiopulmonary resuscitation (CPR), foreign body airway obstruction management, pediatric resuscitation and automated external defibrillator. The targeted audience for this program is the healthcare provider, students entering the healthcare field, also EMS personnel, physician assistants, doctors, dentists, nurses and respiratory therapists who are required a credential (card) documenting successful completion of a CPR course. A written exam and skills testing is required for successful course completion. Tuition does not include textbook. Students receive certification from the American Heart Association. This course also includes background information about heart disease, risk factors, heart and lung function, current prevention advice and healthy living principles.

ALH 120—PHARMACOLOGY 3-0-3
Introduces the student to current concepts in pharmacology, including basic drug actions, indications and contraindications for drug therapy, toxicity, side effects and safe therapeutic ranges.

ALH 122—MEDICAL TERMINOLOGY 3-0-3
Studies definitions of medical terms. Greek and Latin word roots, prefixes and suffixes. Emphasis on application of terminology in specialized areas such as cardiology, urology, etc. Also includes discussion of the human element, medical laws and equipment, and methods.

ARC–ARCHITECTURE

ARC 101 - BUILDING MATERIALS & ESTIMATING 3-0-3
Surveys building materials and characteristics used in the construction industry. Course also covers various construction techniques, principles and cost estimating.

ARC 102—CONTRACTS AND SPECIFICATIONS 3-0-3
Covers the basic principles of written contracts and their format. Topics include specifications, language, techniques, bidding and contract responsibilities. Study of building codes and building applications for various types of structures.

ARC 105—ARCHITECTURAL DRAFTING I 2-4-4
Provides a practical approach as it relates to current common architectural drafting standard practices. The principle objectives are basic understanding of orthographic projection, size description and notation. National and local building codes are introduced.

ARC 106—ARCHITECTURAL DRAFTING II 2-4-4
Provides students with more advanced drafting techniques and competencies by applying information about building components to draw detailed sets of architectural construction drawings and improve perception and awareness of problems related to design and building code requirements. Prerequisite(s): ARC 105

ARC 119—INTRODUCTION TO SURVEYING 2-2-3
Study includes linear measurements with tape; differential leveling and vertical control measurements; vertical angles with transit; closed traverse work utilizing bearing, azimuth and deflection methods; use of coordinate systems, computation of areas; stadia and topographic surveying. Bench mark and profile leveling for computation and data for application of cut and fill requirements in road or development construction will also be covered. Prerequisite(s): MTH 108

ARC 199—ARCHITECTURAL DRAFTING AND DESIGN INTERNSHIP 1-12-3
Students will obtain experience in the architectural drafting and design field through a combination of occupational instruction and on-the-job training. This course integrates classroom occupational study with a planned supervised practical work experience. Prerequisite(s): Permission of instructor

ARC 210—ARCHITECTURAL AUTOCAD I 2-4-4
The study of architectural drawing, detailing and illustration through the assimilation of computer software. (Most current version of AutoCAD will be used.)

ARC 211—ARCHITECTURAL AUTOCAD II 2-4-4
A continuation of ARC 210. This course teaches advanced drawing and editing commands that may be used to create 2D architectural drawings. Ordinate dimensions, drawing/plotting scales, symbols/block usage, attributes, Xreferences and paper space applications are covered. (Most current version of AutoCAD and 3D parametric modeling software will be used. Prerequisite(s): ARC 210

ARC 215—ARCHITECTURAL PRESENTATION 2-4-4
Students will develop and deliver a presentation on a specific project approved by their instructor. Coordination of previous skills on independent projects utilizing manual drafting and computer graphics software for model building and design. (Most current version of AutoCAD will be used.) Prerequisite(s): ARC 210

ARC 262—PIPING, STRUCTURAL DETAILING AND ELECTROMECHANICAL DRAFTING 2-4-4
AutoCAD application course that will include piping, structural detailing, electromechanical details, and working drawings. The student will experience more complicated problems in this course, and will coordinate previous skills for the graphical solutions. (Most current version of AutoCAD will be used.) Prerequisite(s): ARC 210 or DFT 258

ART–ART

ART 140—ILLUSTRATION 1-4-3
Introduction to contemporary illustration techniques and the techniques of noted illustrators. Enables students to develop a sense of illustrative image creation so that formal and technical elements such as composition, color and background, can work together to create editorial or narrative impact. Focuses on trends and styles of advertising, with emphasis on working with an art director, deadlines, reproduction requirements and professional attitudes. Technical concerns as well as aesthetic and legal aspects are covered.

ART 142—TYPOGRAPHY 1-4-3
Introduction to and exploration of signage design, principles and layouts. Develops and promotes creative problem-solving techniques for corporate and retail identity. Students incorporate design ideas, conceptual thinking, typographic elements, color usage and various imaging techniques. Assignments demonstrate visual solutions for realistic design problems, with emphasis on traditional as well as computer-based solutions. Technical concerns and compatibility across Macintosh and Windows platforms as well as aesthetic and legal aspects are covered.

ART 143—PRINTMAKING 1-4-3
This course provides a basic introduction to the field of printmaking through its historic and contemporary technological forms and function. It will explore the potential with the variant and edition print as discovered through relief, intaglio, lithography and screen printing processes. It will introduce an analysis of paper, print matrix, inks and the related field of paper and bookmaking. Students will examine the role of the hand-printed image, the digital reproduction and the rich hybrid between these methodologies.

ART 155—INTRODUCTION TO ART HISTORY 3-0-3
Surveys the history and stylistic development of the visual arts. The student is introduced to the process of formal, compositional analysis as it relates to content and historical context, as well as the changing role of art and artist in culture.

ART 156—WORLD ART SURVEY 3-0-3
This survey course exams the function, form, construction and context of objects created in the non-western cultures of Africa, Western and Central Asia, India and Southeast Asia, China, Japan and Korea, the Pacific and the Americas, and establish how art objects are an unconscious representation of a culture's ideology. The arts of these areas will be examined from an anthropological approach with particular attention to the dynamic reasons for cross-fertilization of iconography, material and methodologies. Content will be explored primarily in a chronological and geographic framework.

ART 157—INTRODUCTION TO CONTEMPORARY ART 3-0-3
This course examines contemporary art from 1960s to the present. It examines the fundamental framework and critical ideas that have been documented in recent art history. It explores the major changes in the perception and function in art as it is made, where it is presented, the role of the audience and how the work is historically recorded. Rather than a chronological approach, history will be unraveled. This is achieved by examining works to discover information from external observation and basic art language. Links will then be drawn between what has been observed and what has preceded the work to reveal how ideas have been reinforced or challenged.

ART 158—AMERICAN ART 3-0-3
This course introduces the student to the historical and cultural context of American painting, sculpture, architecture and decorative arts. In addition to the history and progression of art of the United States, students will examine the role Pennsylvania artists have played in the history of American art.

ART 159—HISTORY OF GRAPHIC DESIGN 3-0-3
This is course spans the first impulses of visual mark-making and symbolic expression to current streams of thought and changes in the graphic design profession. While technology has changed drastically through the years, the basic principles of visual communication are still relevant. The approach is to demonstrate the links between graphic works and the social forces and conditions of their production. Knowing this history gives insights to the reasoning, meaning and critical knowledge to understand the expanding field of graphic professions. This course will be offered online.

ART 160—2-D DESIGN 1-4-3
Two-dimensional visual art principles will be discovered through the components of problem- solving art applications, lectures and critiques. An important aspect of this course investigates the history and theory of basic design principles as the primary language of visual thinking.

ART 161—3-D DESIGN 1-4-3
The basic elements and principles of design are implemented to create three-dimensional projects. Issues of volume, space, fabrication and construction with a variety of materials are applied to design problem-solving. Students explore three-dimensional space in relation to degree of depth from wall-relief to free-standing forms, and investigate the history and theory of spatial design principles. Prerequisite(s): ART 160 or permission of instructor

ART 162—DRAWING I 1-4-3
As the most fundamental of art skills, students will learn to think visually and imaginatively. Drawing from observation is stressed through a sequence of basic rendering techniques, which include the study of spatial relationship structure, light and shadow, linear perspective, proportion and composition.

ART 163—DRAWING II 1-4-3
Students will learn to render more complex forms and conceive more dynamic responses to a range of drawing issues. Through rendering the skeletal structure, as well as exploration of materials and techniques, students will learn the basic foundation of figure drawing, enriched by lectures on art historical depictions, and the role of drawing in traditional and contemporary art. Prerequisite(s): Art 162 or permission of instructor

ART 165—PAINTING I 1-4-3
As an introduction, oil paint is the medium of choice with which students will learn the basic properties of the painters' materials, including canvas stretching and preparation. The painters' craft is stressed with color mixing and application. Within a sequence of painting problems, students reinforce their visual vocabulary by painting from observation, to prime the beginner for more interpretive, imaginative subject matter. Prerequisite(s): ART 162 or permission of instructor

ART 166—PAINTING II 1-4-3
As an intermediate level course, Painting II will focus on pictorial space, form and individual exploration of ideas, and grounded in a fundamental understanding of the painting medium. The basics of the idea-development will be studied while refining and experimenting with techniques and materials. Students will learn how to execute a series as the first step to creating body of work. An exploration of historical and contemporary paintings and artists will be offered to enhance strategies for generating ideas. Prerequisite(s): ART 165 or permission of instructor

ART 183—BOOK ARTS I 1-4-3
This course is an introduction to the materials and techniques used in creating artist's books. Lectures and demonstrations will include hand papermaking, sheet formation, paper grain and applications for book arts. Paper will be used in creating signature binding, book design, new and alternative book forms, and container construction. In addition to lectures and discussions, students will actively learn historical and contemporary binding methods. Well conceived and crafted books will be assigned to correspond with each section. Students will analyze and discuss work in progress within a group critique. Each student will produce unique books as well as small editions. Books will employ handmade paper and construction will include mock up, title, colophon page, and will be signed. The popularity of recycled materials in the field of contemporary book arts will be explored.

ART 185—CLAY I-FOUNDATION CERAMICS 1-4-3
This course introduces students to ideas and methods used in the contemporary field of ceramic object-making and provides the basic skills required to creatively express his or her ideas in clay. Projects are designed to have students consider clay for both its fine art and design potential. Students will be introduced to traditional methods of hand-building and throwing on the potter's wheel and address idea development. Projects will cover different approaches to clay forming, wheel throwing and finishing techniques. Pinching, coil building and slab construction will be included. Students will become familiar with the firing process and basic glaze and slip surface treatments. Issues in historical and contemporary ceramics will be discussed. (Touchstone location only)

ART 188—TEXTILES I **1-4-3**
An investigation of the cultural and aesthetic development of fibers and textiles from its ancient beginning will explore fabric dying, batiking, weaving and knotting formation. Pattern designs will include screen and combination. An exploration of new formulations will include recycling materials to create unique yardage.

ART 285—PORTFOLIO I **1-4-3**
This course is designed to prepare a student's work for acceptance into advanced programs of art and/or professional, competitive employment presentations. The student will be provided with a fundamental set of skills that will be used throughout their developing careers. Self-promotional tools will include: assessing and defining goals, writing an artist statement and/or career philosophy, documentation, presentation and organization of original studio work, resume and personal web page development. Students are required to enter at least one art competition or graphic publication, locate desirable job descriptions, and participate in a series of mock interviews, designed to hone skills for professional presentation.

ART 286—PORTFOLIO II **1-4-3**
This course is designed as a capstone experience for the art student to develop and execute a professional gallery exhibition and/or develop a professional artisan product line. Students are required to develop a timeline task to execute the exhibition, design promotional materials and coordinate with appropriate offices through cultural programming to execute the show, work with the gallery manager to professionally calculate and hang work, design lighting and exhibition cohesion, present a public artist statement and document work.

ATH–ART THERAPY

ATH 175—EXPRESSIVE THERAPIES **1-4-3**
This course is designed as a survey of the use of creative expression in the practice of therapy. Creative theories will be examined in relation to learning, problem-solving and psychological health. Students explore various expressive modalities, how those methods engage personal growth and self-expression and the necessity of these qualities in psychological recovery. The expressive arts explore visual art, music, dance, drama, writing and other creative processes to encourage self-expression and healing for personal and community benefit. This course will explore how the arts are used in various setting such as hospitals, community organizations, mental health services, as well as educational environments.

ATH 176—INTRODUCTON TO VISUAL ART THERAPY **1-4-3**
This course examines the theory, development and practice of art therapy and the role of self-expression in the process of both personal and communal healing. Students will explore the creative process of visual art and its relationship to the psychological and emotional self. Through various visual art methods and materials, students will investigate the role of self-expression toward personal growth. Students will discover sources of imagery and symbolic language from two perspectives: as creator and viewer, and link the benefits of creative expression to psychological health that have implications for specific local communities as well as the overall health of the community at large.

ASL–AMERICAN SIGN LANGUAGE

ASL 101—AMERICAN SIGN LANGUAGE I **3-0-3**
American Sign Language I is an introduction to the language used by members of the deaf community in the United States. This course focuses on conversation in signs, basic rules of grammar and cultural aspects of the deaf community.

ASL 102—AMERICAN SIGN LANGUAGE II **3-0-3**
As the continuation of basic American Sign Language and culture study, this course furthers learners' ability to describe and discuss everyday matters and situations in a culturally appropriate manner. The focus of this course remains on conversation in signs, basic rules of grammar, and cultural aspects of the deaf community. Additional vocabulary, more complex grammatical principles, and communicative strategies which assist the deaf listeners are presented. Prerequisite(s): ASL 101

ASL 201—AMERICAN SIGN LANGUAGE III **3-0-3**
American Sign Language III is an upper intermediate level course that builds on ASL II, and it is designed to develop the student's ability to master the semantics of ASL. The focus will be on the skills and knowledge necessary to effectively translate passages from either spoken or written English into American Sign Language. Student production skills will be evaluated via videotape. Students will also be required to attend Deaf events and be involved in the Deaf Community.

BIO–BIOLOGY

BIO 107—HUMAN BIOLOGY **3-0-3**
This course explores the basic structure and function of the human body. All organ systems will be studied; including the integumentary, skeletal, muscular, nervous, endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary and reproductive systems. Selected disorders and the anatomical and physiological relationships to the body will be discussed. Biological terms and meanings of appropriate terms are emphasized along with the relationships between the various organ systems in both health and disease.

BIO 110—INTRODUCTION TO FORENSIC BIOLOGY **4-0-4**
A survey of the biological aspects of forensic science, the mechanisms leading to death and the analysis of biological evidence from crime scenes. Includes discussion of topics including the cause and manner of death, body decomposition, assessment of time of death, trauma, natural disease processes, the effects of environmental stressors and multidisciplinary approaches to evidence analysis. Crime laboratory topics to be discussed include toxicology, DNA evidence, biometrics (e.g. fingerprinting), drug metabolism, ballistic trauma and other related issues. Forensic autopsy will also be discussed as it relates to biological evidence.

BIO 120—ENVIRONMENTAL ISSUES **3-0-3**
Assesses man's impact upon the natural world by reviewing a number of current environmental problems. Topics include ozone depletion, the greenhouse effect, habitat destruction and over population. Basic ecological concepts such as food chains, food webs, cycling of materials and energy flow through an ecosystem, and productivity will also be emphasized.

BIO 130—INTRODUCTION TO FORENSIC PATHOLOGY **4-0-4**
A survey of disease processes of the human body as they relate to biological forensic evidence. The basic mechanisms of infection, cancer, trauma, blood clotting, hemorrhage and related topics will be discussed along with their importance to forensic investigation, crime scene assessment and autopsy findings. Significant disease processes of the heart, lungs, liver, kidneys, brain, muscles, bones, and other organs are explained and analyzed to allow an understanding of their effects on the human body and how they relate to death.

BIO 145—GENERAL BOTANY **3-2-4**
Studies the morphology, anatomy, physiology, life cycles, genetics, taxonomy, and evolution of representative non-vascular and vascular plants with emphasis on the local flora.

BIO 155—GENERAL BIOLOGY I **3-2-4**
Introduces biology as a science that deals with fundamental concepts and processes common to all living organisms. Topics considered include basic ecological principles, evolution, biological chemistry, cell structure and function, cellular respiration and photosynthesis.

BIO 156—GENERAL BIOLOGY II **3-2-4**
Sequel to General Biology I (BIO 155). Includes study of mitosis meiosis, Mendelian/neoMendelian/molecular genetics and deals with the diversity of organisms and their life processes. Prerequisite(s): BIO 155

BIO 160—INTRODUCTION TO FORENSIC TOXICOLOGY—Poisons, Drugs, and Death **4-0-4**
A survey of the effects of poisons, drugs, heavy metals, venoms, carbon monoxide, and other toxic substances on the human body as it relates to forensic science and investigation. The mechanisms leading to toxicologic-related deaths and the biological effects of various substances on the organs of the human body are assessed. Includes discussion of topics such as the cause and manner of drug-related deaths, obtaining toxicological evidence after decomposition of the body, assessment of the time that drugs remain in the human body, effects of toxic substances on organs.

BIO 171—ANATOMY AND PHYSIOLOGY I **3-2-4**
This is the first course in a two-semester sequence that explores the structure and function of the human body and mechanisms for maintaining homeostasis within the body. Topics include basic organic chemistry, cells, tissues and the following organ systems: integumentary, skeletal, muscular, nervous and endocrine. Also discussed will be interactions between systems as well as selected diseases and the disorders and their relationship to typical anatomy and physiology. Prerequisite(s): CHM 107, CHM 155, CHM 264 or high school chemistry and ENG 095 or a satisfactory Placement Test score.

BIO 172—ANATOMY AND PHYSIOLOGY II **3-2-4**
This is a continuation of Anatomy and Physiology I. Students will continue to explore the structure and function of the human body and mechanisms for maintaining homeostasis within the body. Topics include the cardiovascular, respiratory, lymphatic, digestive, urinary and reproductive systems. Also discussed will be interactions between systems as well as selected diseases and disorders and their relationship to typical anatomy and physiology. Prerequisite(s): BIO 171 with a "C" grade or better.

BIO 210—ZOOLOGY **3-2-4**
This course introduces students to the science of animals. It presents a survey of the animal kingdom with emphasis on diversity, evolutionary relationships, phylum characteristics, functional adaptation, and environmental interaction. This course is appropriate for science majors and nonscience majors alike.

BIO 265—MICROBIOLOGY **3-3-4**
Deals with microbial organisms in general by surveying the history, methods and nature of microbiology. Bacteria and viruses are discussed in greater depth, particularly those that cause human disease. Also covered is the beneficial role played by microbes. Prerequisite(s): BIO 155 or BIO 171 and CHM 107, CHM 155, CHM 264 or high school chemistry, RDG 080 or satisfactory Placement Test score

BIO 275—BIOCHEMISTRY **3-3-4**
This course is a general study of the chemistry of biomolecules. It will present the conformation and function of enzymes and other proteins, carbohydrates and lipids, and cell membranes, channels, pumps, and receptors. The methods of producing and storing energy through glycolysis and gluconeogenesis, the citric acid cycle, photosynthesis, and the metabolism of glycogen, fatty acids and lipids, and nitrogen-containing molecules will be examined. A brief discussion of the chemistry of genes and chromosomes, DNA and RNA metabolism, and regulation of gene expression will conclude the semester. Prerequisite(s): CHM 108 or CHM 250 or CHM 264

BIO 285—MOLECULAR GENETICS **3-3-4**
Although the course begins with an introduction to heredity and classical Mendelian genetics, this material will emphasize current ideas in molecular biology including the transfer and expression of genetic information, the interaction and hybridization of genes, and molecular mutagens. The course will focus on the transmission and expression of genetic information, predominantly through eukaryotic molecular genetics. Prokaryotic molecular genetics and the variations from the eukaryotic model will also be discussed. The structure and function of the genetic material at the molecular level, replication and repair of the genetic material, and the regulation and expression of genetic information will be considered. Prerequisite(s): BIO 110, BIO 155, BIO 171 or BIO 210

BKP–BAKING AND PASTRY

BKP 141—BAKING I **2-4-4**
The student learns the fundamentals of baking which involves preparation of yeast rolls, breads, pies, cakes, cookies tarts and doughnuts. The properties of baking ingredients, use and care of commercial bake shop equipment, and storage and sanitation of baked products are studied. Uniforms and program tool kit are required.

BKP 142—BAKING II **1-4-3**
A second-level course focusing on the study and preparation of advanced breads, pastries, cakes and desserts. Laboratory preparation is coordinated with related studies in the classroom. Uniforms and program tool kit are required. Prerequisite(s): BKP 141

BKP 144—BAKING III **1-4-3**
Provides the student with experience in the study and preparation of advanced pastries, cakes, pies and tortes. Students are also introduced to Artisan and decorative breads. Emphasis is placed on introducing the student to the most up-to-date products and technologies available. Uniforms and program tool kit are required. Prerequisite(s): BKP 142

BKP 242—BAKERY/DELI MERCHANDISING TECHNIQUES **1-4-3**
Study of baking techniques involving merchandising, salesmanship, product presentation, maintenance of product, product evaluation, labeling requirements and product identification. Uniforms and program tool kit are required. Prerequisite(s): BKP 141

BKP 243—HEALTHY COOKING TRENDS **2-4-4**
Allows students to research current nutritional recommendations and produce recipes which reflect sodium reduction, sugar substitution, fat replacement and other nutritional concerns. Nutritional labeling requirements are also investigated. Uniforms and program tool kit are required. Prerequisite(s): FSM 105

BKP 245—DECORATING TECHNIQUES **1-4-3**
Emphasizes the application of design principles to the art of decorating cakes, petit fours, centerpieces, confectionery and specialty pastry items. Uniforms and program tool kit are required.

BKP 247—SPECIALTY/ARTISTIC TECHNIQUES **2-4-4**
Involves the student in the study and preparation of advanced hot and cold specialty dessert items. Emphasis is placed on both classical and contemporary dishes. Students are also provided with the knowledge and understanding of the utilization of artistic principles to effect chocolate and sugar work for consumption and display. Uniforms and program tool kit are required. Prerequisite(s): BKP 142

BKP 249—ADVANCED DECORATING TECHNIQUES **1-4-3**
Emphasizes advanced decorating techniques. Design cakes using advanced techniques which are appropriate to the theme, occasion and level of formality. Utilizes principles of sanitation and safety in decorative work and design. Evaluate final products based on artistic design principles, uniformity and neatness. Develop a level of professional proficiency in advanced decorating techniques. Uniforms and program tool kit are required. Prerequisite(s): BKP 245

BUS–BUSINESS

BUS 120—MATHEMATICS OF BUSINESS **3-0-3**
Provides a basic knowledge and skill in the calculations necessary for a business career, including trade discounts, commissions, sales, payrolls, statistics, depreciation, interest, insurance, annuities, investment, credit and taxes. Prerequisite(s): MTH 052 or satisfactory placement test score

BUS 140—INTRODUCTION TO BUSINESS **3-0-3**
Survey of the structure of business, its principle activities and typical problems. The course is designed to provide the student with a working knowledge of business terminology. It covers such facets of business as ownership, management, marketing, purchasing, production, human resources, finance, accounting and government regulation.

BUS 158—PRINCIPLES OF MANAGEMENT 3-0-3
Theory and principles of organization and management with an emphasis on the management processes of planning, organizing, leading, controlling, and the business functions, concepts, and applications related to the manager's role in a decision-making environment.

BUS 188—SOCIAL MEDIA IN BUSINESS 3-0-3
This course examines the current trends in social media and how these popular Internet-based social networking sites can be a powerful marketing tool for businesses and organizations. Through a combination of selected readings and hands-on projects, students will learn which prominent social media tools are best suited for various businesses and organizations in order to maintain a current online profile. Upon completion of the course, students will have the knowledge to develop a basic social media marketing plan for businesses or organization.

BUS 199—INTERNSHIP 3-0-3
A coordinated period of supervised work experience in organizations that will offer students the opportunity to acquire competence in their chosen area of specialization. Prerequisite:(s) Permission of instructor

BUS 205—BUSINESS LAW 3-0-3
Basic principles of law applicable to business action including sources of law, adversary system, crimes, torts, negligence, strict liability, common law essentials of contract law and basic general legal principles.

BUS 240—TECHNIQUES OF SELLING 3-0-3
Retail, wholesale and specialty selling with emphasis on mastering and applying the fundamentals of selling. Sales presentations are required.

BUS 241—HUMAN RESOURCE MANAGEMENT 3-0-3
Considers the role of human resource management as it relates to recruiting and selection procedures, equal employment opportunity orientation and training. Emphasis is placed on performance appraisals, job evaluations and the motivation of employees.

BUS 244—BUSINESS STATISTICS 3-0-3
Principles of statistics as applied to business problems. Presentation and analysis of quantitative data in tabular forms; frequency distributions; measures of central tendency and dispersion; probability theory; sampling; tests of significance and regression analysis. It is advised that students have a background in algebra. Prerequisite(s): MTH 052 or satisfactory Placement Test score

BUS 245—PRINCIPLES OF MARKETING 3-0-3
Principles and functions of marketing. Topics include: marketing research, target marketing, marketing segmentation and marketing-mix strategies. Special emphasis is placed on topics such as: product, pricing, distribution and promotion decisions.

BUS 249—LABOR RELATIONS 3-0-3
Relation of management theory and the viewpoints of the behavioral science to problems of managing people in both union and non-union environments. Topics included are labor relations, contract negotiations, administration, collective bargaining and grievance arbitration.

BUS 250—CALCULUS FOR BUSINESS 3-0-3
This course is an introduction to the differential and integral calculus used in understanding and solving problems arising in business and economics. Topics include: limits, differentiation, integration, Taylor series approximations, optimizing functions and constrained optimization, probability and statistics and the Fundamental Theorem of Calculus. Calculus will be applied to real world business and economic applications. Prerequisite(s): MTH 157

BUS 258—SUPERVISORY MANAGEMENT 3-0-3
Investigates techniques of leadership including the motivation and the creation of incentives for others to follow. The focus will be to improve decision making at work through increased knowledge pertaining to internal and external environmental forces. A new philosophy regarding the supervisor's role regarding work assignments and control of employees is developed in this course.

BUS 260—SMALL BUSINESS MANAGEMENT 3-0-3
Pertains to the organization and operation of small enterprises in all types of business: merchandising (both retailing and wholesaling), manufacturing and contract construction and the service trades. Topics include: organizational structure and staffing, equipment leasing, capital budgeting, financial leverage and taxation for the small business enterprise. Designed to aid individuals who are seriously considering going into their own business, as well as owners/managers who desire to increase their knowledge of modern small business operation.

BUS 262—EFFECTIVE ENTREPRENEURSHIP 3-0-3
A practically oriented course focusing on the development of an entrepreneurial venture from idea generation to the opening and operation of a business. Topics include creativity, target market identification, marketing/financial planning, decision-making, recordkeeping, employee coaching and motivation, business valuation, management/control processes, and legal requirements. Designed for the person who desires to develop an entrepreneurial venture.

BUS 275—ORGANIZATIONAL BEHAVIOR 3-0-3
This course is designed to examine behavior modeling in the work environment. Topics include: leadership, the motivation of employees and the understanding of organizational cultures. Students will gain an understanding of the behavioral parameters of organizations that compete in both domestic and international markets. Knowledge of workforce diversity will be emphasized as a key to improving workplace performance through effective pluralistic organizational work teams. Special emphasis will be placed on conflict in negotiations, communicating through influence, power and politics, and the management of organizational change.

BUS 285—COMPENSATION MANAGEMENT 3-0-3
This course is designed to show students how to create fairness and equity when building a sound and equitable wage structure. Wage and salary administration is developed to enhance employee motivation. Job analysis, job evaluation and performance appraisal are presented as vehicles for advancing the understanding of fairness as it applies to both internal and external wage equity. Pay models are designed to be consistent with the legal framework as it applies to the job market. Competitiveness in performing a job is explored when considering a merit or seniority pay system.

BUS 288—BUSINESS ANALYTICS 3-0-3
Business analytics focuses on decision-making enhanced by electronic spreadsheets. It introduces students to a collection of quantitative tools designed to enhance managerial decision-making. Topics to be covered include financial statement analysis, financial and capital budgeting, forecasting, inventory control models and linear programming. Extensive use of an electronic spreadsheet will be used in this course. This is a capstone course in the Business Administration option AAS degree program. Prerequisite(s): ACC 156 or ACC 165 and FIN 220

BUS 296—BUSINESS STRATEGY 3-0-3
This is a capstone course in business that integrates managerial, financial, marketing and accounting principles in strategic decision making. The case methods/simulation method of instruction will be used for problem identification, analysis and solution. Prerequisite(s): 45 credits in business courses

BUS 299—BUSINESS INTERNSHIP II 3-0-3
A coordinated period of supervised work experience in organizations that will offer students the opportunity to acquire competence in their chosen area of specialization.

CED–COOPERATIVE EDUCATION

CED 155—COOPERATIVE EDUCATION EXPERIENCE I 1-12-3
A work experience program designed to supplement formalized classroom study with supervised on-the-job learning experiences in college approved work locations. Academic credit may be earned for work experience if the student's job is related to his field of study or vocational goal. Prerequisite(s): Completion of 12 hours of course work with a minimum grade point average of 2.0, and approval of the coordinator of Career Development and Placement Center.

CED 255—COOPERATIVE EDUCATION EXPERIENCE II 1-12-3

A work experience program for students with clearly defined career objectives in which a work setting integrates academic study and employment activities. Academic credit may be earned under the supervision of a member of the college faculty. Prerequisite(s): CED 155, completion of 30 hours of course work with a minimum grade point average of 2.5, and the approval of the coordinator of Career Development and Placement Center.

CHM–CHEMISTRY

CHM 102—CAREERS IN LABORATORY TECHNOLOGY 1-0-1

This is a survey course about the career and educational aspects of laboratory technology in the areas of biology, chemistry, forensics and medical applications. Topics included, but not limited to, are employment opportunities, job functions, and case studies of workplace activities. Course will include guest speakers from the various industries using laboratory technicians when available.

CHM 107—INTRODUCTORY CONCEPTS IN CHEMISTRY I 3-2-4

A study of the basic concepts in chemistry is presented without the emphasis on the mathematical models that are found in the general chemistry courses. Basic atomic and molecular structure are explored with stress on periodic properties and chemical reactions. Stoichiometry, states of matter and solution chemistry are presented while applications of chemistry are emphasized. Prerequisite(s): MTH 052 or satisfactory placement test score

CHM 108—INTRODUCTORY CONCEPTS IN CHEMISTRY II 3-2-4

A study of the basic concepts in organic and biochemistry is presented without the emphasis on the theoretical models that are found in the organic chemistry courses. Basic organic chemistry is presented with organic family relationships stressed. Prerequisite(s): CHM 107

CHM 120—CHEMISTRY AND LABORATORY SAFETY 2-0-2

The course provides an introduction to the principles of laboratory safety in biological and chemical laboratories. Topics include safe lab practices; regulatory agencies; Material Safety Data Sheets (MSDS); handling, storage, and disposal of chemicals; protective equipment; emergency response; and chemical and biological hazards. This is a required course for students of the various Laboratory Technician programs.

CHM 155—GENERAL CHEMISTRY I 3-2-4

Studies the concepts of atomic structure, chemical periodicity, chemical bonding, molecular geometry, quantum chemistry and principles of chemical reactivity. Stiochiometry, thermodynamics and solution chemistry are presented using a quantitative approach. Gases and the structure of solids and liquids are also studied. Prerequisite(s): High school chemistry, MTH 052

CHM 156—GENERAL CHEMISTRY II 3-2-4

Uses chemical kinetics, thermodynamics and equilibrium to study the behavior of chemical systems. Electrochemical principles are used throughout the course. Ionic equilibria with emphasis on acid-base and solubility equilibria are a major consideration. A brief introduction to organic chemistry and appropriate applications are presented. Prerequisite(s): CHM 155

CHM 199—CHEMISTRY INTERNSHIP I 1-12-3

A supervised work experience which serves to link the student's academic experience with practical applications of chemistry at an individual site.

CHM 250—ORGANIC CHEMISTRY I 3-4-4

Presents organic chemistry by using concepts of chemical and physical properties, the reactions and reaction mechanisms to explore several classes of organic compounds. Kinetics studies are used where appropriate to verify the reaction mechanisms. Hydrocarbon families are used to introduce generalized organic reactions, with group reactions of other families presented as well. Prerequisite(s): CHM 156

CHM 251—ORGANIC CHEMISTRY II 3-4-4

An extension of Organic Chemistry I. Concepts presented in this course include the relationship of spectroscopy to structure, and discussions of the reactions and properties of a variety of organic families. Additional material dealing with mechanisms of reactions is also presented. Prerequisite(s): CHM 250

CHM 264—CHEMISTRY FOR THE HEALTH SCIENCES 3-2-4

Presents chemical concepts that enhance the student's study of the physiological consideration of the human. Topics from general, organic and biological chemistry are presented. Consideration of factors that influence physiological reactions are stressed. Prerequisite(s): One year of high school chemistry, CHM 107 or CHM 155

CHM 299—CHEMISTRY INTERNSHIP II 1-12-3

Requires the student to apply advanced chemical background to practical applications at an industrial site. The student will work in cooperation with a chemistry specialist who will direct the activities of the student to provide experience in the use of the instruments and functioning found in industry.

CIS–COMPUTER INFORMATION SECURITY

CIS 168—PRINCIPLES OF INFORMATION SECURITY 3-0-3

This course is designed to introduce the student to the dynamic discipline of information security. Information security covers a broad range of areas from keeping networks secure from hackers to protecting one's own personal information. Areas of study will include ethical, moral, and legal issues; industry-and vendor-specific certifications; encryption and decryption methods and protocols; and the security system design life cycle. Up-to-the-minute developments in information security and network security will also be covered.

CIS 209—LAN SECURITY 3-0-3

This course introduces students to user, hardware, and software security issues associated with local area networks. Topics presented will include user authentication, infrastructure security: devices, media, security topologies, intrusion detection; and software: file system, service packs, patches, directory services and databases.

CIS 210—INTERNET SECURITY 3-0-3

This course will focus on the theories, ethics, terminologies, and principles of information and protection within a wide area network environment. Specific topics will include shopping cart transactions, third-party transactions, Web-hosting security breaches and principles of data transfer. Students will gain an invaluable understanding of how data moves through the Internet and some measures to protect this data.

CIS 212—COMPUTER FORENSICS 3-0-3

This course will examine the technical aspects of digital computer evidence: collection, identification, authentication, classification and presentation. Specific methods for collecting computer related evidence will be covered. The dynamic process of conducting a successful forensics investigation using information as computer evidence is also addressed. Students will investigate software common to the forensics profession.

CNC–COMPUTER NUMERICAL CONTROL

CNC 111—COMPUTER NUMERICAL CONTROL I 2-4-4

This is course will introduce students to computer numerical control of machining equipment. Students will be taught manual parts programming using the industrial standard G-code format. Students will operate CNC mills and lathes and create parts using their programs. Corequisite(s): MTH 108

CNC 112—COMPUTER NUMERICAL CONTROL II 2-6-5

This course will introduce students to software programming of CNC equipment. Students will use MasterCAM to develop part geometry, create tooling paths, verify machining operations and post-process machining G-code. Students will create parts using CNC mills and lathes. Prerequisite(s): CNC 111; Corequisite(s): MTH 109

CNC 213—COMPUTER NUMERICAL CONTROL III 2-6-5
This course will provide students with further training and experience using CNC software and equipment. MasterCAM will be used to produce G-code programs which will be used to create parts on CNC mills and lathes. Students will be introduced to 4 and 5 axis programming. Prerequisite(s): CNC 112

CNC 214—COMPUTER NUMERICAL CONTROL IV 2-8-6
This course will enable students to develop expertise in programming and operating CNC equipment. Students will work on projects to produce finished parts from raw materials. Production steps will include planning, programming, tooling, fixturing and operations. Prerequisite(s): CNC 213

CPT–COMPUTER TECHNOLOGY

CPT 145—INTRODUCTION TO COMPUTER TECHNOLOGY 3-0-3
This survey course provides students with an overview of computer technology topics-hardware, software, networking, Internet, data management, system design, ethical issues, mobile computing, programming and careers in computer technology. It is designed as a first course for students pursuing a degree in the computer field.

CPT 150—MICROCOMPUTER CONCEPTS 3-0-3
This course introduces students to the microcomputer and various state-of-the-art software applications; word processing, spreadsheet, database and presentation. The overall goal of the course is to guide the student into becoming a proficient microcomputer user. Prerequisite(s): CPT 050

CPT 160—INTRODUCTION TO PROGRAMMING 3-0-3
This course introduces students to programming logic, design and development. Upon completion of this course, students will be able to: understand the structure of a computer program, plan and execute good program design, use sequence, selection, and iteration as required by a program, and create and use methods. No prior programming experience is required.

CPT 162—VISUAL BASIC I 3-0-3
Students will create Windows applications using Visual Basic. Topics include: good program design, event-based programming, control structures, subroutines and functions. Prerequisite(s): CPT 160

CPT 163—JAVA PROGRAMMING I 3-0-3
An introduction to computer programming and the Java language. Topics presented include the logical flow of instructions, control structures and mathematical procedures. Emphasis is placed on the programming process, documentation and Java fundamentals. Prerequisite(s): CPT 160

CPT 171—TELECOMMUNICATIONS FUNDAMENTALS 5-0-5
This course focuses on the prerequisite knowledge required for individuals desiring to work in the field of telecommunications. The major topics are the OSI reference model and how it is utilized in data communications, IP addressing and subnetting, and TCP/IP and how it functions with the network-layer protocols. This course is the first course in a four-course sequence that is designed to prepare students for the Cisco Certified Network Administrator (CCNA) certification exam.

CPT 180—C++ PROGRAMMING 3-0-3
This course introduces the student to programming using the C and C++ languages. Basic programming techniques, data types, flow of execution, functions and data structures are topics that are covered. Adherence to the ANSI Standards of C and C++ are emphasized. Prerequisite(s): CPT 160

CPT 181—INTRODUCTION TO TELECOMMUNICATIONS 3-0-3
Covers telecommunications, its role in the firm and in informal systems and the planning and design of a telecommunications system. Basic communication theory, components of data communication systems, error detection techniques, network protocols and line control procedures, communication carrier facilities and system planning considerations are covered.

CPT 182—OPERATING SYSTEMS 3-0-3
This course is designed to introduce students to the concepts, components and technologies found in desktop based operating systems. Operating Systems explores the fundamentals with an overview of MS-DOS and provides hands-on experience with a Windows desktop client OS. Topics include but are not limited to: installation, configuration, operation and troubleshooting of commonly used operating systems. Prerequisite(s): CTP 145 or CPT 150

CPT 183—LOCAL AREA NETWORKS 3-0-3
This course is designed to provide the concepts, components, terminology and topologies of Local Area Networks (LANs). Topics include network concepts, network essentials, maintenance and network administration. Efficient and effective network methodologies are presented to enhance network management fundamentals.

CPT 188—SOCIAL MEDIA IN BUSINESS 3-0-3
This course examines the current trends in social media and how these popular Internet-based social networking sites can be a powerful marketing tool for businesses and organizations. Through a combination of selected readings and hands-on projects, students will learn which prominent social media tools are best suited for various businesses and organizations in order to maintain a current online profile. Upon completion of the course, students will have the knowledge to develop a basic social media marketing plan for businesses or organization.

CPT 195—EXCEL FOR WINDOWS 3-0-3
This course is designed to construct spreadsheets that graphically describe business problems and generate charts. Students use statistical, mathematic and financial functions. The course will introduce dynamic linking, macros and importing/exporting data.

CPT 196—ACCESS FOR WINDOWS 3-0-3
Microsoft Access is a relational database management system that allows the user to store and retrieve information from related records. The course focuses on a wide range of activities from the fundamentals of good database design and the DBMS terminology to the creation of database applications. Material covered will include: creating tables, forms, queries, reports, macros and modules to handle common business applications.

CPT 198—FIBER-OPTIC TECHNOLOGIES 3-0-3
This course is designed to provide the fundamentals of fiber optics and the light-generating process used to transport digital information as used in data communications and network environments. Topics covered will include single-mode fiber, multi-mode fiber, fiber-optic communications, fiber-optic terminations, polishing, testing, trouble-shooting and measuring signal quality.

CPT 199—INTERNSHIP 1-12-3
A coordinated period of supervised work experience in organizations that will offer students the opportunity to acquire competence in their chosen area of technical specialization. Prerequisite(s): Permission of instructor

CPT 201—WEB CONTENT DEVELOPMENT 3-0-3
Use a World Wide Web development tool to create, view, edit and manage simple to complex Web sites. This course will focus on a range of activities from site design and navigation to publishing on the Internet. Topics covered include: creating a page and a site, formatting, links, tables, graphics, frames, forms, templates and components.

CPT 203—HTML AND CSS 3-0-3
This course introduces the student to the tools and techniques used to develop documents for transmission to external (Internet) and internal (Intranet) clients. Topics include Hyper Text Markup Language (syntax, formatting, forms, tables and linkage) and cascading style sheets (CSS).

CPT 206—JAVASCRIPT 3-0-3
This course introduces students to Web application programming with scripting languages for interactive Web pages and server processing. Students create, test and debug scripts that may be implemented in HTML pages or deployed on a Web server. Prerequisite(s): CPT 203

CPT 211—ROUTING TECHNOLOGIES 5-0-5
This course is designed to develop the skills students need to design, build and maintain a small to medium sized network. This course builds upon the course material presented in Telecommunications Fundamentals (CPT 171). The course provides students with knowledge of router operations, and will cover the configuration of CISCO routers to operate independently in an enterprise environment. This is the second in a four-course sequence designed to prepare students for the Cisco Certified Network Associate (CCNA) professional certification exam. Prerequisite(s): CPT 171

CPT 213—JAVA PROGRAMMING II 3-0-3
This course builds on concepts presented in CPT 163-Java Programming. Topics covered in this course include inheritance, polymorphism and application development for graphical user interfaces (GUI). Students will use an integrated development environment (IDE) to create applets. Prerequisite(s): CPT 163

CPT 214—WIRELESS COMMUNICATION 3-0-3
This course introduces the student to the principles of wireless communication, the line-of- sight microwave, line-of-sight laser, and line-of- sight propagation techniques. Specific topics include satellite uplink and downlink systems, non line-of-sight communications methods in addition to various line-of-sight technologies. The communications methods addressed in this course will focus on the direct interface with local and wide area networking technologies. Prerequisite(s): CPT 171 or CPT 183

CPT 219—FIBER OPTIC ANALYSIS AND DESIGN 3-0-3
This course is designed to provide training with the tools needed to understand the design, installation and splicing specialization of Fiber Optic Networks. Training focuses on network overview, fiber properties, hanging and routing of hardware, resolution of environment factors and planning to address optical network management issues. Fusion of: ribbon, discrete, pigtail and mid-span cables. Mechanical splicing, inner duct, splice trays and other hardware devices will be used to insure a wide base of installation knowledge. This course is a preparation for the Fiber Optic Specialist/Testing certification. Prerequisite(s): CPT 198

CPT 222—FIBER OPTIC TESTING AND TROUBLESHOOTING 3-0-3
This course is designed to provide training in the testing and troubleshooting of fiber optic systems. Topics include repetitive testing of single-mode fiber, multi-mode fiber, repetitive insertion loss tests on multiple links and repetitive testing with Optical Time Domain Reflectometry. Emphasis placed on testing and troubleshooting, measuring signal quality and reflectance testing. This course is a preparation for the Fiber Optic Specialist/Testing certification. Prerequisite(s): CPT 198

CPT 242—VISUAL BASIC II 3-0-3
This course covers techniques needed to write advanced Windows programs using Visual Basic. Advanced programming projects include error handling, graphics, procedures, multiple forms, processing with files, object linking and embedding (OLE), dynamic data exchange (DDE) and how to control and interact with most PC databases. Prerequisite(s): CPT 162

CPT 248—PC HARDWARE 3-0-3
This course focuses on the fundamentals of the components in a personal computer. Topics will include motherboards, processors, memory, drives, expansion boards and selected peripheral devices.

CPT 249—PC TROUBLESHOOTING 3-0-3
This course covers the installation, configuration, operation, and troubleshooting of personal computers using advanced hardware and software concepts and the utilization of information resources found on the Internet. Emphasis is on advanced troubleshooting techniques for repair and maintenance of personal computers. Prerequisite(s): CPT 182 and CPT 248

CPT 256—LINUX DESKTOP 3-0-3
This course is designed as an introduction to the Linux operating system. Course content will include the installation, upgrading, configuration and troubleshooting of various commercial Linux distributions. Popular Linux utilities and applications will be used. Prerequisite(s): CPT 182

CPT 259—USER SUPPORT OPERATIONS 3-0-3
This course provides those students seeking to become help desk or call center professionals with skills ranging from customer service, troubleshooting software and computer problems, operation of the help desk and creation of manuals. It is expected that students have a prior knowledge of basic computer concepts, word processing, spreadsheet and database applications and Internet experience. Prerequisite(s): CPT 150

CPT 262—WINDOWS CLIENT SERVER 3-0-3
This course is designed to provide the student with the knowledge to install, configure, operate, navigate and administer a Windows client and server computer. Students will learn to design, install, maintain and troubleshoot the services and protocols found in a network environment. Prerequisite(s): CPT 182

CPT 264—WINDOWS SERVER MANAGEMENT 3-0-3
This course covers the installation, configuration and troubleshooting of a Windows network infrastructure. Topics include: DNS, DHCP, remote access, network protocols, WINS and IP routing, active directory, sites, organizational units, domains and security groups. Prerequisite(s): CPT 262

CPT 271—PHP AND SQL 3-0-3
This course provides students with an introduction to the Structured Query Language (SQL) as it is used in a variety of database environments. The course content will include creating and modifying queries, the design of effective queries and query programming within an open source relational database management system. Prerequisite(s): CPT 196

CPT 278—INTEGRATED OFFICE APPLICATIONS 3-0-3
This course demonstrates the integration of the Microsoft Office Professional suite components. Using a case study approach, students will implement advanced features for problem analysis and problem solution. Students entering the course are expected to have mastered basic skills in Word, Excel, PowerPoint and Access. Outlook is introduced. Prerequisite(s): CPT 195, CPT 196, OFT 185 and OFT 190

CPT 286—SYSTEMS ANALYSIS AND DESIGN 3-0-3
System Analysis and Design introduces the student to the tasks performed by systems analysts and the process that is used to complete successful projects. This course presents the life cycle of a computer system, the tools used by the systems analyst in each phase, and the role of the systems analyst within that life cycle. Stressing the importance of functioning as a member of a team, the course presents techniques to successfully manage a project, as well as communication with other members of the team and the organization. It serves as a capstone course, applying all the knowledge the student has gained into a final cohesive project.

CRJ–CRIMINAL JUSTICE

CRJ 155—INTRODUCTION TO CRIMINAL JUSTICE 3-0-3
The history, development and philosophy of law enforcement in democratic society, as well as introduction to modern agencies of criminal justice will be discussed. An orientation to criminal justice as a career field will be examined and the criminal justice flow chart and processes will be illustrated.

CRJ 160—CRIMINAL LAW I 3-0-3
Elements of substantive and procedural criminal law and how it applies in both practice and theory are introduced. The structure, definitions and most applicable and pertinent sections of criminal statutes are examined. An understanding of the criminal laws as they apply to preservation and protection of life and property will be summarized with an identification of appropriate punishments and punishment philosophies.

CRJ 162—POLICE ADMINISTRATION I 3-0-3
This course will examine the role of law enforcement in contemporary society relative to crime prevention, community policing, professional development and its effect on the community. Analysis of organizational structure, administration, management practices and operating procedures of law enforcement agencies with emphasis on line services activities. Recruitment, selection, training and career development of police will be discussed. Prerequisite(s): CRJ 155

CRJ 163—CRIMINAL PROCEDURE 3-0-3
Principles, duties and mechanics of criminal procedures as applied to important areas of arrest, force, search and seizure will be examined. An overview of the processes involved in the uses of criminal evidence and the court system will be studied. Significant criminal court decisions will be summarized and their effect on criminal justice system.

CRJ 172—SUBSTANCE ABUSE AND CRIME 3-0-3
Analysis of the role of criminal justice in controlling the use and abuse along with the manufacturing, trafficking and distribution of illicit and legal substances is the primary objective of this course. Students will explore the relationship between drugs, alcohol and criminality along with an overview of law enforcement strategies to combat the war on drugs and evaluating the effectiveness of those strategies. Theories and research regarding causes and consequences of illegal drug usage and trafficking and its effect on the criminal justice system will be evaluated. Students will analyze the current economic and social costs along with the implications of alcohol abuse correlating with such crimes as rape, domestic violence and homicide.

CRJ 180—CORRECTIONS 3-0-3
This course studies special problems and practices in the correctional system. Analysis will be conducted of current correctional ideologies as they apply to historic punishment philosophies and their use by the American criminal justice system in the contemporary correctional environment.

CRJ 195—INTRODUCTION TO PRIVATE SECURITY 3-0-3
This introduction to private security will familiarize the student with basic information that will serve as an overview of the private security field. This will include a historical and philosophical perspective of private security, its principles, its legal authority, and its effect on society in general.

CRJ 220—RESEARCH METHODS IN CRIMINAL JUSTICE 3-0-3
An introduction to basic criminal justice methods of research and analysis will be presented. Examination will be conducted of various research techniques, data collection strategies, and analytical tools. Research procedures and statistical techniques are identified. Problem solving by research and identification of contemporary social science research sources will be investigated.

CRJ 225—CRIMINOLOGY OF TERRORISM 3-0-3
Students will discuss the criminology of terrorism including the typologies of terrorism, tactics employed by terrorist organizations, terrorist profiles and organizational structures of terrorist groups. Domestic and international terrorist groups will be evaluated. Students will analyze the modus operandi of terrorist organizations, exploring such factors as religion, politics and the social dynamics of the group. This course will examine historical as well as contemporary theories and issues of terrorism.

CRJ 255—JUVENILE DELINQUENCY 3-0-3
This course will explore the historical and contemporary theories of juvenile delinquency and justice in America. Students will analyze the causes of delinquency and discuss the various theories from various behavioral constructs about the treatment and prevention of delinquency. This course will examine various phenomena that exist today such as gangs, school violence, teenage sexuality and underage alcohol use and illegal drug use.

CRJ 261—CRIMINAL LAW II 3-0-3
This course will introduce students to a case law approach to criminal justice. The topics to be discussed will include homicides, sexual assaults, property and personal crimes along with various violent and non violent offenses. Students will examine contemporary issues of relating to such topics as child predatory offenses, domestic violence and hate crimes. Students will analyze the American court system and the functionality of both state and federal levels. Prerequisite(s): CRJ 160

CRJ 262—CRIME PREVENTION 3-0-3
Students will conduct analysis of the nature and extent of crime in the United States and examine problems and techniques in preventing crime. Emphasis is on the organization and function of crime prevention agencies and on community resources in preventing crime.

CRJ 263—INVESTIGATIVE CONCEPTS 3-0-3
Fundamentals of investigative theory; developing informational processes; principles of interviewing and question construction; instrumentation techniques; identification of persons and things; and investigative operations. Covers the history and psychology of criminal investigation, computer technology as a tool in investigation, and current issues involving invasion of privacy. Prerequisite(s): CRJ 155

CRJ 265—WHITE COLLAR CRIME 3-0-3
This course will examine the economic and sociological aspects to white collar crime as well as the criminological aspects to this growing problem in the American criminal justice system. Topics include dealing with administrative, environmental, labor and manufacturing violations, and unfair trade practices. Will also explore crimes dealing with embezzlement, extortion, fraud and conspiracy.

CRJ 276—COMMUNITY RELATIONS 3-0-3
History and background of community relations programs of police and other law enforcement agencies; public attitudes toward law enforcement agencies; the changing nature of societal controls and the concept of professionalism in law enforcement will be discussed. Case histories of community relations programs by law enforcement agencies will be examined. Various police situations and appropriate police responses in the context of community oriented policing will be studied.

CRJ 277—ETHICS AND THE CRIMINAL JUSTICE SYSTEM 3-0-3
This course is a comprehensive overview of ethical concepts, principles and theories and their relevance to crime and the criminal justice system. Students will examine practical issues and topics relevant to careers in criminal justice. The course will expose students to many moral dilemmas that they potentially may face as professionals in their chosen field.

CRJ 283—INSTITUTIONAL TREATMENT OF ADULTS AND JUVENILES 3-0-3
Correctional institutions relative to their role in the punishment and rehabilitation of individuals will be studied. The early history of imprisonment, classification and custody of incarcerates, security measures, and the development and organizational structure of jail and prison systems will be examined. Discussion will be conducted on contemporary dilemmas within institutionalization. Students will evaluate juvenile incarceration.

CRJ 287—MULTICULTURALISM AND THE CRIMINAL JUSTICE SYSTEM 3-0-3
A comprehensive overview of multiculturalism in the American criminal justice system. This course will explore the various issues relating to correctional procedures and practices but also employment strategies for minorities and women. We will examine the philosophy of community partnerships and community policing strategies with the emphasis on police-citizen collaboration in dealing with not only crime but a host of social issues affecting the community.

CRJ 290—PRINCIPLES OF CRIMINOLOGY 3-0-3
Introduces historical and current criminological theories with emphasis on the criminal justice system and its role in crime prevention.

CRJ 296—INTRODUCTION TO CRIMINALISTICS 3-0-3
The scientific aspects of criminal investigations including the application of knowledge from the forensic sciences will be examined. Included within this course will be the collection and the use of fingerprints; firearms and ballistics reports; hair, blood and paint samples; tools, poisons and other organic materials as evidence. Discussion of DNA and its relevance as scientific evidence will occur and basic crime scene investigation will be discussed. Prerequisite(s): CRJ 155

CUL–CULINARY ARTS

CUL 121—APPRENTICESHIP I 1-40-2
A supervised and evaluated on-the-job training experience designed to provide practical application of the skills and methodology of the field. Job site must be approved by coordinator. Uniforms required. Prerequisite(s): Must be enrolled in the chef apprenticeship program.

CUL 122—APPRENTICESHIP II 1-40-2
A supervised and evaluated on-the-job training experience designed to provide practical application of the skills and methodology of the field. Uniforms required. Prerequisite(s): CUL 121

CUL 123—APPRENTICESHIP III 1-40-2
A supervised and evaluated on-the-job training experience designed to provide practical application of the skills and methodology of the field. Uniforms required. Prerequisite(s): CUL 122

CUL 130—BASIC CULINARY SKILLS 1-4-3
This course is designed to prepare the student for entry level cook positions. Equipment usage, care and safety will be demonstrated and practiced by the students. Basic preparation skills such as dicing, chopping, mincing, breading etc., will be demonstrated and practiced by the student. Uniforms and program tool kit required.

CUL 132—GARDE MANGER 1-4-3
Stresses basic garde manger principles as well as functions and duties of the department as it relates and integrates into the other kitchen operations. In addition, emphasis is placed on introduction to specialty work which includes ice carving, buffet decorations, and culinary competitions. Uniforms and program tool kit required. Prerequisite(s): FSM 105

CUL 135—SPEED SCRATCH COOKING 1-4-3
The student will study and prepare convenience foods used in commercial operations. Emphasis is placed on researching and analyzing the most up-to-date convenience products available. Menus will be evaluated for food and labor costs and as to where convenience products can be introduced without changing quality of product. Uniforms and program tool kit required. Prerequisite(s): FSM 105

CUL 224—APPRENTICESHIP IV 1-40-2
A supervised and evaluated on-the-job training experience designed to provide practical application of the skills and methodology of the field. Uniforms required. Prerequisite(s): CUL 123

CUL 232—FOOD SPECIALTIES 1-4-3
Advanced food preparation skills to include regional and ethnic cuisine, food trends and menus. Uniforms and program tool kit required. Prerequisite(s): FSM 105

DAE–EXPANDED FUNCTIONS DENTAL ASSISTING

DAE 100—DENTAL ANATOMY 2-0-2
This course is designed to provide students with a comprehensive study of the morphology and function of the human permanent and primary dentitions and skeletal and dental classifications of occlusion. (Graduates of the WCCC Dental Assisting or Dental Hygiene programs are not required to take this course. DAS 101 or DAH 104 will be substituted for DAE 100)

DAE 101—EXPANDED FUNCTIONS DENTAL ASSISTING I 3-6-6
This course is designed to provide students with the knowledge and skills necessary to perform the EFDA functions as delegated by the PA State Board of Dentistry. Lecture and laboratory sessions will present each function in detail and provide students with the opportunity to become competent in the EFDA functions.

DAE 102—EXPANDED FUNCTIONS DENTAL ASSISTING II 1-8-3
This course is designed to provide students with the opportunity to perform EFDA functions and evaluate their performance through journal writing and class discussion. Clinical experience is arranged through approved dental practices. Liability insurance must be maintained by the student while enrolled in the program. Clinical sessions include a wide variety of restorative experiences on many patients. Two four-hour clinical sessions are required per week for 15 weeks. Students who are able to schedule more than eight hours per week may complete the clinical rotation in less than 15 weeks. Prerequisites(s): DAE 100, DAE 101

DAH–DENTAL HYGIENE

DAH 101—INTRODUCTION TO DENTISTRY 2-2-3
Designed to give the student an in-depth study of dental terminology, medical/dental histories, charting, dental instruments, infection control, sterilization, pain control and patient management. Lecture and laboratory sessions introduce the student to each of the dental specialties and provide the student with the knowledge and skills required for application in the clinical setting. Prerequisite(s): BIO 171, CHM 264, SOC 160; Corequisite(s): DAH 102, DAH 104, BIO 172

DAH 102—DENTAL MATERIALS 1-2-2
Lecture and laboratory course designed to familiarize the dental hygiene student with commonly used materials in dentistry. The focus is on properties, proper technique of manipulation, and influence of manipulation upon these properties. Prerequisite(s): BIO 171, CHM 264, SOC 160; Corequisite(s): BIO 172, DAH 101, DAH 104

DAH 103—MEDICAL EMERGENCIES 1-0-1
Prepares student to recognize and manage medical emergencies in a dental office. Emphasis is placed on prevention through the use of medical histories and the team approach to emergency situations. Corequisite(s): DAH 105, DAH 111, DAH 112, DAH 113, DAH 114

DAH 104—HEAD, NECK AND DENTAL ANATOMY 4-0-4
Designed to reinforce the normal anatomical structures, musculature, blood and nerve supply to the head and neck. The administration of local anesthesia, tooth morphology and function are also discussed. Prerequisite(s): BIO 171, CHM 264, SOC 160; Corequisite(s): DAH 101, DAH 102, BIO 172

DAH 105—DENTAL RADIOLOGY 2-2-3
Provides an overview of dental radiology principles and techniques. Topics include X-ray production, radiation safety, exposure technique, film processing, landmark identification and client management. The student will apply didactic concepts in a supervised clinical laboratory setting. Prerequisite(s): DAH 104; Corequisite(s): DAH 103, DAH 111, DAH 112, DAH 113, DAH 114

DAH 106—NUTRITIONAL BIOCHEMISTRY 2-0-2
Introduces the science of nutrition. Sources and functions of nutrients, utilization of food in the body, nutritional requirements for various age groups and rudiments of diet counseling are discussed. Prequisite(s): DAH 103, DAH 105, DAH 111, DAH 112, DAH 113, DAH 114; Corequisite(s): DAH 109, DAH 115, DAH 117

DAH 109—ORAL PATHOLOGY 2-0-2
Studies the process of diseases with emphasis on diseases and their manifestations in the oral cavity. Recognition and detection of such deviations from normal is stressed. The emphasis is on inflammation, regeneration, repair, immunity, allergy, oral manifestations of disease, tumors and developmental disturbances. Prequisite(s): DAH 103, DAH 105, DAH 111, DAH 112, DAH 113, DAH 114; Corequisite(s): DAH 106, DAH 115, DAH 117

DAH 111—DENTAL HYGIENE LECTURE 3-0-3
Provides an introduction to the fundamental concepts of oral health care services, disease control and dental hygiene instrumentation skills. Corequisite(s): DAH 103, DAH 105, DAH 112, DAH 113, DAH 114

DAH 112—DENTAL HYGIENE LAB 0-8-4
Designed for students to observe, discuss and practice the clinical skills required to perform oral health care services. Students will apply didactic concepts in a supervised clinical laboratory setting. Prerequisite(s): BIO 172; Corequisite(s): DAH 103, DAH 105, DAH 111, DAH 113, DAH 114

DAH 113—ORAL HISTOLOGY/EMBRYOLOGY 2-0-2
Studies the embryonic development of the head, face and oral cavity. Histologic structure of the oral tissues with relation to their clinical form and function is discussed. Corequisite(s): BIO 172, DAH 103, DAH 105, DAH 111, DAH 114

DAH 114—PERIODONTICS I 3-0-3
Designed to study the periodontium in healthy and diseased states. Emphasis is placed on the anatomy of the periodontium, disease classification and etiology, the assessment and documentation of clinical findings and the role of the dental hygienist in non-surgical periodontal therapy.

DAH 115—CLINICAL DENTAL HYGIENE I 2-12-5
Provides for development of the knowledge and clinical skills required to provide oral health care services. Didactic emphasis is placed on disease control and prevention. Students will provide oral health care services in a supervised clinical setting. Prequisite(s): DAH 103, DAH 105, DAH 111, DAH 112, DAH 113, DAH 114; Corequisite(s): DAH 106, DAH 109, DAH 117

DAH 117—LOCAL ANESTHESIA 1.5-3-3
This course is designed to provide the didactic and clinical knowledge of safe and effective pain control through the administration of topical and local anesthetic agents. Prequisite(s): DAH 103, DAH 105, DAH 111, DAH 112, DAH 113, DAH 114; Corequisite(s): DAH 106, DAH 109, DAH 115

DAH 205—PERIODONTICS II 1-0-1
Designed to study the diagnosis and treatment of periodontal disease. Emphasis is placed on the differentiation of various periodontal surgical procedures, wound healing, implantology, pre- and post-operative patient education and preventive maintenance. Prerequisite(s): DAH 106, DAH 109, DAH 114, DAH 115, DAH 117

DAH 206—CLINICAL DENTAL HYGIENE II 2-16-6
Provides refinement of the knowledge and skills required to provide oral health care services. Didactic emphasis is placed on the provision of services for and the management of patients with special needs. Students will provide oral health care services in a supervised clinical setting. Prerequisite(s): DAH 106, DAH 109, DAH 114, DAH 115, DAH 117

DAH 207—PHARMACOLOGY 2-0-2
Designed for dental hygiene students to study the physiology, interactions and effects of drugs. Emphasis is placed on drugs commonly used and/or encountered in dental practice. Prerequisite(s) DAH 115; Corequisite(s): DAH 206, BIO 265

DAH 208—CLINICAL DENTAL HYGIENE III 2-16-6
Designed to expand the students' knowledge and clinical skills, enabling them to render comprehensive oral health care utilizing case based methodology, the reflection on ethical and legal obligations of the dental professional and successful role implementation upon employment. Students will provide oral health care services in a supervised clinical setting. Prerequisite(s): DAH 205, DAH 206

DAH 209—COMMUNITY DENTAL HEALTH 3-0-3
A basic orientation to the principles of community oral health planning and practice. The hygienist's role as an educator and resource person for the community will be emphasized. Students will expand their knowledge and skills necessary to promote oral health care in the community. Corequisite(s): DAH 205, DAH 206

DAS–DENTAL ASSISTING

DAS 100—INTRODUCTION TO DENTAL ASSISTING 4-0-4
This course is designed to give the student an introduction to the scope and depth of dental assisting practice. An introduction to the dental specialties is provided with an emphasis on restorative dentistry procedures. Corequisite(s): DAS 101, DAS 102, DAS 103, DAS 105

DAS 101—ORAL ANATOMY 2-0-2
This course is designed to study the normal anatomy of the oral cavity and the oral facial structures as well as the nerve supply to these areas. Tooth morphology and function are also discussed. Corequisite(s): DAS 100, DAS 102, DAS 103, DAS 105

DAS 102—DENTAL MATERIALS FOR DENTAL ASSISTANTS 1-2-2
Lecture and laboratory course designed to familiarize the dental assisting student with commonly used materials in dentistry. The focus is on appropriate use of the materials and the correct manipulation of the materials. Corequisite(s): DAS 100, DAS 101, DAS 103, DAS 105

DAS 103—DENTAL ASSISTANT LAB 0-8-4
This course is designed for students to observe, discuss, and practice the clinical skills required to perform dental assisting procedures. Students will apply didactic concepts in a supervised clinical laboratory setting. Corequisite(s): DAS 100, DAS 101, DAS 102, DAS 105

DAS 104—DENTAL SCIENCE 4-0-4
This course provides an overview of the dental sciences. Didactic emphasis is placed on pharmacology/pain control, oral histology and embryology, oral pathology and nutrition. Prerequisite(s): DAS 100, DAS 101, DAS 102, DAS 103, DAS 105; Corequisite(s): DAS 106

DAS 105—DENTAL RADIOLOGY FOR DENTAL ASSISTANTS 2-2-3
This course provides an overview of dental radiology principles and techniques. Topics include X-ray production, radiation safety, exposure technique, film processing, landmark identification and client management. The student will apply didactic concepts in a supervised clinical laboratory setting. Corequisite(s): DAS 100, DAS 101, DAS 102, DAS 103, DAS 105

DAS 106—CLINICAL DENTAL ASSISTING I 2-12-5
This course provides didactic and clinical practice experience for the student dental assistant. The didactic portion of this course relates to preventive dentistry and the treatment of patients with special needs. Emphasis is also on the dental specialties of pediatric dentistry, endodontics, oral pathology, oral maxillofacial surgery, orthodontics, periodontics, prosthodontics and dental public health. Students will be supervised in all phases of dental assisting while rotating through selected departments at the University of Pittsburgh School of Dental Medicine and the WCCC Dental Hygiene Clinic. Prerequisite(s): DAS 100, DAS 101, DAS 102, DAS 103, DAS 105; Corequisite(s): DAS 104

DAS 108—CLINICAL DENTAL ASSISTING II 1-12-4
This course provides didactic and clinical practice experience for the student dental assistant to be competent to begin practice upon program completion. The didactic portion of this course relates to preparation for the Dental Assisting National Board Examinations and successful role implementation upon employment. Emphasis is also placed on the legal and ethical issues in dentistry. Clinical emphasis is on obtaining mastery of dental assisting skills. Students will complete a supervised preceptorship in private dental offices. Prerequisite(s): DAS 104, DAS 106; Corequisite(s): DAS 109

DAS 109—PRACTICE MANAGEMENT 2-0-2
This course presents an overview of the administration and a management of a dental office. The student will be introduced to the use of the microcomputers and their application in a dental office. Prerequisite(s): DAS 104, DAS 106; Corequisite(s): DAS 108

DFT–DRAFTING

DFT 105—TECHNICAL DRAFTING I 2-4-4
A beginning course for students who have little or no previous experience in drafting. The principle objectives are: basic understanding of orthographic projection; size description, detail and assembly work drawings; understanding of principles and appropriate applications of descriptive geometry. A.S.A. standards are stressed. Interpretation of industrial sketches and prints is introduced to emphasize accepted drawing practices and to develop an early appreciation of engineering graphics.

DFT 106—TECHNICAL DRAFTING II 2-4-4
A continuation of DFT 105 Technical Drafting I. The instructional units will provide the students with more advanced drafting techniques and competencies. Handbooks and other material sources in adherence to the American National Standards Institute will be utilized. Prerequisite(s): DFT 105

DFT 110—BLUEPRINT READING 1-2-2
Introduces the basics of drafting principles and symbology used for interpreting prints for industry. Actual prints are provided for experience in proper interpretation. Topics include title blocks, material identification, revision systems, sketching, orthographic projection theory, dimensioning and tolerance, detail and assembly drawings, sections, thread representation and specifications and callouts for welding processes.

DFT 112—INTRODUCTION TO DESIGN, MATERIALS AND PROCESSING 3-0-3
Focues on the study of design, materials and the primary processing methods used in manufacturing. A practical course devoted to the many ways in which raw materials are economically converted into useful products. Discussions of primary processing methods-materials additions, removal, and change are grouped together, followed by coverage of applications. Properties of various materials will be covered. Students first build a thorough knowledge of similarities and differences in materials, then processing methods, and that foundation carefully sets the stage for an understanding of how to choose the optimal processes for a specific project.

DFT 199—DRAFTING AND DESIGN INTERNSHIP 1-12-3
Students will obtain experience in the drafting and design field through a combination of occupational instruction and on-the-job training. This course integrates classroom occupational study with a planned supervised work experience. Prerequisite(s): Permission of instructor

DFT 207—TOOL DESIGN 2-4-4
Designing and detailing drawings, cutting tools, dies, jigs, fixtures and forming tools that enable a tool and die maker to make tools capable of producing duplicate parts on a production basis. Prerequisite(s): DFT 106

DFT 208—PRODUCT DESIGN 2-2-3
Introduces methods of designing a finished product or a simple machine. Student applies the basic design fundamentals and computations needed to produce a product. Prerequisite(s): EGR 105 or DFT 112, DFT 207

DFT 258—AUTOCAD 2-4-4
AutoCAD teaches students to draw, edit, dimension and plot 2-D machine drawings with AutoCAD software. Basic operating features and file management functions of Microsoft Windows will also be taught in the course.

DFT 259—ADVANCED AUTOCAD 2-4-4
Advanced AutoCAD covers advanced drawing and editing commands, drawing and plotting scales, symbol and block usage, Xreferences, paper space functions, ordinate dimensions, and customizing toolbars. Approximately one-third of the semester will be devoted to covering AutoCAD's 3D solid modeling capabilities. Prerequisite(s): DFT 258

DFT 266—AUTODESK INVENTOR 2-4-4
Autodesk Inventor is created and marketed by Autodesk for mechanical design. Inventor is a 3-D feature based parametric solid modeling computer software. Inventor may be used to create 3-D,solid model parts, engineering drawings of solid model parts and assemblies of sold parts. Inventor is also capable of creating sheet metal parts and sheet metal part drawings. The primary goal of this course is to teach students how to use Inventor software for solid part modeling. Creating and editing solid parts, creating engineering drawings from solid parts, assembly modeling and creating sheet metal parts will be covered in lectures and lab assignments.

DMS–DIAGNOSTIC MEDICAL SONOGRAPHY

DMS 103—CROSS SECTIONAL ANATOMY FOR ULTRASOUND 2-0-2
This course covers the human anatomy through the evaluation of transverse, sagittal, coronal and oblique planes. Organs and structures also in the head, neck, thorax, abdomen, pelvis and extremities are addressed. Student will be able to visualize any portion of the anatomy of the body as a three-dimensional whole and to ultrasound images. Prerequisite(s): ALH 122, BIO 171, BIO 172
Corequisite(s): DMS 105, DMS 204

DMS 105—ABDOMINAL I 3-3-4
This course presents normal anatomy and physiology and anatomical variations of the liver, gallbladder, pancreas, biliary system, spleen, urinary system, adrenal, peritoneal cavity, retroperioneum and abdominal vasculature, uterus and ovaries. The laboratory component of this course presents abdominal Doppler principles and applications in the clinical setting. Prerequisite(s): ALH 122, BIO 171, BIO 172; Corequisite(s): DMS 103, DMS 204

DMS 106—OBSTETRICS I 3-0-3
This course presents the normal anatomy and physiology of the first, second and third trimesters of pregnancy. Also discussed are anatomical variation and baseliners. In addition normal fetal development and structure, placental development, amniotic fluid, fetal testing and other gestational issues are presented.
Prerequisite(s): DMS 103, DMS 105, DMS 204
Corequisite(s): DMS 201, DMS 205

DMS 201—PATIENT CARE/LEGAL/ ETHICAL ISSUES 2-0-2
This course is designed to offer the student with common patient care issues, legal and ethical issues, and professional issues that specifically relate to ultrasound imaging. Medical and legal issues will be presented along with ethical challenges that may take place in the clinical setting. Also included will be information related to certification and governing bodies related to practice.
Prerequisite(s): DMS 103, DMS 105, DMS 204
Corequisite(s): DMS 106, DMS 205

DMS 204—GYNECOLOGY 3-0-3
This course introduces the student to the anatomy and physiology of the pelvic organs which includes the cervix, vagina, uterus, ovaries, pelvic musculature and vasculature. The laboratory component of the course presents transabdominal and transvaginal techniques which correlate to classroom theory. Application to the clinical settings is discussed. Prerequisite(s): ALH 122, BIO 171, BIO 172 Corequisite(s): DMS 103, DMS 105

DMS 205—ABDOMINAL II 3-3-4
This course introduces students to the abnormal or pathologic principles of the liver, gallbladder, pancreas, biliary system, spleen, urinary system, adrenal, peritoneal cavity, retroperioneum and abdominal vasculature. There will be correlation between the Doppler findings and pathology. The laboratory component of this course presents abdominal Doppler principles and applications correlated with disease process. Pediatric abdominal pathology and Doppler use is included. Prerequisite(s): DMS 103, DMS 105, DMS 204
Corequisite(s): DMS 106, DMS 201

DMS 206—OBSTETRICS II 3-0-3
This course presents the pathological and morphologic process of the second and third trimesters. This includes both maternal diseases and complications and fetal abnormalities.
Prerequisite(s): DMS 106, DMS 201, DMS 205
Corequisite(s): DMS 208, DMS 211, DMS 213

DMS 207—SMALL PARTS, BREAST & NEURO 2-0-2
This course presents the student with the anatomy and physiology of breast, thyroid, prostate, scrotum, neuro implications, and superficial structures. The laboratory component will correlate the normal and abnormal appearance of organs as presented in the classroom segment of the course.Prerequisite(s): DMS 106, DMS 201, DMS 205
Corequisite(s): DMS 210

DMS 208—INTRO TO VASCULAR 2-3-3
This course introduces the student to the normal and abnormal anatomical and physiological structure and processes of the vascular system. The laboratory component of the course presents ultrasound imaging and Doppler techniques utilized in the normal and disease related vascular structures. Prerequisite(s): DMS 106, DMS 201, DMS 205
Corequisite(s): DMS 206, DMS 211, DMS 213

DMS 210—CLINICAL I 0-24-3
This course serves as the first clinical component of the Diagnostic Medical Sonography program. The clinical will consist of three, eight-hour days per week at clinical site(s) approved by the WCCC Program Director. An interview process may be required by the clinical site as a part of the approval process.
Prerequisite(s): DMS 106, DMS 201, DMS 205
Corequisite(s): DMS 207

DMS 211—CLINICAL II 0-24-3
This course serves as the second clinical component of the Diagnostic Medical Sonography program. The clinical will consist of three, eight-hour days per week at clinical site(s) approved by the WCCC Program Director. An interview process may be required by the clinical site as a part of the approval process.
Prerequisite(s): DMS 207, DMS 210
Corequisite(s): DMS 206, DMS 208, DMS 213

DMS 212—CLINICAL III 0-24-3
This course serves as the third clinical component of the Diagnostic Medical Sonography program. The clinical will consist of three, eight-hour days per week at clinical site(s) approved by the WCCC Program Director. An interview process may be required by the clinical site as a part of the approval process.
Prerequisite(s): DMS 206, DMS 208, DMS 211, DMS 213
Corequisite(s): DMS 207, DMS 214

DMS 213—ACOUSTICAL PRINCIPLES & INSTRUMENTATION 3-3-4
This course combines theory and practice in acoustical principles, instrumentation and quality control. Topics included, but are not limited to, the application and uses of the ultrasound unit, modes of operation, propagation of ultrasound, transducers, scan converter displays, pulse echo imaging and instrumentation, storage, display, Doppler, artifacts, film and methods of permanent image recording, equipment calibration, resolution, gray scale, film critique, bioeffects quality assurance and safety.
Prerequisite(s): DMS 207, DMS 210, PHY 130
Corequisite(s): DMS 206, DMS 208, DMS 211

DMS 214—ACOUSTICAL PRINCIPLES/ INSTRUMENTATION 3-0-3
This course is a continuation of DMS 213 and the inclusion of advanced topics significant to medical ultrasound imaging, instrumentation and quality control.
Prerequisite(s): DMS 206, DMS 208, DMS 211, DMS 213
Corequisite(s): DMS 212

DTT–DIETETIC TECHNOLOGY

DTT 111—INTRODUCTION TO DIETETICS 3-0-3
Orientation to the field of dietetics, and dietary management, including related medical terminology. Explores the partnership between the dietetic professionals and other related professionals. Transportation to off-campus locations is the responsibility of the student. All new dietetic technology students are required to take this course in their first semester. Prerequisite(s) or corequisite(s): FSM 159

DTT 114—TOPICS IN NUTRITION AND HEALTH 3-0-3
Modification of the diet to meet the physiological, psychological, social and economic needs of individuals. The changes in physiological processes will be discussed along with the need for altering nutrient intakes that affect this change. Current diet related concerns are discussed. Prerequisite(s): FSM 159

DTT 199—NUTRITIONAL SERVICES MANAGEMENT PRACTICUM 1-12-3
This is the capstone practicum required for completion of the nutritional services management option of the dietetic technology program. Under the supervision of a qualified nutritional services manager, students will gain the practical experience needed to fulfill the minimum requirements for entry level clinical and supervisory positions as a nutritional services manager or dietetic assistant. The importance of professional behavior and working with the health care team are emphasized. Prerequisites(s): DTT 114, FSM 112, ACC 165, FSM 235 (or concurrent), and permission of instructor

ECE–EDUCATION/PRE-K–GRADE 4

ECE 179—INFANT & TODDLER DEVELOPMENT 3-0-3
This course provides a developmental perspective on the earliest period of human life. It serves as an introduction to the study of the prenatal, perinatal, neonatal, infancy and toddler development. In addition, the course deals with specific issues related to infancy, including infant programs and curriculum, working parents and public policy. This course serves as a prerequisite to ECE 180.

ECE 180—CHILD GROWTH AND DEVELOPMENT 3-0-3
This course is designed to provide a comprehensive study of child developmental from ages three to eight. Theories of child development will be examined including: psychoanalytic, psychosocial, cognitive development, behavioral and social learning theory. The areas of development to be studied are: motor, cognitive, language literacy, social ecological, multiple intelligence, emotional, personality, and moral development. The child will be viewed within the context of her social world including family and school. This is a required course for all Early Childhood Education majors. Prerequisite(s): ECE 179

ECE 182—EARLY CHILDHOOD EDUCATION CURRICULUM 3-0-3
This course is designed to provide a comprehensive study of how to plan developmentally appropriate activities for all children ages 3 to 8 years in the areas of science, social studies, math, antibias and multicultural curriculum. PA standards will be applied to lesson plans. Observations are a requirement of this class. This is a required course for all ECE majors.

ECE 183—CREATIVE EXPERIENCES 3-0-3
This course focuses on the important role of creativity in Early Childhood Education. The content of the course addresses the importance and development of art, fine art, play, technology, music, creative dramatics, and early literacy curriculum in a developmentally appropriate early childhood classroom. The role of the adult in a developmentally appropriate classroom is examined with special attention given to observation of children's behavior. This is a required class for all Early Childhood Education Majors.

ECE 185—INTRO TO EARLY CHILDHOOD EDUCATION 3-0-3
This course examines the history and models of the field. The role of the professional early childhood practitioner is explored. Discussion of best practices in early childhood education is included. Observations in early childhood classrooms are required. This is a required class for all ECE students.

ECE 186—FAMILY AND SOCIETY 3-0-3
This course explores cultural and social variables and their impact on developing children. Special examination of diversity within families and the impact of families on children are explored. Additional topics include child abuse, alcoholism, poverty, media, violence, child care and school, and stress. This is a required class for all Early Childhood majors.

ECE 187—CHILD CARE MANAGEMENT 3-0-3
This course provides an orientation in the planning and administration of early childhood programs. The course examines interpersonal staff relationships, effective parent communication, program evaluations, regulations, standards and budgets. Professionalism and PA initiatives are emphasized.

ECE 188—INTRODUCTION TO EXCEPTIONAL DEVELOPMENT 3-0-3
This course examines the growth and development of exceptional persons, concentrating on the years from birth to early adulthood. Exceptionalities studied are: mental retardation, learning disabilities, ADHD, physical impairments, autism spectrum disorder, traumatic brain injury, and speech and language impairments. Attention is given to the etiology, prevalence, definitions, characteristics, and the education of individuals with exceptionalities. Special attention is given to the laws addressing special education as well as inclusion. Emphasis is placed on the important roles of families in special education. This is a required course for all Early Childhood Education majors.

ECE 189—EARLY CHILDHOOD LANGUAGE AND LITERACY 3-0-3

This course examines theories, research, and developmentally appropriate practices in language and literacy. Developing strategies to promote speaking, listening, reading, and writing is a major focus. Exploring materials to foster language and literacy development for children birth to age 8 is featured. This is a required course for all ECE majors.

ECE 190—CHILD HEALTH, SAFETY, AND NUTRITION 3-0-3

Designed for early childhood educators and parents. Describes the components of child health, safety and nutrition. Identifies risks to health and safety. Health promotion, disease prevention, and basic care of the child at each developmental stage are examined.

ECE 191—ASSESSMENT AND OBSERVATION-YOUNG CHILDREN 3-0-3

This course highlights principles and techniques of observing children ages 0 to 9 years to document their development and to link observation to program planning. Various assessment tools used by teachers will be explored. Observations of infants, toddlers, preschoolers, and school-age children will be required. This course is a prerequisite to ECE 284.

ECE 194—EDUCATION OF YOUNG CHILDREN WITH SPECIAL NEEDS 3-0-3

This course provides an in-depth study of the education of young children with exceptionalities. The assessment, identification and appropriate education of young children with special needs are the focus. Attention is given to legal aspects and inclusion. Family-based practices and Division for Early Childhood recommended base practices for early intervention will be addressed. Prerequisite(s): ECE 188

ECE 284—EARLY CHILDHOOD EDUCATION PRACTICUM 2-10-4

This course offers an in-depth examination of an early childhood classroom that builds upon ECE 191's basic principles and methods. Professional development is emphasized. Special attention is placed on authentic assessment, curriculum development and unit design. The course requires the completion of 150 hours of practicum experience.

ECN–ECONOMICS

ECN 158—ELEMENTS OF ECONOMICS 3-0-3

This course provides an introduction to economic principles and problems. In examining economic decision making, the course will explore the topics of supply and demand, foundations of the macroeconomy, financial institutions and the Federal Reserve, fiscal and monetary policy, theories of the firm, production, competition and market structures, factor markets and international economics.

ECN 255-MACROECONOMICS 3-0-3

Introduces the principles of macroeconomics with an emphasis on the United States economic system. In examining aggregate economic performance, the course will explore the topics of scarcity and choice, unemployment, inflation, aggregate supply and aggregate demand, money and banks, monetary and fiscal policy, policy debates and international economics. Prequisite(s): MTH 052 or satisfactory placement test scores

ECN 256-MICROECONOMICS 3-0-3

Introduces the principles of microeconomics with an emphasis on individual decision-making. In examining competition and theories of the firm, the course will explore the topics of scarcity and choice, markets and price determination, market structures, labor and financial markets, public goods, regulation/deregulation, and international economics.Prequisite(s): MTH 052 or satisfactory placement test scores

ECN 260—MONEY AND BANKING 3-0-3

The nature and functions of financial markets, institutions and monetary policy will be studied. Topics include an overview of the financial system with an emphasis on money, interest rates, the stock market; economic analysis of banking, central banks and the Federal Reserve System; and the tools, strategies, and tactics of monetary policy. The primary objective is to provide students with the knowledge of the structures and practical operations of major financial markets and the underlying forces which unify them. Prerequisite(s): ECN 255

EDU–EDUCATION

EDU 156—INTRODUCTION TO MIDDLE AND SECONDARY EDUCATION 3-0-3

This is an overview course introducing many topics that will be examined in depth in the future, more specialized courses for middle and secondary education. Course objectives and performance assessments reflect the 10 standards for beginning teachers' licensing and development produced by the Interstate New Teacher Assessment and Support Consortium. Also, there will be a focus on the National Middle School Standards as well as the Pennsylvania Department of Education state standards for both the middle and secondary schools. Students will begin preparing for the praxis I exam and will also complete 40 hours of field experience/observations. Prerequisite(s): Current Act 34, Act 151 and Act 114 clearances

EDU 188—INTRO TO EXCEPTIONAL DEVELOPMENT 3-0-3

This course examines the growth and development of exceptional persons, concentrating on the years from birth to early adulthood. Exceptionalities studied are: mental retardation, learning disabilities, ADHD, physical impairments, autism spectrum disorder, traumatic brain injury, and speech and language impairments. Attention is given to the etiology, prevalence, definitions, characteristics, and the education of individuals with exceptionalities. Special attention is given to the laws addressing special education as well as inclusion. Emphasis is placed on the important roles of families in special education. This is a required course for all Early Childhood Education majors.

EDU 200—INTRODUCTION TO INSTRUCTIONAL TECHNOLOGY 3-0-3

This course is designed for students in a broad range of teaching areas desiring to implement instructional technologies into the teaching/learning experience. Students who successfully complete the course will differentiate, evaluate, prepare and utilize a variety of instructional media in the classroom such as non-projected media, audio, film, video and computer-based instruction. The course combines a variety of learning environments such as lecture, discussion, group activities, and hands-on production.

EDU 250—TEACHING ENGLISH TO SPEAKERS OF OTHER LANGUAGES 3-0-3

This course examines methods of language instruction, providing prospective teachers with tools for teaching child, adolescent and adult English Language Learners. Language acquisition theory, assessment, cultural and linguistic context, and Pennsylvania ELL standards for PreK-12 will be addressed.

EGR–ENGINEERING TECHNOLOGY

EGR 104—ENGINEERING MATERIALS 3-0-3

Surveys the metallic, polymeric and ceramic materials used in industry. The course will familiarize the student with the components of modern manufacturing materials from a standpoint of durability, serviceability and appearance. It focuses on material properties of alloys, iron and steel, nonferrous and ferrous alloys, nonmetallic materials, plastics, ceramics, glass, concrete and wood.
Corequisite(s): MTH 108

EGR 105—MANUFACTURING PROCEDURES 3-0-3

Surveys the methods used to convert engineering materials into useful items. Methods surveyed include casting, powder metallurgy, hot and cold working, machining and surface finishing. Measurement, quality control and corrosion protection are additional topics. Prerequisite(s): EGR 104 or DFT 112 or MET 105

EGR 110—DESCRIPTIVE GEOMETRY 2-2-3

Basic introduction designed to illustrate the graphic solution of engineering problems that can be analyzed in the three-dimensional space relationships and delineated according to the principles of orthographic projection.

EGR 180—PRINCIPLES OF INDUSTRIAL HYDRAULICS **2-4-4**
Incorporates the theory and practical application of hydraulics in the nuclear, robotics and engineering fields. Includes the study of industrial/hydraulic principles; actuators, pumps, air compressors, hoists; servo control valves; timers; switches; relays; flow and pressure control valve; relief valves; spool valves and distribution systems. Troubleshooting, analysis and experiment exercises are conducted on a hydraulic trainer.

EGR 199—ENGINEERING TECHNOLOGY INTERNSHIP **1-12-3**
Students will obtain experience in the engineering field through a combination of occupational instruction and on-the-job training. This course integrates classroom occupational study with a planned supervised practical work experience. Prerequisite(s): Permission of instructor

EGR 210—QUALITY CONTROL **3-0-3**
Covers the fundamentals of industrial quality control including necessary probability and statistics basics, control charts, process capability, sampling, reliability and product liability considerations. Prerquisite(s): MTH 108

EGR 220—INTRODUCTION TO STATICS AND STRENGTH OF MATERIALS **3-0-3**
Study of principles and analysis of stresses which occur in structural elements subjected to static loads. Methods of calculation of reactions, stresses, resultants, shear and moment diagrams and their application in various structural problems. Includes study of force systems. Stresses calculated for tension compression and shear in welded, bolted and riveted joints and safety requirements pertaining to type. Prerequisite(s): PHY 107 or PHY 155

EGR 227—KINEMATICS **2-2-3**
Includes the study of the principles of the kinematics of machines, graphical analysis of motion in terms of position, displacement, velocity and acceleration of machine parts including the concepts of transferring or altering motion through proper design of cams and linkages. Prerequisite(s): PHY 155

ELC–ELECTRONICS

ELC 100—PROGRAMMABLE LOGIC CONTROL I **3-2-4**
Introduces students to the fundamental industrial processes and their control. This course will also include design, function and applications of various industrial controllers.

ELC 102—ELECTRONIC DEVICES **3-2-4**
Includes study of semiconductor diodes, transistors and field effect transistors. The characteristics of these devices and their use in design are studied. Emphasis is given to the transistor as a linear amplifying device. Prerequisite(s): ELC 106

ELC 106—CIRCUIT ANALYSIS I **3-2-4**
Considers the principle electrical quantities; current, voltage and resistance; electrical properties of materials, Ohms law, DC power calculations, series and parallel circuits and series- parallel networks; circuit analysis and conversions, network theorems, measurement instruments and techniques; AC sine wave characteristics, inductive and capacitive circuit and analysis. Corequisite: MTH 052

ELC 107—CIRCUIT ANALYSIS II **3-2-4**
Mathematical techniques developed in Circuit Analysis I are extended to Advanced DC circuits including capacitive and inductive reactances. Exponential responses are investigated. Methods for determining circuit responses with varying frequency sinusoidal voltage and current sources driving them are investigated. Complex notation and complex algebra are used extensively in solving network problems. Prerequisite(s): ELC 106, MTH 108

ELC 114—DIGITAL TECHNIQUES **3-2-4**
Concerned with electronic systems based on Boolean algebra using electronic devices in a switching mode. Logic gates are identified and their characteristics described in terms of Boolean algebra. Boolean theorems and manipulative techniques are used to design combinational logic circuits. Significant logic families and their characteristics are described. Number systems and their conversions are investigated with emphasis on those systems most used in the computer field. Logic devices are combined into the three classes of multi-vibrators. Sequential logic combinations of multi-vibrators, their uses and waveforms are studied. Binary arithmetic and the relevant circuits are investigated. Interfacing of the analog and digital worlds is considered. Prerequisite(s): ELC 106

ELC 191—BASIC PRINCIPLES OF INDUSTRIAL ELECTRICITY **3-2-4**
This course is an introduction to single-phase and three-phase circuits as well as industrial electrical equipment. Detailed explanations of machine construction, principles of their operation, and their connections are operated. Safety is strongly emphasized and special attention is given to explaining all electrical formulas and calculations clearly. Consistent, easy-to-understand explanations and examples are used to explain how each type of machine might be used. A blend of theory, formulas and historical information stimulates interest in the study of industrial electric circuits, symbols and drawings. Hands-on use of equipment occurs in the lab setting.

ELC 192—INDUSTRIAL ELECTRICAL EQUIPMENT **3-2-4**
This course is a continuation in the study and practical application of industrial electrical equipment. This course includes a more in-depth study of industrial electrical devices. During this course, the student wil learn how to operate and troubleshoot various types of industrial electrical equipment. Control and power circuit wiring is performed in the lab. Drawings are made and power distribution panels and connections are completed. Prerequisite(s): ELC 191

ELC 199—ELECTRONICS ENGINEERING INTERNSHIP **1-12-3**
Students will obtain experience in the electronics engineering field through a combination of occupational instruction and on-the-job training. This course integrates classroom occupational study with a planned supervised practical work experience. Prerequisite(s): Permission of instructor

ELC 200—PROGRAMMABLE LOGIC CONTROL II **3-2-4**
Introduces students to the basic concept of automated manufacturing systems including drive mechanisms and sensing devices. This course will give students a background in today's flexible systems. Prerequisite(s): ELC 100

ELC 201—PROGRAMMABLE LOGIC CONTROL III **2-2-3**
Introduces students to automated-manufacturing system troubleshooting. This course is designed to give students practical experience in problem- solving and applications. Prerequisite(s): ELC 200

ELC 202—LINEAR ELECTRONICS **3-2-4**
A continuation of ELC 102 of the study of linear amplification of signals. In this course the frequency effects of reactive circuit components and device reactances are considered. Operational amplifiers are developed and studied as amplifying devices in negative feedback circuits. Applications of negative feedback amplifiers, both linear and nonlinear, are investigated. Voltage regulation in power supply circuits and the techniques involved are studied. Oscillators and the criteria for oscillation are established. Prerequisite(s): ELC 102, ELC 107, MTH 109 or MTH 158

ELC 206—MICROPROCESSORS **3-2-4**
Students will become familiar with the microprocessor as a circuit device, with its architecture and its role in micro- processor-based systems. The organization of these systems will be investigated to specify the roles of buses and ancillary integrated circuits and input and output functions. Particular attention will be given to the interfacing of the microprocessor system with the outside world in both parallel and serial. The student will learn assembly language programming and the use of an assembler to generate object code. Prerequisite(s): ELC 114

ELC 208—INDUSTRIAL ROBOTICS 3-2-4
Investigates the field of industrial robotics with particular attention given to the role of electronics. Includes instruction in the principles of which the industrial robot operates. Because of the widespread use of hydraulics and pneumatics as power sources for industrial robots, these subjects are introduced with particular attention to interfacing with electrical and electronics systems used for control. Electricity as a power source will be covered with emphasis on control devices, systems and circuitry. The electronics technician can be expected to maintain and repair the command and control function of industrial robots, so much of the course will be devoted to this subject. Some specific industrial applications are investigated and future trends are explored. Prerequisite(s): ELC 114

ELC 209—INSTRUMENTATION AND PROCESS CONTROL 3-2-4
Investigates the electronic techniques that are used for measurement and control in process control systems. Closed-loop systems including transducers, signal conditioning and analog and digital controllers will be considered. The overall objective is to prepare graduates to install, adjust and maintain electronic and related parts of commercial and industrial systems. Prerequisite(s): ELC 106

ELC 213—MICROPROCESSOR APPLICATIONS 3-2-4
A continuation of Microprocessors and includes a more in-depth study of peripherals and interfacing, microprocessors with peripheral devices. Students study later generation chips to include 16-bit microprocessors. Special purpose microprocessor-based systems are introduced and related to microcomputer and industrial applications. Prerequisite(s): ELC 206

ELC 221—INDUSTRIAL MOTOR CONTROLS 3-2-4
This course will review up-to-date information on basic relay control systems and solid state devices commonly found in an industrial setting. Essential information for controlling industrial motors, along with commonly used devices in contemporary industrial settings will be reviewed. Students will gain a fundamental understanding of the operation of non-reversing motor starters, reduced voltage starters, reversing motor starters, and other applications that employ electrical devices. The essential information for controlling industrial motors and other commonly used devices in contemporary industrial settings are covered. Students will learn the concepts and applications of motor and motor control design, application, installation and maintenance, protection and control logic. Motor maintenance practices and smart motor control centers will be discussed. Prerequisite(s): ELC 192

ELC 222—ADVANCED INDUSTRIAL MOTOR CONTROLS 3-2-4
Students will learn the proper application of maintenance practices to eliminate unplanned motor failure. AC and DC drives will be reviewed. PLCs will be discussed in detail. The trouble shooting techniques will be discussed as they relate to preventative maintenance and motor operations. The essential information for controlling industrial motors and other commonly used devices in contemporary industrial settings are covered. Students will learn the concepts and applications of motor and motor control design, application, installation and maintenance, protection and control logic. Motor maintenance practices and smart motor control centers will be discussed. A final lab project will be developed as a capstone experience. Prerequisite(s): ELC 221

ELC 223—POWER DISTRIBUTION AND TRANSMISSION 3-2-4
This course is designed to develop a comprehensive understanding of the activities associated with electric utility line work, specifically; sub-transmission circuits, distribution substations, primary feeders, distribution transformers, secondary power systems, and customer connections. Students will engage in classroom and laboratory activities to develop the basic technical skills necessary to obtain a working knowledge and understanding of power distribution and transmission systems. Safety is strongly emphasized and special attention is given to explaining relevant electrical formulas and calculations. Consistent, easy-to-understand explanations and examples are used to explain the operation of each system. A blend of theory, formulas, lab work and historical information stimulates interest in the continuing study of electric utility line work. Hands-on use of equipment occurs in a lab setting. Prerequisite(s): ELC 106, ELC 107, ELC 191, EUT 101, EUT 102

EMA–ELECTRICAL MECHANICAL AUTOMATION

EMA 110—ELECTRICAL COMPONENTS 3-2-4
This course is a study of the basic electrical components in a mechatronic system. Topics covered will include basic functions and physical properties of electrical components; the systematic flow of energy and measurement of components; troubleshooting techniques and strategies to identify, localize and correct malfunctions; and systematic preventive maintenance and electrical component safety. Technical documentation such as data sheets, schematics, timing diagrams and system specifications will also be covered.

EMA 120—MECHANICAL COMPONENTS AND ELECTRIC MOTORS 3-2-4
This course is a study of the basic mechanical components and electrical drives in a mechanical system. Topics covered will include basic functions and physical properties of mechanical components and electrical AC and DC drives; materials. lubrication requirements and surface properties; troubleshooting techniques and strategies to identify, localize and correct malfunctions; and systematic preventative maintenance and electrical component safety. Technical documentation such as data sheets and specifications of mechanical elements and electrical drives will also be covered.

EMA 130—ELECTRO-PNEUMATIC AND HYDRAULIC CONTROL CIRCUITS 3-2-4
This course covers the basics of pneumatic, electro pneumatic and hydraulic control circuits in a complex mechatronic system. Students will learn the functions and properties of control elements based upon physical principles and the roles they play within the system. Technical documentation such as data sheets, circuit diagrams, displacement step diagrams and function charts will also be covered. By understanding and performing measurements on the pneumatic and hydraulic control circuits, students will learn and apply troubleshooting strategies to identify, localize and correct malfunctions. Preventive maintenance of (electro) pneumatic and hydraulic components as well as safety issues within the system will be discussed.

EMA 140—DIGITAL FUNDAMENTALS AND PROGRAMMABLE LOGIC CONTROLLERS 3-2-4
This course is a study of basic digital logic and programmable logic controllers (PLCs) in a mechatronics system using the automation system. Topics covered will basic PLC functions and testing; identification of malfunctioning PLCs; and troubleshooting techniques and strategies to identify and localize PLC hardware generated problems. Emphasis is on writing small programs and problem-solving using computer simulations.

EMA 210—PROCESS CONTROL TECHNOLOGY 3-2-4
This course is a study of the Process Control technologies associated with a complex mechatronics system. Topics covered will include the Closed Loop Control; interaction between controllers, sensors and actuators; controller operating parameters; PID controllers; ON/OFF and PID controller; and the differences between controllers typically used in mechatronic systems. The analysis of plant documentation and manuals, the creation and interpretation of charts with diagrams for time-based changes of measured values will also be covered. Prerequisite(s): EMA 110, EMA 120, EMA 130, EMA 140

EMA 220—TOTALLY INTEGRATED AUTOMATION 3-2-4
This course is an introduction to Totally Integrated Automaton. Topics covered will include the automation pyramid, analogue sensors and actuators, STEP 7 functions, MPI-BUS and PROFIBUS systems, and systems maintenance and troubleshooting. Prerequisite(s): EMA 110, EMA 120, EMA 130, EMA 140

EMA 230—AUTOMATED SYSTEMS 3-2-4
This course is a study of the automation systems utilized with a mechatronics system. Topics covered will include Metal Cutting, Modal Analysis, CNC, CAD, CAM, programming and microcontrollers that are used in modern manufacturing technologies. Prerequisite(s): EMA 110, EMA 120, EMA 130, EMA 140

EMA 240—MOTOR CONTROL 3-2-4
This course covers the principles of AC and DC motors, motor control and general machine operations in a complex mechatronic system. Students will learn the functions and properties of machine control elements and the roles they play within the system. Topics covered will include general machine operations and motor control techniques; mechanical components and electric drives; motor sensors, braking and loads; motor efficiency and power; preventive measures; and troubleshooting techniques, Technical documentation such as data sheets, circuit diagrams, schematics, displacement step diagrams and function charts will also be covered. By understanding and performing measurements on motors and motor control circuits, students will learn and apply troubleshooting strategies to identify, localize and correct malfunctions. Safety issues within the system will also be discussed; Prerequisite(s): EMA 110, EMA 120, EMA 130, EMA 140

EMA 250—MECHANICAL COMPONENTS AND SYSTEMS 3-2-4
This course is a study of the mechanical components that are included in a complex mechantronic system Topics covered will include an overview of statics and kinetics with a focus on force system analysis, study of equilibrium, frames and machines, friction and the effects of forces on the motion of objects. Fundamentals and classification of machine elements to include calculations involving force, stress and wear analysis will also be covered. Prerequisite(s): EMA 110, EMA 120, EMA 130, EMA 140

EMA 260—MANUFACTURING PROCESSES 3-2-4
This course is a study of manufacturing improvement processes in a mechatronic system using the automation system for real world application. Topics covered will include basic statistics for improvement, manufacturing teams, process waste, OEE, process capability, continual improvement, fish bone diagrams, kaizen activities, TPM and basic time study methods. Emphasis is using a team project with final presentation to apply improvement methods in real world application. Prerequisite(s): EMA 110, EMA 120, EMA 130, EMA 140

ENG–ENGLISH

ENG 085—COLLEGE LITERACY I 4-0-4
College Literacy I develops proficiency in integrated and contextualized reading and writing skills and strategies. Topics include reading and writing processes, critical thinking strategies and recognition and composition of well-developed, coherent and unified texts. Students will also cover the fundamentals of study strategies, grammar, punctuation, mechanics, and sentence and paragraph structure. Upon completion, students should be able to demonstrate and apply those skills toward an understanding of a variety of complex academic and career texts while also composing texts, incorporating relevant, valid evidence. Students who pass ENG 085 with a B or C may register for ENG 095/ENG 161. Students who pass with an A may register for ENG 161.

ENG 095—COLLEGE LITERACY II 4-0-4
College Literacy II develops proficiency in integrated and contextualized reading and writing skills and strategies. Topics include reading and writing processes, critical thinking strategies, and recognition and composition of well-developed, coherent and unified texts. The skills taught include but are not limited to: thesis statement, supporting details, critical reading, documentation and vocabulary development. Upon completion, students should be able to demonstrate and apply those skills toward understanding a variety of complex academic and career texts and composing texts, incorporating relevant, valid evidence. To be considered to have met their developmental requirements, students must complete ENG 095 with a C or better. ENG 095 is taken in conjunction with ENG 161.

ENG 161—COLLEGE WRITING 3-0-3
This course covers the fundamentals of college writing including the paragraph, expository essay patterns, and the argumentative essay. Emphasis is placed on developing a coherent thesis, writing concisely and clearly, and adapting one's writing to a particular audience. In addition, it will foster an appreciation of cultural diversity, explain how experiences and attitudes shape an individual's reading, and demonstrate how language can shape thinking. This course also emphasizes self-editing, mechanics, grammar, and word choice. It provides the basis for students to produce a range of effective writing from technical and business communications to research papers and critical essays. Prerequisite(s): ENG 070, RDG 080 or satisfactory Placement Test score

ENG 162—TECHNICAL COMMUNICATION 3-0-3
Technical personnel are called upon to communicate in a variety of ways in their daily work. This course includes training in the writing of memos, business letters, instructions, resumes, summaries, proposals, and technical reports such as the progress report. The course also addressed the proofreading and editing on one's own writing, reading critically in a technical field, developing listening skills, and interacting in discussion and problem-solving groups. Prerequisite(s): ENG 161

ENG 163—BUSINESS COMMUNICATION 3-0-3
Stresses the application of skills central to all types of communications business personnel are called upon to use in their daily work in the office and the marketplace. Includes training in the writing of business correspondence, job related forms and formal reports; proofreading and editing; reading and understanding the vocabulary of the business world; methods of gathering and organizing information; preparing and presenting daily data orally before groups; using the concepts of advertising and public relations and participating in problem-solving discussion groups. Prerequisite(s): ENG 161

ENG 164—ADVANCED COMPOSITION 3-0-3
This course further develops and refines the student's abilities in expository and argumentative writing, introducing the student to the methods, techniques, and materials of research. The written work of the course includes the completion of an in-depth research paper done by the student under the instructor's supervision. The course continues to stress conciseness and clarity of expression; reviews mechanics implicit in correction and revision of written composition; and teaches English usage and grammar as needed. Prerequisite(s): ENG 161

ENG 165—CREATIVE WRITING 3-0-3
Acquaints students with the techniques of writing description, poetry and short fiction. Student writings will be viewed as statements of the individual's creative self as well as work to be considered for publication. It is advised that students complete a literature course before taking this course. Prerequisite(s): ENG 161 or permission of instructor

ENG 166—HUMAN SERVICES WRITING 3-0-3
Course stresses skills necessary for human services writing. In addition to stressing writing skills, course provides direction and practice in the generation of specific documents student is likely to produce in his/her field. Special attention is given to writing characterized by accuracy, objectivity and clarity. Course includes training in job-related forms and human services reports such as social histories, case notes, court reports, summary reports, records, interviewing and observations, social histories, memos and letters. Students will learn elements of content and the structure of records used in the human services field. Special emphasis is placed on separating factual information and interpretive analysis.

ENG 168—POLICE REPORT WRITING 3-0-3
Course stresses skills necessary for criminal justice writing. In addition to stressing writing skills, course focuses on the practical application skills central to all types of communications criminal justice personnel are called upon to use in their daily work. The course includes training in job-related forms and the reports, such as narrative reports, search warrants, affidavits of probable cause, and reports for tracking and logging of evidence. Course stresses proofreading and editing, research methods, reading in the field, development of listening skills, and interacting in discussion and problem-solving groups. Special emphasis is placed on separating factual information and interpretive analysis. Prerequisite(s): ENG 161

ENG 233—CHILDREN'S LITERATURE 3-0-3
This course familiarizes students with a wide variety of literary genres ranging from traditional folk tales and nursery rhymes to modern fiction. Attention will be given to the history and the critical study of children's literature and practical application of methodology in the classroom.

ENG 240—SCIENCE FICTION 3-0-3
Introduces the foundations, traditions and trends of the genre of science fiction. In examining classic and contemporary works, the course will explore themes such as time travel, social satire dehumanization, utopia, visions of technical innovations and encounters with aliens. Corequisite(s): ENG 161

ENG 245—CREATIVE WRITING II 3-0-3
This course is designed to give the student an additional opportunity to develop creative writing abilities. An array of exercises and examples from fiction and poetry will allow students to explore different options in creatively expressing themselves in writing and in presenting work publicly. Using techniques of poetry and fiction established in ENG 165, students will compose longer works: small collections of poetry, longer short stories, themed collections or chapters from a novel. Imagination, creativity and discipline in creating a writing life will be stressed. Prerequisite(s): ENG 165 (ENG 256 is also recommended)

ENG 250—TEACHING ENGLISH TO SPEAKERS OF OTHER LANGUAGES 3-0-3
This course examines methods of language instruction, providing prospective teachers with tools for teaching child, adolescent and adult English Language Learners. Language acquisition theory, assessment, cultural and linguistic context, and Pennsylvania ELL standards for PreK-12 will be addressed.

ENG 255—INTRODUCTION TO LITERATURE 3-0-3
Introducing students to literary analysis, the content of this course varies, but relies most heavily on short stories and emphasizes both critical analyses of the works presented as well as the social/historical contexts in which they were written. Students are encouraged to develop their own ideas as they become familiar with various critical approaches to the texts. Students are asked to identify that which constitutes literary value in a text and are encouraged to broaden their definitions of literary culture.

ENG 258—SURVEY OF WORLD LITERATURE 3-0-3
Covers western and non-western literary classics and their relevant modern counterparts. The types of literature covered include the epic, the tale, the novel, drama, the essay, and poetry. A comparative approach is used in dealing with such themes as war, adventure, love, social customs, and death and the afterlife.

ENG 264—INTRODUCTION TO JOURNALISM 3-0-3
Introduces journalistic principles and practices with an emphasis on the tools and skills used by contemporary reporters in collecting information and writing news articles. The course also includes a study of the news media and their influence on society. Prerequisite(s): ENG 161

ENG 275—WORLD MYTHOLOGIES 3-0-3
A survey course designed to introduce students to definitions of and theories about myth; to discuss and analyze myths of various cultures around the world and throughout time. The relevance of myth to everyday, modern life will also be stressed. Themes covered will be the creation of the cosmos, the natural environment and humans; ideas about divinity and heroism; concepts about death and the afterlife.

ENG 279—WOMEN'S LITERATURE 3-0-3
This course will familiarize students with the main issues surrounding the texts of women writers, their audiences, and the mythological representations that work for and against their literary activism. It will concentrate on the diversity of women's writing as it pertains to genre; to the cultural, economic and political identities of women; and to the transformative power of their voices within their cultures. Students will develop an understanding of women's creative writing through feminist critical theory and new historical criticism.

ENG 290—SHAKESPEARE 3-0-3
This course combines an in-depth study of Shakespeare's plays using traditional text, staging/directing techniques and the medium of film.

EPS–EARTH AND PLANETARY SCIENCE

EPS 150 – ASTRONOMY 3-2-4
An introduction to the solar system with an emphasis on the sun, major and minor planets, earth-moon system, etc., and the study of physical laws of motion and properties of light. Some night observation and lab work are an important part of this class.

EPS 160—EARTH SCIENCE 3-0-3
A physical science course with emphasis on topics from astronomy, meteorology, oceanography, and geology, focusing on the earth as the physical environment in which we live. This course also covers man's impact on the environment.

EPS 163—INTRODUCTION TO PHYSICAL GEOLOGY 3-2-4
Deals with materials, land forms and structural features of the earth and the biological, chemical and physical processes that produced them. Topics include water; wind and glaciers; the construction and composition of rocks and minerals; the formation and deformation of rockbeds; earthquakes and volcanoes; the interior processes and origins of the earth.

ESL–ENGLISH AS A SECOND LANGUAGE

ESL 100—ENGLISH AS A SECOND LANGUAGE 3-0-3
Utilizing an integrated skills approach, this course provides learners of English as a second/additional language with appropriate instruction and training to enable them to engage confidently in communication tasks required for academic success. All four language skills (speaking, listening, reading and writing) are employed to engage students in the comprehension and production of academic discourse as practiced in the United States. Pre-requisite: First language other than English

EUT-ELECTRIC UTILITY TECHNOLOGY

EUT 101—OVERHEAD LINE TECHNOLOGY I 1-16-5
This course provides the student with the basic essentials for powerline workers, including but not limited to personal safety and accident prevention; managing risk factors and hazards in the field; selecting the proper climbing apparatus; working with poles, towers and vaults; and working with conductors and cable, both overhead and underground. A review of electrical power systems, electrical units, alternating current, series and parallel circuits and three phase circuits will also be addressed.

EUT 102—OVERHEAD LINE TECHNOLOGY II 1-16-5
This course emphasizes the skills required to perform work on secondary voltage circuits. Emphasis will be given to the installation of services. street lighting and secondary circuits, bucket truck familiarization and bucket rescue. Overview of distribution electrical systems and Occupational Safety and Health Administration (OSHA) rules are also included. Based on the Commercial Driver's License (CDL) training schedule in EUT-101, students may elect to complete training and obtain a Class "S" CDL as part of EUT-102. Safety topics also presented include: work zone traffic control; minimum approach distances; rubber protective equipment; and knowledge of UD excavation/trenching/shoring. Prerequisite(s): EUT 101

EUT 201—OVERHEAD LINE TECHNOLOGY III 1-16-5
This course emphasizes the skills required to identify, install and maintain primary underground residential distribution (URD) equipment, including various methods of troubleshooting URD primary and secondary circuits. Grounding distribution circuits will also be presented in detail. Students will develop the knowledge and skill to safely perform rubber gloving assignments utilizing the "insulate and isolate" techniques, and will perform various task while working on an energized three-phase circuit under controlled conditions. Safely topics include: fire extinguisher safety, temporary protective grounds, stored energy devices and utilities protective services. Prerequisite(s): EUT 102

EUT 202—OVERHEAD LINE TECHNOLOGY IV 1-16-5
Supervised practical applications of electrical overhead line worker job duties in a setting under direct supervision of FirstEnergy personnel. Emphasis on line equipment, hot line tools, power industrial trucks and transmission (including wood pole, steel pole, ladder and tower climbing). Bucket, pole top and self rescue will also be reviewed. Safety topics include: spill response, live line tools, hazardous communications and accident prevention handbook review. Prerequisite(s): EUT 201

FIN-FINANCE

FIN 155—PERSONAL FINANCE 3-0-3
This course analyzes the personal and financial situations that confront individuals in our society today. Topics include: basic economics as it relates to individuals, budgeting and financial planning, renting versus owning a home, home financing options, purchasing versus leasing a vehicle, savings and borrowing techniques, liability and health insurance options, investment planning and strategies, retirement and estate planning, and the safety and security implications of purchasing items over the Internet.

FIN 220—BUSINESS FINANCE 3-0-3
This course examines the organization and financial management of a firm with an emphasis on risk and return. Topics include financial statement and cash flow analysis, time value of money, valuation of stocks and bonds, capital budgeting and financing decisions. Prerequisite(s): ACC 155 or ACC 165

FIN 246—RISK MANAGEMENT 3-0-3
Portrays an overview of the field of insurance as an institution applying to business, society and government. Presents fundamentals of insurance contracts, such as property and casualty, life and health, and government.

FIN 263—SMALL BUSINESS FINANCE 3-0-3
This course introduces the student to the use of financial controls in the administration of small businesses. Topics will include budgeting, profit analysis, development of cash flow statements, cost control, tax planning, economic order quantity analysis and how to set up records for proper business control.

FIN 266—FINANCIAL STATEMENT ANALYSIS 3-0-3
This course emphasizes the use of financial and accounting information. This course helps students develop a systematic approach to analyzing reported data and understanding the underlying risks and possible inconsistencies across companies. Topics will center on ratio analysis, financial projections, working capital management, capital budgeting, the cost of capital, capital structure and planning and divided policy. Prerequisite(s): FIN 220

FRN–FRENCH

FRN 155—BEGINNING FRENCH I 3-2-4
A beginning language course with emphasis on elementary speaking, reading, writing and comprehension.

FRN 156—BEGINNING FRENCH II 3-2-4
Continuation of FRN 155; increased conversational ability and emphasis on reading and writing French. Prerequisite(s): FRN 155

FRN 255—INTERMEDIATE FRENCH I 3-0-3
A continuation of FRN 156. Although the approach will be a communicative one, writing and reading skills will be developed along with the speaking and listening skills. The course will be organized according to the guidelines for proficiency language learning. Prerequisite(s): FRN 156

FRN 256—INTERMEDIATE FRENCH II 3-0-3
A continuation of FRN 255. Students will continue to improve communication skills with four areas of speaking, listening, reading and writing being stressed. A proficiency oriented approach and materials will be used. Prerequisite(s): FRN 255

FSM–RESTAURANT/CULINARY MANAGEMENT

FSM 101—FOOD SAFETY CERTIFICATION 1-0-1
A study of food and the methods needed to control contamination and microbial growth. The principles of HACCP and food safety standards and regulations will be presented. Emphasis is given to developing a working environment which will provide the consumer with wholesome, safe food that conforms to the standards of the regulatory agencies. This course is offered in conjunction with the Educational Foundation of the National Restaurant Association. The certificate received for successful completion of the ServSafe exam is recognized by the Pennsylvania Department of Agriculture for food employee certification. Student must pass the exam to successfully complete the course.

FSM 103—INTRODUCTION TO THE HOSPITALITY INDUSTRY 3-0-3
An overview of the careers and opportunities in food service, lodging and tourism with an emphasis on employability skills. Individual responsibilities, current industry issues, and future trends are explored. Transportation to off-campus locations and the cost of the required etiquette event are the responsibility of the student.

FSM 105—FOODS I 2-4-4
Introduction to food preparation and theory will introduce the student to the application of principles of food cookery. Principles relating to various categories of food preparation will be investigated and then applied in a laboratory situation. Sanitation and safety procedures will be emphasized. Uniforms and program tool kit required for all lab classes.

FSM 112—QUANTITY FOODS 1-6-4
A continuation in food preparation, with some cooking in quantities. Teaches the reasons for preparing foods in various ways to satisfy the clientele; also what commercial equipment is available to produce the best quality end-product. Major emphasis is placed on menu planning, standardizing recipes and food production. The student is made aware of work simplification, cost control organization and administration. Student assumes various positions such as manager, cook, baker, etc. in lab periods and operating student-run cafe. Uniforms and program tool kit required. Prerequisite(s): FSM 105

FSM 113—CUSTOMER SERVICE 3-0-3
Students will be taught to deliver high-quality service in various positions throughout the hospitality and tourism industry. Emphasis will be given to establishing a service strategy, selecting and training service employees, and delivering customer-friendly systems of operation. Students are responsible for the cost of the required secret diner experience.

FSM 117—WAIT STAFF/DINING ROOM TRAINING 1-0-1
Emphasizes techniques, procedures and styles of proper food and beverage service. The responsibilities, qualifications and conduct of waitstaff personnel will also be presented. The course is designed for students and managers who are interested in the training of food servers. It is also designed for those individuals who are employed in the field or those who are seeking employment as a waitstaff person and have had no training. Dining room attire required.

FSM 118—SANITATION 2-0-2
A study of food and environmental sanitation and safety in food service. Emphasis is given to the study of foodborne illnesses and their origins as well as the precautionary measures that must be taken to prevent these illnesses. Providing the consumer with wholesome, safe food that conforms to the standards of the regulatory agencies is stressed. Upon completion of the course, a final certification exam furnished and corrected by the Educational Foundation of the National Restaurant Association will be administered. The certificate received for successful completion of the ServSafe exam is recognized by the Pennsylvania Department of Agriculture for food employee certification. Students must pass the exam with a minimum score of 75% to successfully complete the course.

FSM 119—BEVERAGE MANAGEMENT 1-0-1
A study of beverage and dining room services. Information will be given on cost and product controls, inventory control, industry standards and personnel training and staffing. Emphasis will be given to liquor liability responsibilities and government agencies. Basics of mixology will also be presented. Dining room attire required.

FSM 120—WINE APPRECIATION AND SERVICE 1-0-1
An in-depth study of wine production and classifications. Emphasis is given to pairing of wine and food, formal wine service, and service needed to enhance customer appreciation. Dining room attire required.

FSM 157—CATERING 1-4-3
Introduces the principles, operations and different organizational structures of service catering. Emphasis will be on menu planning, costing, business records, insurance, government regulatory information, garnishing for merchandising, equipment and personnel training for this type of operation. Lab experience will involve recipe testing and production for a selected number of class catering experiences. Transportation to off-campus locations is the responsibility of the student. Uniforms and program tool kit required. Prerequisite(s): FSM 105 or permission of instructor

FSM 159—NUTRITION 3-0-3
The student learns the nutrients, their sources and their relation to body functions. Each stage of the life cycle will be studied as it relates to changing nutritional requirements. General nutrition is discussed including the social, economic and psychological implications of food and eating.

FSM 170—FOOD CULTURE AND RELIGION—DEFINING CUISINE THROUGH RELIGION AND CULTURE 3-0-3
This course identifies and investigates the relationship of food/cuisine to culture and religion. Emphasis will be given to religious dietary laws and practices, food symbolism and taboos, religious and cultural feasts, festivals and traditions.

FSM 213—A LA CARTE KITCHEN 1-6-4
A combination of learning experiences, self-evaluation and operating systems that pertains to a la carte service. The student will manage and operate the student-run Cafe. The learning experience includes purchase requisitions, recipes, costing, production schedules and inventory. Uniforms and program tool kit required. Prerequisite(s): FSM 105 and FSM 112

FSM 215—FOOD PURCHASING AND MENU MANAGEMENT 3-0-3
Includes factors to consider in selecting, purchasing, receiving and storing various foods. Emphasis is given to the development of purchasing policies, procedures, inventory control, storage, costing, financial controls and menu development and management. Computer application is included in the course.

FSM 218—HOSPITALITY MARKETING 3-0-3
The Hospitality Marketing course introduces students to marketing techniques associated with hotel, restaurant and travel fields with an emphasis on identifying and satisfying needs of customers. Topics include target marketing, and marketing segmentation, marketing research, marketing strategies, marketing plans, promotion, public relations, advertising and menu planning.

FSM 219—HOSPITALITY INTERNSHIP 1-20-3
A supervised and evaluated on-the-job training experience in a hospitality setting. Students will discuss their experience and career opportunities. Job-site must be approved by instructor. Uniforms, cutlery set and decorative tips may be required. Prerequisite(s): Permission of instructor

FSM 225—HOSPITALITY STUDY TOUR I 3-0-3
Allows students to experience the cultural and economic aspects of the hospitality industry in this study location. Actual observation and the study of systems of operation unique to this area will occur and what you learn will be applied to the American industry. Travel expenses and fees are the responsibility of the student. Prerequisite(s): Permission of instructor

FSM 226—HOSPITALITY STUDY TOUR II 3-0-3
Provides students with a second experience of the cultural and economic aspects of the hospitality industry in this study location. Actual observation and the study of systems of operation unique to this area will occur and what you learn will be applied to the American industry. Travel expenses and fees are the responsibility of the student. Prerequisite(s): Permission of instructor and FSM 225

FSM 235—SUPERVISION AND TRAINING 3-0-3
Involves supervision and training for personnel in the hospitality industry. The course plan of study includes history of management, functions of management, management challenges of the future and industry regulations and personal development to achieve goals within the hospitality industry.

FST–FIRE SCIENCE

FST 101—INTRODUCTION TO FIRE SCIENCE 3-0-3
A survey of various fields of study in the fire science curriculum, exploring the two major components: suppression and prevention. Topics include: the fire problem and fire protection organizations; codes and fire-safe building design; fire behavior and hazards of materials; extinguishing agents and systems; fire detection devices and municipal fire department organization and administration.

FST 103—FIRE SERVICE ADMINISTRATION 3-0-3
Trains the prospective officer in proper management techniques and methods by reviewing classical management theories, records, reports, and evaluations; personnel management; leadership and control; fireground management and the management cycle.

FST 104—FIRE SERVICE HYDRAULICS 3-0-3
Prepares the firefighter to effectively move and apply water in various fireground situations. The principles and rules of hydrostatices and hydrokinetics are taught by instruction in: flow-through orifices, water systems and testing; pump theory and operation; fire streams and delivery equipment; fireground hydraulics and calculations; and firefighting foams and equipment

FST 105—PUBLIC FIRE EDUCATION 3-0-3
Introduces the concepts of fire prevention, with emphasis on public fire education. Inspections, code violations, and record keeping are reviewed as part of the six functions of fire prevention.

FST 107—FIRE PROTECTION SUPPRESSION SYSTEMS AND ALARMS 3-0-3
Prepares the fire science student in the use, application and testing of suppression and detection systems. Water sprinkler systems; CO2, dry chemical, Halon, foam and explosion suppression systems and flame, heat and smoke detection devices are reviewed.

FST 109—BUILDING CODES AND STANDARDS 3-0-3
Emphasizes the usage of the BOCA Basic Building Code to attain firesafe building designs through the use of nationally recognized standards and regulations. Surveys code enforcement and administration responsibilities, use-group classifications and construction types, building limitations and special usages, egress design and materials and testing, structural loads and fire protection systems, construction terminology and architectural functions and plans. Prerequisite(s): FST 101

FST 110—FIRE APPARATUS AND EQUIPMENT 3-0-3
Acquaints fire service personnel with basic apparatus requirements, design, procurement and testing. Code requirements for portable equipment and apparatus are also discussed. Pump theory chassis design and large-diameter hose are reviewed.

FST 112—ARSON INVESTIGATION 3-0-3
Instructs fire, police, insurance and private sector personnel about the mushrooming arson and related problems confronting and impacting the entire nation today. Provides instruction in arson awareness and recognition to accomplish early detection of possible crimes and appropriate follow-up investigations. Prerequisite(s) FST 101, FST 222

FST 114—LIFE SAFETY AND REGULATORY REQUIREMENTS FOR SPECIAL OCCUPANCIES 3-0-3

Study of the current National Fire Protection Association Life Safety Code 101 and fire protection requirements in special occupancies such as health care, detention and corrections, educational, dormitories, hotels, apartments, board and care homes, mercantile, business, industrial and storage occupancies. The student learns specific requirements for fire alarms, sprinkler systems, fire drills, test and maintenance of equipment and emergency lighting for these occupancy types. A study of the fire protection regulatory requirements of the various Pennsylvania departments and bureaus are also covered.

FST 115—FIRE SERVICE OCCUPATIONAL SAFETY 3-0-3

Presents the requirements and procedures to effectively develop a fire department safety program. Qualifications, responsibilities, and roles of the department and incident safety officer will be reviewed. Physical fitness, training, apparatus, equipment, personal protective equipment, operations and special hazards are covered. Techniques for risk management and program auditing are presented.

FST 201—HAZARDOUS MATERIALS 3-0-3

Teaches principles for the control of hazardous material incidents in the manufacturing, shipping, storage, use and disposal cycle are taught. Topics include: the hazardous material incident; basic chemistry and health hazards; explosives, oxidizers and radioactive materials, cryogenics, compressed gases and flammables; the identification planning, command and decision-making processes and the various transportation modes and hazards.

FST 209—BUILDING CONSTRUCTION FOR THE FIRE SERVICE 3-0-3

Acquaints the fire science student with the various types of existing building construction and fire's effect upon each type of material used. This includes wooden construction, ordinary construction, mill construction, 19th century "fireproof" buildings, and steel and concrete construction.

FST 211—SURVEY OF FIRE INSURANCE RATING AND LOSS CONTROL 3-0-3

An overview is given of the insurance industry as it relates to fire insurance rating and loss control. Topics include: the insurance industry and how rates are developed; insurance company divisions; the insurance service office and municipal grading; public water supplies and suppression systems; the public fire department and loss control surveys.

FST 215—FIRE TRAINING OFFICER DEVELOPMENT 3-0-3

Instructs fire training officers in the standards and procedures for the training of firefighters and recognized by national standards and agencies with instruction in: the communications process and learning principles; instructional methods; training aids and recordkeeping. Prerequisite(s): FST 103

FST 216—INDUSTRIAL FIRE BRIGADES 3-0-3

A course designed to assist local industrial firms in initiating, developing and implementing the brigades which will be involved with the extinguishment or control of fires until the fire department arrives at the scene. Requirements of the OSHA regulations are reviewed as are recordkeeping, suppression systems and fire prevention activities.

FST 220—FIREFIGHTING TACTICS AND COMMAND 3-0-3

Trains command personnel in the priority of operations, fire spread and behavior and decision making during emergency operations. Topics discussed include the size-up process, rescue and protection of exposures; confining and extinguishing the fire, overhauling the fire, and the procedures of salvage and ventilation. Prerequisite(s): FST 104

FST 221—FIREFIGHTING TACTICS AND COMMAND II 3-0-3

Continuation of fire ground tactics and command with emphasis on large area structures, flammable liquid storage in bulk plants, high rise structures, windowless buildings and buildings under construction. Sectoring, resource management and command at large incidents are covered. Prerequisite(s): FST 220

FST 222—LEGAL ASPECTS OF THE PENNSYLVANIA FIRE SERVICE 3-0-3

Acquaints advanced fire science technology students with legal problems and situations encountered with the Pennsylvania fire service. Case studies on breaking and entering, criminal trespass, assault, negligence, contracts and product liability are covered.

FST 224—PLANS REVIEW FOR FIREFIGHTERS 3-0-3

Study of engineering drawing principles using blueprint symbols, projections, cross-section and assembly drawings, scaling and dimensioning and use of the BOCA plan review form. Prerequisite(s): FST 109

GCT–GRAPHIC COMMUNICATIONS

GCT 100—DESIGN TECHNOLOGY 1-0-1

This fundamental course explores the essential concepts of the iOS mobile platform, creating, editing, presenting layouts, and vector and pixel-based graphics, while managing content across devices, the desktop and the web. Students explore communicating and sharing resources with peers/team members and printing directly from devices.

GCT 115—DESIGN & LAYOUT I 3-0-3

This fundamental course in two-dimensional communication design exposes students to Adobe design software and scanning techniques, explores layout and design principles, color decisions, typography choices and working with vector and pixel-based imagery. Students explore the influence of modern/contemporary and postmodern movements and associated cultural tendencies.

GCT 125—EMERGING TECHNOLOGY I 3-0-3

An introductory course exploring Adobe Flash authoring, Edge Animate web motion and interaction design, and Fireworks environments for creating and delivering immersive web experiences, applications, games and animated multimedia content. Students create content for web, digital publishing, and rich media advertising for desktop and mobile platforms implementing HTML5, Javascript and CSS3 web standards and best practices. Basic experience with adobe Photoshop or Illustrator recommended.

GCT 131—TYPE & PUBLISHING I 3-0-3

Introduction to typography, core features and tools of page layout design using Adobe InDesign, master pages, fundamental typographic theories, process and spot color, integrating vector graphics and raster imagery into a series of compositions, and how to package, print and export your finished project.

GCT 151—ART & ILLUSTRATION I 3-0-3

An introductory course exploring Adobe Illustrator's art and illustration environment for creating and delivering visually compelling, scalable vector artwork for use in projects for both print and the web. Students will apply their art and design skills to create attention-getting images for creative entertainment, advertising and branding, and design elements for web and mobile content.

GCT 155—GRAPHICS & LETTERING I 3-0-3

Continued study of Adobe Illustrator, layout and design, spot color and environmental typography as the primary design form for producing basic custom apparel imagery, auto restyling artwork, indoor/outdoor graphics, and label and signage solutions incorporating commercial art techniques and vinyl print/cut technologies. Corequisite(s): GCT 151

GCT 161—DIGITAL IMAGING & EDITING I 3-0-3

An introductory course exploring how to use Adobe Photoshop efficiently and effectively. The course covers nondestructive editing techniques using layers, masking, adjustment layers, blend modes and Smart Objects, as well as how to achieve creative effects with filters, layer effects and illustrative type for creating panoramas and composites.

GCT 163—EMERGING TECHNOLOGY II 3-0-3
An introductory course exploring the constantly changing web design landscape of design and typography; planning and usability; and the business aspects of web design. Students create UI elements, web graphics, wire frames and a functional mockup including responsive templates, color and font theme, and a UI kit of elements using Adobe Photoshop, Illustrator and Fireworks. The course web design workflow also includes optimizing web graphics and creating image sprites and integration with other web apps. Basic experience with Adobe Photoshop or Illustrator recommended.

GCT 185—PRINT & PREPRESS I 3-0-3
This print production essentials course introduces the printing process, from choosing the correct paper, inks, colors and fonts and correctly laying out the project in Illustrator and InDesign, adding spot colors and varnishes, to getting the final professionally finished print job from the printing press floor. Corequisite(s): GCT 131, GCT 151, GCT 161

GCT 215—DESIGN & LAYOUT II 3-0-3
Continued study in two-dimensional communication design and the influence of modern and contemporary/postmodern art. Students explore the iconic logo design process and the visual approaches and various creative techniques employed to develop a well-crafted visual identity utilizing scanning techniques and Adobe design software.Prerequisite(s): GCT 115, GCT 151

GCT 231—TYPE & PUBLISHING II 3-0-3
Continued study of typography, page layout and design for preparing files for print and commercial printing press checks, exploring basic package design and converting InDesign files into EPUBs for reading on multiple devices. Prerequisite(s): GCT 131

GCT 251 —ART & ILLUSTRATION II 3-0-3
Advanced study of Adobe Illustrator and exploration of information graphics: charts, graphs and diagrams; surface design: patterns for products, interiors and architecture; and user experience (UX): wireframes, mock-ups and user interface. Prerequisite(s): GCT 151

GCT 255—GRAPHICS & LETTERING II 3-0-3
Intermediate study of Adobe Illustrator, layout and design, environmental typography, spot and process color, as well as vector graphics and pixel-based images for designing and producing effective signage, identity graphics, and a basic wayfinding/environmental graphics system incorporating graphic arts techniques and vinyl print/cut technologies. Prerequisite(s): GCT 155

GCT 261—DIGITAL IMAGING & EDITING II 3-0-3
Advanced study of Adobe Photoshop, alpha channels and refine mask, painting tools and techniques, color adjustment and correction, and creating 3D type and graphics for entertainment, advertising and marketing design usage. This is a capstone course, satisfactory demonstration of outcomes for competency profile of the Graphic Design AFA degree is required, as well as, a showcase portfolio of student's best, most recent work for professional gallery exhibition. Prerequisite(s): GCT 161

GCT 285—PRINT & PREPRESS II 3-0-3
Advanced study of print production essentials that introduces color adjustment and correction, embossing, foil stamping and die cutting that add visual impact. Students also explore the basics of practical, visually appealing package design utilizing Adobe Illustrator, InDesign and Photoshop. Prerequisite(s): GCT 185

GCT 287—DIGITAL WORKFLOW 3-0-3
An intermediate study of interactive page layout and design using Adobe Illustrator, InDesign and Photoshop. Students explore the possibilities of using digital publishing technology take documents beyond print ot create innovative digital experiences for a wide range of screens and devices. Students also explore Adobe Muse for creating and publishing dynamic, standards-based HTML websites for desktop and mobile devices that meet the latest web standards without writing any code. Corequisite(s): GCT 131, GCT 163

GCT 290—SEMINAR IN GRAPHICS 3-0-3
Under faculty supervision, students prepare materials such as cover letters, leave-behinds, resumes, applications for employment and prepare a showcase portfolio with emphasis on organization and presentation utilizing Adobe design software. Under an Occupational Advisory Committee member's supervision, students are involved in on-campus internship-experience to develop appropriate attitudes, soft skills, and work habits in preparation for interviewing for an off-campus internship in graphic communications.
Prerequisite(s): Completion of 27 credits within GCT program

GCT 299—GRAPHICS INTERNSHIP 0-12-3
Students gain experience involving production art techniques, technical support, customer service or sales responsibilities that broaden their understanding of the graphic communications profession through supervised and evaluated on-the-job experience in design studios, marketing and advertising agencies, and print and digital publishing environments. Transportation to off-campus site is the responsibility of individual student. Prerequisite(s): Completion of GCT 290 plus instructor and OAC recommendations

GEO–GEOGRAPHY

GEO 155—INTRODUCTION TO HUMAN GEOGRAPHY: HUMAN SETTLEMENTS AND GLOBAL CHANGE 3-0-3
This is a geography course about the interacting relationships between earth and humans. The focus is on the physical and human geographical aspects of the global environment with emphasis on the environmental impact of human settlement.

GEO 160—PHYSICAL GEOGRAPHY AND THE GLOBAL ENVIRONMENT 3-2-4
This course covers elements of the physical environment, atmosphere, climate, vegetation, soil and land forms. Emphasis will be on the conservation of resources and the nature and distribution of geographic regions. Labs are designed to bring students into contact with the landscape, developing an understanding of their own as well as other parts of the world.

HAC–HEATING, VENTILATION, AIR-CONDITIONING AND REFRIGERATION

HAC 101—HEATING AND COOLING FUNDAMENTALS 2-4-4
This course is designed to introduce students to light-commercial refrigeration and air-conditioning systems. Individual components and controls found in refrigeration, air-conditioning and heating are evaluated and tested in the classroom and the HVAC lab. Students will learn to use and apply meters, gauges, hand tools, power tools to troubleshoot and repair HVAC equipment.

HAC 150—PSYCHROMETRICS AND LOAD ESTIMATION 3-0-3
This course covers the use of the psychometric chart to determine the properties of air and its effect on human comfort. This course also shows the student how to use ACCA Manual JAE and computer load software to determine building heating and cooling loads and to select HVAC equipment.

HAC 170—HVAC CONTROL SYSTEMS 2-2-3
Provides a fundamental understanding of electrical, pneumatic and electronic control circuits as applied to HVAC systems. Reading and comprehending wire diagrams and ladder diagrams are covered in detail. Troubleshooting and repairing HVAC circuits using electrical meters and pressure gauges are covered in the classroom and lab on real equipment found in the field. Installation and replacement of controls are performed in lab.

HAC 199—HVAC INTERNSHIP 1-12-3
Students will obtain real world on the job experience working for an HVAC contractor or as a maintenance person working on HVAC equipment. This course takes previously learned classroom knowledge and allows a student to apply these skills to the jobsite. Students will be supervised by their job boss who will issue progress reports detailing the student's job progress.

HAC 230—AIR DISTRIBUTION AND CODES 2-3-3
This course covers the proper sizing. designing and installation of ductwork for HVAC systems. Students will demonstrate the proper use of manometers, magnehelic gauges, and air flow meters to determine air system flow and velocity. ACCA Manual D and duct calculators are used to size ductwork. Computers are also used to determine the proper size of ducts. The basics of mechanical code is covered as well in this course. Prerequisite(s): HAC 150

HAC 240—HVAC DUCT FABRICATION 2-4-4
This course is designed to teach the HVAC student proper metal and fiberglass duct construction techniques. Students will layout, fabricate and install air ducts in the classroom and lab. Duct fitting identification and connections will be covered in this class. Venting systems and make-up air fittings will be fabricated as well.

HAC 250—AIR CONDITIONING I 2-4-4
This course is designed to show students how air-conditioning and furnaces operate. HVAC equipment installation, troubleshooting, replacement and repair are covered in the classroom and the HVAC Lab. Classroom theory in the operation of systems show students how the equipment should operate. Lab skills offer students hands-on experience on real residential and light commercial equipment.

HAC 255—HEAT PUMPS 2-4-4
This course covers the operation, troubleshooting, repair of reverse cycle air source and ground source heat pump systems and their individual components. Heat pump control check out, replacement or repair will be demonstrated by the students in lab. Prerequisite(s): HAC 101

HAC 260—HYDRONICS 2-4-4
This class covers gas, oil and electric boilers and water heaters used in residential and light commercial systems. Steam boiler theory is covered in class. Piping material selection, preparation and installation are demonstrated in labs. Hydronic equipment controls and accessories are tested by using meters and gauges in lab. Prerequisite(s): HAC 101

HAC 280—RESIDENTIAL WIRING 2-4-4
This course provides the HVAC student a basic understanding of residential electrical wiring techniques. Areas to be discussed are: electrical safety, electrical load requirements, electrical equipment, and wiring selection. Students will demonstrate proper connection of switches, receptacles, breakers and fuses to electrical boxes and loads. Installation, troubleshooting and repair of electrical accessories are also taught in this class and tab.

HAC 290—REFRIGERATION RECOVERY 3-0-3
This course is designed to prepare HVAC students to take and pass the EPA Refrigerant Certification Examination. Students will learn and demonstrate proper refrigerant handling techniques that include recovery, recycling and storage. Students will use refrigeration gauges, vacuum pumps, recovery machines and recovery cylinders to properly charge and recover refrigerants. EPA regulations, refrigerant chemistry, refrigerant lubricants, transportation and disposal are presented in this course.

HIS–HISTORY

HIS 155—EARLY WESTERN CIVILIZATION 3-0-3
A survey and analysis of western civilization from its origin through the 17th century. Major political, social, economic and cultural trends and their influence on modern civilization are examined.

HIS 156—MODERN WESTERN CIVILIZATION 3-0-3
A survey and analysis of western civilization from the 18th century to the present. Nationalism, industrialism, imperialism and major intellectual and social developments are emphasized.

HIS 249—THE CIVIL WAR 3-0-3
A survey and analysis of the American Civil War and Reconstruction. This course is a study of the origins and causes of the war, the nature and direction of the war itself, and its results and consequences. Particular attention is given to economic, social, political, military and ideological aspects of the American Civil War.

HIS 255—EARLY U.S. AND PA HISTORY 3-0-3
A survey course in United States history from the discovery of the New World to the close of the Civil War. The story of our American heritage told against the backdrop of revolution, expansion, nationalism, industrial growth and sectional strife.

HIS 256—MODERN U.S. AND PA HISTORY 3-0-3
A survey course in United States history from the end of the Civil War to the present. Examination of political, social, economic, and cultural trends with emphasis on the impact of reconstruction, industrialism, progressivism, isolationism, imperialism, conservatism and liberalism.

HIS 257—THE WORLD IN THE 20TH CENTURY 3-0-3
An introduction to the history of the world in the 20th century. This course examines the forces which have produced significant changes in the modern world and integrates the experiences of Asia, Africa and Latin America with that of Europe and America. An assessment is made of the impact of war, peace, racism, nationalism, imperialism, ideology, religion and family upon the peoples and cultures of the 20th century.

HIS 262—MODERN LATIN AMERICAN HISTORY 3-0-3
A survey of Latin American history from the 16th century through the present, this course is a general but comprehensive study following a topical approach by focusing on social, cultural, political and military developments in the Caribbean, Central America and South America. Major topics include the colonial period, independence movements, nation building, Amerindians, Africans, and Mestizos, governance in the early 20th century, global challenges and the contemporary era.

HMS–HUMAN SERVICES

HMS 155—INTRODUCTION TO HUMAN SERVICES AND SOCIAL WORK 3-0-3
Introduction to Human Services and Social Work is intended as an introductory course for the student who plans to work with people in need. The course will provide the student with an overview of the information and skills needed to effectively work with a variety of populations in their community. The course will include information about the necessary personal qualities, service delivery systems and basic skills. It will also provide an overview of the history of the helping profession and how social policy influences the profession. Students will become familiar with the service providers in the local area. Additionally, students will examine their personal feelings and motivations related to becoming a helper.

HMS 156—COMMUNICATION FOR HUMAN SERVICE WORKERS 3-0-3
An introduction to the theories and practices of basic communication skills focusing on interpersonal communication in the helping services. The course is interactive, providing students the opportunity to practice skills.

HMS 157—INTERVIEWING AND RECORDKEEPING SKILLS 3-0-3
As the follow-up course to HMS 156 with an emphasis on individual interviewing skills in the helping services, this is a key course in the human services program as it teaches essential information gathering and recording skills for the human services worker. It is a very interactive course with much time devoted to practicing interviewing skills with classmates. Recordkeeping skills include learning to distinguish between objective and subjective information, how client files are organized and the methods used to compile a client history and assessment.

HMS 160—GROUP PROCESS 3-0-3
This course provides the basic knowledge needed to be an effective group leader and member. Emphasis is on practical application of group process skills. Prerequisite(s): HMS 156

HMS 162—PROBLEM SOLVING AND COUNSELING SKILLS 3-0-3
This course is a follow-up to Interviewing and Recordkeeping Skills course. Its purpose is for the student to learn basic counseling skills that help clients discover and use their strengths and past experiences to help them identify solutions to their problems. Prerequisite(s): HMS 155, HMS 157

HMS 163—INTRODUCTION TO SOCIAL WELFARE 3-0-3

An examination of the historical and contemporary social problems, values and the policies of the institution of social welfare. Considers the social, political and economic origins and consequences of societal policies for economic advancement of clients and social services. Investigating current issues and how it impacts the social work field.

HMS 170—RACE & DIVERSITY IN THE U.S. 3-0-3

This is an introductory course for the study minorities in the USA. The course will expose students to the sociological perspectives on race, class and gender. This course will also provide an overview of the history of various minority groups with emphasis on the importance of culture and developing awareness and understanding of self and others. Through readings and discussions, the course will focus on prejudice and discrimination and the importance of understanding their role in a multicultural society.

HMS 171—INTRODUCTION TO GERONTOLOGY 3-0-3

This course provides an introduction to the biological, psychological and social issues experienced by those who are aging. Students will learn the various stages and cycles of aging and how society views and provides services to older adults. This course is interactive in nature and requires interviews with older adults and community service providers.

HMS 172—DRUG AND ALCOHOL DEPENDENCY 3-0-3

Drug and Alcohol Dependency is an introductory course for the student intending to work with people in a variety of settings, including the social services, health services, education and criminal justice. This course will provide the student with an overview of substance abuse and treatment issues. Focus will be on learning about the major categories of abused substances, the nature of addiction, treatment and recovery and the impact of substance abuse and addiction on specific populations.

HMS 258—HUMAN SERVICES PRACTICUM I 2-8-4

Under the supervision of a qualified human services provider, students will gain field experience in an area of interest. In this semester-long class, students will discuss ethical and current practice issues related to work in the human services field. The importance of professional behavior and the value of networking within the human services field are emphasized. Prerequisite(s): HMS 155, HMS 157 and permission of instructor

HMS 259—HUMAN SERVICES PRACTICUM II 2-8-4

Building on the experience acquired in HMS 258 (Practicum I), this course further develops the student's knowledge of the role of a human service provider. Included in the seminar activities related to fundraising and community activism. Prerequisite(s): HMS 258 with a grade of C or better, 2.0 QPA, permission of instructor.

HMT–HOTEL/MOTEL MANAGEMENT

HMT 160—EXECUTIVE HOUSEKEEPING AND FRONT OFFICE PROCEDURES 3-0-3

Covers interoperations of the front office desk and the executive housekeeping departments. Duties and responsibilities of each department and the correlation of these areas to assure management control are presented. Additional topics include such areas as booking reservations, room maintenance and costs, and training of personnel for these areas.

HMT 161—RECREATIONAL FACILITIES MANAGEMENT 3-0-3

Designed to serve as a study of the needs and management of recreational and entertainment facilities common to lodging operations. Maintenance, staffing, marketing and principles of cost controls as they apply to recreation will receive emphasis. Transportation to off-campus locations is the responsibility of the student.

HMT 170—CASINO/GAMING OPERATIONS 3-0-3

Identifies the current and future trends affecting the industry. This course also investigates regulations, social and economic impact, and actual operations of casino/gaming facilities. Transportation to off-campus locations is the responsibility of the student.

HMT 172—CASINO MARKETING 2-0-2

This course offers an introduction to the marketing practices utilized in casino/gaming operations. The student will review the basic principles of marketing and specific marketing strategies and programs aimed at attracting and retaining customers within the industry.

HMT 174—INTRODUCTION TO CASINO SURVEILLANCE AND SECURITY 1-0-1

This course is designed to introduce students to security and surveillance procedures necessary to operate a safe, crime-free casino environment. Emphasis will be given to laws and regulations specific to these areas.

HMT 176—INTRODUCTION TO CASINO FINANCIAL CONTROLS 2-0-2

This course covers how funds are distributed and tracked throughout the casino/gaming facility. Regulatory requirements are also reviewed. Computer applications, forms and documents which may be used in this setting will be reviewed.

HMT 262—LODGING AND PROPERTY MANAGEMENT 3-0-3

Presents management of hospitality property in the physical aspect, its incumbent problems and utilization of staff and methodology to maintain facilities operation at peak efficiency. Physical maintenance, staffing patterns, training, capital investments, cost analysis, building and equipment renovation and replacement, and job/task analysis are additional areas of concern. Transportation to off-campus locations is the responsibility of the student.

HMT 264—CONVENTION AND MEETING MANAGEMENT 3-0-3

Designed to provide the students with the information essential for planning meetings, conventions and other such functions in today's hospitality industry. Discussions include meeting rationale, planning, directing, controlling and evaluating. Students are acquainted with major convention bureaus, cities, hotels and resorts.

HON–HONORS

HON 295, 296, 297, 298—HONORS SEMINAR 3-0-3

Honors Seminar is a unique type of college course. In this course you will design, implement, edit, produce, and report on a project that you have designed in consultation with your faculty mentor. The project, as described when you were recruited to participate, is a topic of your own choosing. This topic of interest and concentration is one that enlarges on an honors project then allows the student to enrich his or her knowledge in an area of concentration while also engaging in further development of the techniques of research and writing. The key to success in an Honors Seminar course is self-discipline and self- direction in performing the necessary level of work to complete your chosen project. The faculty mentor provides support and guidance as needed. Honor's Seminar enriches not only the student's academic experience, but their personal sense of accomplishment and autonomy as well.

HOR–HORTICULTURE

HOR 105—INTRODUCTION TO HORTICULTURE 3-0-3

Surveys the broad area of horticulture and gives general treatment to vegetable and fruit production while treating ornamental horticulture and plant growth and development in more depth.

HOR 107—LANDSCAPE DRAWING 2-2-3

Introduces the proper use of drafting equipment, printing techniques, and scale drawing. This course prepares students for designing landscapes and landscape structures.

HOR 110—INTRODUCTION TO TURFGRASS MANAGEMENT 2-2-3

This course is an introduction to basic turfgrass principles. It covers the basic theory of plant growth and development. It also covers the major factor in turfgrass needed to produce quality grass.

HOR 120—TURFGRASS EQUIPMENT MECHANICS 3-2-4
This courses deals with the mechanics, operation, maintenance, trouble shooting and repairing of turf care equipment including rotary mowers, real mowers, spray equipment, aerifiers, spreaders, etc.

HOR 125—ORNAMENTAL SHRUBS 2-2-3
Covers the characteristics, identification, utilization and care of commonly used ornamental shrubs.

HOR 126—ORNAMENTAL TREES 2-2-3
Covers the characteristics, identification, utilization and care of commonly used ornamental trees.

HOR 150—SPECIALIZED TURFGRASS MANAGEMENT 2-2-3
This course is designed to build on the basic principles of turfgrass science and apply those principles to golf course turfgrass management principles. This course also covers the proper management techniques used in turf areas on recreational and athletic fields. Prerequisite(s): HOR 110

HOR 155—SOILS AND SOIL FERTILITY 3-2-4
Stresses soil improvement and maintenance. Consideration is given to soil modification, improving and maintaining fertility, fertilizers and amendments.

HOR 157—INSECTS AND DISEASES OF PLANTS 3-2-4
Covers the identification, prevention, and control of significant diseases, insects, and other pests of landscape and turfgrass plants. Consideration is given to pest control through variety and type selection and their environmental adaptation.

HOR 170—FLORAL DESIGN AND ARRANGING 1-4-3
Students learn theories about flower arranging and practical skills for designing and making different types of flower arrangements including wedding bouquets, funeral flower baskets, etc.

HOR 198—FLORICULTURE INTERNSHIP 1-12-3
A supervised work experience in a horticulture enterprise where students apply their landscaping skills. Prerequisite(s): Permission of instructor

HOR 199—HORTICULTURE INTERNSHIP 1-12-3
A supervised work experience in a horticulture enterprise where students apply their landscaping skills. Prerequisite(s): Permission of instructor

HOR 205—RESIDENTIAL LANDSCAPING 2-2-3
Designed to allow students to combine their landscape drawing and plant materials knowledge in developing small properties and residential plans. Prerequisite(s): HOR 107

HOR 207—ADVANCED LANDSCAPING 2-2-3
A continuation of HOR 205. Requires students to extend their skills in designing larger properties such as malls, parks, institutional grounds and courtyards. Corequisite(s): HOR 205

HOR 210—PLANT PROPAGATION 2-2-3
Discusses various plant propagation methods including seed propagation, grafting, budding, layering, cutting, division, topping, and tissue culture, etc. Class will focus on the propagation of plants widely used in landscaping.

HOR 212—PRUNING 2-2-3
Deals with the functions, principles and techniques of pruning. Emphasis will be given to pruning ornamental trees and shrubs as well as fruit trees and vines.

HOR 215—ANNUALS AND HERBACEOUS PERENNIALS 2-2-3
Introduces students to selection, identification, utilization, and care of significant annuals and herbaceous perennials used in the landscape.

HOR 235—VEGETABLE GARDENING 2-2-3
Includes coverage of popular vegetables grown in the home garden as well as garden site preparation and location in the landscape.

HOR 241—GREENHOUSE OPERATIONS AND MANAGEMENT 2-2-3
Designed for students to learn about the different types of greenhouses, heating, cooling, environmental control, energy conservation and the use of plant growth regulators in green- house production.

HOR 250—INTERIOR PLANTS AND PLANTSCAPING 3-2-4
This course deals with the plants that are commonly used in interior plantscaping and the principles for interior plantscaping. Also covered in the class are cost estimating and maintenance procedures for interior plantscaping. Over 80 plants will be discussed in detail about their identification characteristic, cultural requirements and maintenance requirements.

HOR 270—GREENHOUSE PRODUCTION 2-2-3
This course deals with the production of the most important greenhouse crops. Emphasis will be given to the productions of chrysanthemums, Easter lilies, poinsettias and bedding plants although many other plants will also be discussed. This course introduces students to the concept of interior plantscaping. The principles of design, installation and maintenance in interior plantscaping will be discussed. Prerequisite(s): HOR 105

HOR 275—LANDSCAPE EQUIPMENT, INSTALLATION AND MAINTENANCE 3-2-4
This course covers some common equipment used in landscaping, building of common landscape structures, process of installing a landscape based on a design and practices that are important in landscape maintenance. Students lean through hands-on operation of equipment, installation and maintenance.

HOR 289—TURFGRASS MANAGEMENT INTERNSHIP I 1-12-3
This course gives students an opportunity to use the knowledge and skills learned in other classes in a career setting. Students gain real-life work experiences and practical knowledge through working as an employee of a turf-related business such as a golf course, a lawn care company or a sports facility. Prerequisite(s): Permission of instructor

HOR 299—TURFGRASS INTERNSHIP II 1-12-3
This course gives a student the ability to apply advanced knowledge in a real-world working environment. Students will gain valuable knowledge working under the direction of turfgrass specialists. Prerequisite(s): HOR 199

HPE–HEALTH AND PHYSICAL EDUCATION

HPE 156—HEALTH AND PHYSICAL EDUCATION 2-2-3
Lectures deal with wellness, exercise, nutrition, tension control and mental health, sexually transmitted diseases and HIV prevention, cancer and heart disease prevention, date rape awareness, alcohol and drugs, and injury treatment as they relate to a preventative medicine lifestyle. Concepts stressed are flexibility, strength, aerobic exercise, heart and cancer disease and risk factors, proper nutrition, stress management techniques, STD and HIV prevention. In the lab, a pre- and post-fitness evaluation is performed. An individually prescribed exercise program is performed twice a week.

HPE 157—PERSPECTIVES IN HEALTH 3-0-3
Examines today's health issues and presents contemporary approaches to maintaining good health. Focuses on such topics as stress, hypertension, nutrition, depression, smoking and sexually transmitted diseases.

HPE 176—AEROBICS/WEIGHT TRAINING 0-2-1
Teaches the correct approach to physiological conditioning of the cardiovascular and muscular systems. Examines proper frequency, intensity and duration of these activities. Nutritional concepts are discussed while students improve cardiovascular, strength and flexibility fitness levels. Percentage of body fat should also respond to the course.

HSM–HOMELAND SECURITY

HSM 101—ORIENTATION TO HSM/EMERGENCY PREPAREDNESS, PLANNING AND RESPONSE 3-0-3
This course provides a broad overview of homeland security and homeland defense as undertaken in the United States since 9/11. The goal is to provide the student with an overview of a generally accepted body of knowledge required of the homeland security professional. The course focuses on the enemy, why they hate us, and the threat they pose; the homeland security policies and procedures enacted since 9/11; the key players at the federal and state and local levels. Successful students will receive four certifications from the Federal Emergency Management Administration in Incident Command and the National Incident Management System.

HSM 102—PRINCIPALS OF EMERGENCY SERVICES 3-0-3
This course provides an overview to fire protection and emergency services; career opportunities in fire protection and related fields; culture and history of emergency services; fire loss analysis; organization and function of public and private fire protection services; fire departments as part of local government; laws and regulations affecting the fire service; fire service nomenclature; specific fire protections; basic fire chemistry and physics; introduction to fire protection systems; introduction to fire strategy and tactics; and life safety initiatives.

HSM 103—VULNERABILITY ASSESSMENTS AND PHYSICAL SECURITY 3-0-3
This course will concentrate primarily on the development and implementation of a Vulnerability Assessment program. Students will look at the Vulnerability Assessment (VA) role in the Risk Assessment process, and learn how it supports the development of the Hazard Mitigation Plan and the Site Physical Security Program. Students will also learn the CARVER System, a step-by-step approach VA and identify the application of the program. In addition the student will learn to apply a research methodology for gathering information, conducting investigations, conducting interviews and briefings with the clients. The course explores the various idiosyncrasies that occur with the different types of facilities. Sessions take a critical look at the various aspects of physical and cyber security to be considered and learn how to apply credibility and nuisance tests. Personnel access, traffic control and other mitigation measures will be covered.

HSM 105—INTRO TO HOMELAND SECURITY GRANT WRITING AND GRANTS MANAGEMENT 3-0-3
This course will concentrate primarily on the development and implementation of a Homeland Security Grants Program. Students will learn of the wide array of funding sources, filing deadlines and of the wide variety of formats that may be required when seeking health and safety, critical infrastructure protection and public safety grants. Specific PEMA, FEMA and DHS homeland security-related guidelines will be reviewed and studied. Website links will be explored and information will be provided to identify grant sources appropriate for the agency needs. Tips on writing successful grants will be provided and actual successful grant proposals will be reviewed. The student will draft at least one grant proposal for evaluation. The need for careful management, accountability and quality control of grants received will be reinforced and a review of audit and best practice methodology will be reviewed.

HSM 107—CONTINUITY OF OPERATION PLANNING WITH COOP EXERCISE 3-0-3
This course is designed for a broad audience - from senior managers to those directly involved in the continuity of operations (COOP) planning effort. The class incorporates the FEMA Online Class - IS 547 Introduction to Continuity of Operations - and provides a working knowledge of the COOP. Topics include an overview of the following areas: essential functions, delegation of authority, succession planning, alternate facilities, interoperable communications, vital records, tools, directives and databases, and human capital. Students will also receive training in existing templates and models that may be used in developing and maintaining a COOP. Students will prepare a COOP for a local business or government entity, certification exam required through FEMA website.

HSM 109—EMERGENCY MEDICAL SERVICES AND HEALTH SERVICES ORIENTATION 3-0-3
EMS and HSO is designed to give a student interested in a certificate or degree in Homeland Security a comprehensive knowledge of Emergency Medical Services systems, hospital disaster response and supplemental resources including the National Disaster Medical System (NDMS) and Disaster Medical Assistance Teams (DMAT). This program includes EMS development, training and educational requirements, medical care advances, WMD medical response priorities and an introduction to disaster medical operations.

HSM 201—EMERGENCY MANAGEMENT AND PLANNING 3-0-3
This in-depth course is to provide the student with a management perspective and understanding of organizations, mitigation, prevention, planning, preparedness, readiness, response and recovery relating to homeland security events. An act of terrorism can occur anywhere, at any minute, and when you would least expect it. No jurisdiction, urban, suburban, or rural is totally immune. Despite our security consciousness, if terrorists intend to wreak havoc it will be difficult to stop them. The focus is on U.S. policies and programs to address the hazard posed by international and domestic terrorism, particularly the risks posed by "weapons of mass destruction," since the attacks on the World Trade Center and the Pentagon on September 11, 2001.

HSS–HEALTH AND SAFETY SERVICES

HSS 103—HEALTH AND SAFETY IN THE WORKPLACE 3-0-3
Safe work practices save more than money. A safe work environment promotes a positive relationship between the employer and the employee. This course will orient students to the practice of safety in the workplace. Students will explore the impact of safety regulations in American industry from the mid 1800s through today. Students will be introduced to the various agencies that govern safety in the workplace and will study the impact of behavioral-based and participative safety models in the modern workplace.

HSS 105—HEALTH AND SAFETY FOR GENERAL INDUSTRY 3-2-4
A comprehensive study of the OSHA guidelines that govern general industry. Topics covered include: electrical safety; hazardous materials; machine guarding; cranes and lifting devices; bloodborne pathogens; fire safety; confined space; hydrogen sulfide; slips, trips, and falls; ergonomics; and personal protective equipment. Students will study the methodology used to implement and enforce a health and safety program and will perform simulated job safety analyses and industrial site evaluations. Special focus on written safety programs and identification and correction of potential hazards.

HSS 120—ACCIDENT INVESTIGATION TECHNIQUES FOR INDUSTRY 2-0-2
Work-related accidents are responsible for thousands of injuries and fatalities annually. Health and safety professionals use systematic accident investigation and evidence gathering techniques to determine accident causes and identify future solutions. This course will explore the techniques and methodology used to investigate accidents and discover the origin(s) of these events. Accident investigation and investigation results are important to the affected personnel, organization, equipment and to the families and loved ones of those who may have been injured. This course will explore the investigative techniques used in finding the causes of accidents and provide the information to assist in developing changes to equipment, procedures or behaviors that help prevent future accidents.

HSS 140—SAFETY MANAGEMENT AND AUDITING **3-0-3**

A comprehensive study of the practices of safety management and safety auditing in industry. Discussion on the roles and responsibilities of the members of an organization in reference to creating and maintaining a culture of safety. Methodology and best practices for implementing safety plans and conducting safety audits.

HSS 150—ADULT LEARNING METHODOLOGIES **2-0-2**

The learning process evolves as we progress from high school to college and into the workforce. Teaching methods that worked when we were younger no longer seem logical or valuable. The process of adult learning is different and successful trainers embrace a variety of methods to facilitate the learning process. This course will discuss the adult learning process and assist students in developing the skills necessary to be a successful trainer.

HUM–HUMANITIES

HUM 140—SOCIAL MEDIA: SOCIETY AND CITIZENSHIP **3-0-3**

This course is designed to enable students to make safe and legal use of the Internet by identifying best practices, tools and methods that also respect free expression. It develops the critical thinking skills necessary to understand the challenges, risks and opportunities regarding current computer-mediated communication technologies. Topics include rights and responsibilities of the digital citizen, Internet safety, social networking, privacy and creative content creation. Legal, technical, psychological and social dynamics will be addressed with an emphasis on practical application. The course builds a foundation by looking at the technical aspects of social media and exploring the tools and skills necessary to enhance students' online potential by building a culture of responsible online behavior. The second half of the course will focus on the more complex dynamics of collaboration, privacy, content creation and economic and political societal participation.

HUM 156—CRITICAL THINKING **3-0-3**

Designed to show an order associated with the learning process. Observation and listening skills are developed as an introduction to critical thinking. Relationships among observation, interpretation, perception and generalization are considered. Critical thinking and analysis to reach reasonable end points are developed by applying necessary skills to a variety of written and oral topics.

ITA–ITALIAN

ITA 155—BEGINNING ITALIAN I **4-0-4**

Beginning Italian I introduces the Italian language with an emphasis on basic grammar and communication. Students will build vocabulary through practical exercises that stress problem-solving for travel and/or living in Italy. They will also spend a minimum of two hours a week involved in an interactive language lab that provides written, oral, and visual exercises. Students will also be exposed to the Italian culture in areas such as art, literature and social customs. Supplemental materials will be used to deepen the students' understanding of the Italian language and Italian life.

ITA 156—BEGINNING ITALIAN II **4-0-4**

The second semester of Beginning Italian will continue exploring the Italian language with an emphasis on speaking, comprehending and writing the Italian language. Students will further build vocabulary through practical exercises that stress problem-solving for travel and/or living in Italy. They will also spend a minimum of two hours a week involved in an interactive language lab that provides written, oral and visual exercises. Students will also be exposed to the Italian culture in area such as art, literature and social customs. Supplemental materials will be used to deepen the students' understanding of the Italian language and life.

LAS–PARALEGAL

LAS 101—THE LEGAL ASSISTANT **3-0-3**

The legal environment, including duties, limitations and ethical constraints of legal assistants, professional responsibilities and expectations, sources and relationships of the various bodies of law along with the structure of national government and the court system will be studied. The course will examine substantive areas of the law, including torts, contracts, property law, domestic relations, estates and trust, and business law.

LAS 111—LEGAL ANALYSIS **3-0-3**

An introductory level course designed to equip the student with the basic skills of legal analysis and research. The student will be exposed to legal analysis in the form of reading, synthesizing, and abstracting judicial opinions; various methods of legal research, including use of the Uniform System of Citation, legal publications and reporters and Shepard's Citations will be explored.

LAS 115—TORTS **3-0-3**

A study of the concept of civil wrongs and their treatment in law, to include the intentional torts, negligence and strict liability as applied to persons, property and business. Specific topics to be considered include negligence, strict liability, products liability, intentional torts including assault, battery, defamation, nuisance and defenses to tort actions. Prerequisite(s): LAS 101, LAS 111

LAS 120—ESTATES AND TRUSTS **3-0-3**

A study of the law pertinent to wills, estates and trusts including inestate succession, will drafting and execution, codicils, uses and effects of different types of trusts, the probate process and distribution. Relevant state statutes will be utilized as well as practical application of materials dealt with. Prerequisite(s): LAS 101, LAS 111

LAS 125—LITIGATION I **3-0-3**

A survey of the process of pursuing a civil action through the legal system. Topics include choice of courts, jurisdiction, venue, pleading and related motions, discovery, pretrial actions, preparation and trial and appellate procedures. Emphasis will be on the legal assistant's role in gathering and organizing materials, interviewing and investigating, drafting, interrogatories and pleadings, the trial notebook and assisting during the trial. Prerequisite(s): LAS 101, LAS 111

LAS 140—DOMESTIC RELATIONS **3-0-3**

A study of laws affecting family-related matters such as marriage, divorce, separation, child custody/support and adoption. Prerequisite(s): LAS 101, LAS 111

LAS 200—CONSTITUTIONAL POWERS AND CIVIL LIBERTIES **3-0-3**

A study of the development of our system of government, from the theories and factors involved in creating our Constitution to the powers of government granted under it. The development of individual rights and liberties as guaranteed by the Constitution will be examined with reference to the interpretation of the Constitution and Bill of Rights by the U.S. Supreme Court.

LAS 210—LEGAL WRITING **3-0-3**

An introduction to the types of research sources, procedures and case documentation for which the legal assistant is typically responsible. Students will learn to prepare common legal documents and develop written briefs for attorneys based on their research. Prerequisite(s): ENG 161, LAS 111

LAS 215—LEGAL RESEARCH **3-0-3**

A continuation of LAS 210. The student will be required to complete several major research projects as part of the course, including interoffice memoranda and trial and appellate briefs. Prerequisite(s): LAS 210

LAS 293—INTERNSHIP **1-12-3**

Supervised experience in legal agencies that provide the student with the opportunity to apply legal assistant theory and skills while performing tasks in the legal assistant profession. Prerequisite(s): LAS 215 and QPA of 2.0 or better.

MAS–MEDICAL ASSISTING

MAS 100—INTRODUCTION TO MEDICAL ASSISTING **3-2-4**

Introduces the student to the role of the medical assistant in a variety of patient care settings. Develops communication skills directed towards the role of the medical assistant in receiving, organizing, prioritizing and transmitting information. Develops interviewing skills for obtaining patient histories. Provides an ethical framework in which the medical assistant functions within the health care setting. Acquaints the student medical assistant with the process and requirements for certification.

MAS 105—ADMINISTRATIVE PROCEDURES **3-0-3**

Establishes a legal framework related to the duties of the medical assistant. Appropriate documentation of patient information is taught and guidelines are presented for the handling of patient record information. Confidentiality is stressed. Procedures for disposing of controlled substances in compliance with government regulations are addressed. Offers the student an opportunity to understand acceptable practices related to initiating and terminating medical treatment. Emergency office procedures are taught. Prerequisite(s): MAS 100

MAS 110—CLINICAL PROCEDURES **3-2-4**

Covers theory and practical applications of asepsis, medication administration, lab and specimen collection and processing, vital signs, venipuncture, EKG, and preparation of the patient for examination and treatment. The laboratory component of this course provides the student with the opportunity to practice selected skills related to the clinical procedures. Prerequisite(s): MAS 100

MAS 120—PRACTICUM **0-15-3**

This course provides a supervised clinical placement to practice the administrative and clinical skills necessary to function as a medical assistant in a physician's office and other designated medical settings. Administrative skills include receptionist duties and appointment scheduling, medical correspondence, record handling, medical transcription, maintaining patient accounts, billing and processing insurance claims. Clinical skills include patient preparation and assisting with diagnostic and surgical procedures, examination assisting, specimen collection and processing, performing basic office diagnostic procedures, medication administration, and aseptic technique. Prerequisite(s): MAS 110

MED–MULTIMEDIA TECHNOLOGY

MED 103—PODCASTING & SOCIAL MEDIA **1-0-1**

This introductory course covers the basics of Internet podcasting. Students will learn how to manage audio and video for online and mobile platforms. Students will learn how to set up a small studio for audio and video podcasting to be published online for desktop, mobile and social media sharing.

MED 105—MULTIMEDIA FOR WEB **3-0-3**

An introductory level course exploring Apple's iLife software package. Students will produce basic iVideo, iPhotos, audio, and iDVD for personal and WEB use. Students studying web design and multimedia will find this class of value. Emerging technology will also be explored.

MED 110—DIGITAL PRESENTATION **3-0-3**

Introduces the planning and production of visual presentation programs. Emphasis is placed on digital audio/video projected methods of presentation. Input/output devices such as DVD, audio recording and flatbed scanners are employed in the design and development of presentations.

MED 150—EDITING AND VIDEO TECHNIQUES/ PREMIERE PRO **3-0-3**

This is an introductory level course using the computer as an editing tool. Students utilize Adobe Premiere Pro nonlinear editing software to produce digital video for use in non-broadcast and DVD. Basic editing procedures encompassing video, audio, and still imagery will be employed. Students must have a DV digital video or DSLR camera and external hard drive. Emerging technology will also be explored.

MED 155—INTRODUCTION TO MULTIMEDIA **3-0-3**

An introductory course in the exploration of current and past media. Topics include television, radio, recordings, newspapers, magazines, books, movie industry and other current trends in multimedia technology.

MED 158—HISTORY OF CINEMA **3-0-3**

Surveys the development of cinema from its technological origins in the 19th century through its growth as an international medium and an analysis of various film genre.

MED 159—DSLR VIDEO PRODUCTION **2-2-3**

Introduces digital, single-camera video production using the Digital Single Lens Reflex Camera. Students will learn basic camera operation and use of nonlinear editing. Basic lighting procedures and fundamental scripting/storyboarding will be presented. This course also covers basic video field production techniques. Emerging technology will also be explored. Students must have a DSLR camera and removable hard drive.

MED 160—BASIC PHOTOGRAPHY **3-0-3**

A basic course in digital camera use and operation. This course also covers the history of photography, basic digital dark room, lighting and composition. Digitally oriented with selected projects and exercises to develop digital camera and darkroom skills. Students must have access to a digital camera.

MED 161—PORTRAIT PHOTOGRAPHY **3-0-3**

This course introduces students to basic portrait types. Fundamental lighting set-ups will be examined. Basic instruction in posing techniques will be used to create images in the studio and of an environmental nature.

MED 170—DIGITAL PHOTOGRAPHY/ PHOTOSHOP **3-0-3**

This course covers the basic operation of digital camera systems, including computer-based image editing, retouching and enhancement. Adobe Photoshop software is used to produce state-of- the art images. Basic studio lighting as it applies to digital photography is also explored. Emerging technology will also be explored. Students must have a DSLR camera.

MED 199—INTERNSHIP **1-12-3**

Obtain on-the-job experience in the media industry through working in an operating establishment under the supervision of management personnel. Seminars are conducted for the students to discuss their experiences. Students are responsible for transportation to their off-campus sites. Prerequisite(s): Permission of instructor and completion of 30 credits in major course requirements

MED 200—PORTFOLIO DEVELOPMENT **1-2-3**

Review of existing student work and development of additional pieces into a viable self-sales tool for seeking employment. Elements will include: digital prints, computer-based presentation and DVD. Assignments will update print and/or multimedia portfolios toward a specific career endeavor. Basic methods of job marketing and self-promotion will be examined. Students will utilize prior lab experience to work independently in the production of requirements. Prerequisite(s): MED 170, MED 271

MED 240—AUDIO TECHNIQUES/AUDITION **3-0-3**

This introductory level course introduces students to Adobe Audition software. It incorporates the fundamental use of basic digital sound creation for use in DVD's digital presentations and nonlinear video.

MED 255—PUBLIC RELATIONS **3-0-3**

Covers corporate and nonprofit public relations, its development, definitions, practice and tools. Utilization of the electronic and print media as a means of enhancing corporate image will be addressed through individual and collaborative assignments.

MED 256—ADVERTISING **3-0-3**

A fundamental overview of advertising with an emphasis on researching, developing and implementing advertising campaigns. Class projects use electronic and print media to explore the many different facets of advertising.

MED 257—TELEVISION PRODUCTION 2-2-3
This course introduces multi-camera studio digital video production. Students will learn basic camera operation and principles of studio-based, live-switched productions. Studio lighting procedures along with editing, scripting and storyboarding will be presented. Emerging technology will also be explored. Prerequisite(s): MED 159

MED 260—INTERACTIVE MULTIMEDIA 3-0-3
Introductory course using Adobe Encore to author DVDs. Elements of audio, video and special effects are incorporated into DVD projects. This course incorporates screen design, interactive navigation, sound, text, graphics and video to produce interactive DVDs for training, weddings, education, kiosks and corporate use. Prerequisite(s): MED 150 recommended but not required.

MED 263—PHOTOJOURNALISM 3-0-3
Photojournalism is an intermediate study in technique and production of images for newspapers magazines and the Internet. A continuation of MED 170 and MED 205, incorporating digital images used for publication. Prerequisite(s): MED 170 and MED 161 or MED 271

MED 265—COLOR PHOTOGRAPHY 3-0-3
Covers the technical aspects of camera RAW and digital darkroom procedures essential to working with color digital materials. Digital darkroom technique and inkjet processing of various color print materials is utilized extensively in the course. Emerging technology will also be explored. Prerequisite(s): MED 160

MED 266—STUDIO/LOCATION PHOTOGRAPHY 3-0-3
Instructs students in studio and location situations as they apply to commercial digital photography. Studies encompass elements of lighting techniques and examination of the medium and large format camera to create images while working from a layout. Portfolio assignments develop skills in illustrative, industrial, architectural and fashion areas of photography. Prerequisite(s): MED 161, MED 170, MED 271

MED 270—ADVANCED EDITING AND VIDEO TECHNIQUES/PREMIERE PRO 3-0-3
A continuation of MED 150, emphasis is on nonlinear Adobe Premiere Pro video editing software. Advanced effect techniques are used to animate, change speeds, green screen and apply color corrections. Compositing and advanced camera techniques are also explored. Emerging technology will also be explored. Student must have a DV Digital Video or DSLR camera and external hard drive. Prerequisite(s): MED 150

MED 271—ADVANCED DIGITAL PHOTOGRAPHY/PHOTOSHOP 3-0-3
This is a continued exploration of digital camera systems. Advanced computer-based image manipulation and retouching will be covered using Adobe Photoshop software to produce creative, state-of-the-art portfolio intended images. Studio set-up and lighting instruction will allow students to develop personal digital pieces. Emerging technology will also be explored. Prerequisite(s): MED 170

MED 290—VIDEO SPECIAL EFFECTS 3-0-3
Students will learn the basic creation of animating shapes, motion and text effects utilized in video and DVD authoring for use in software such as Premiere Pro and Encore. They should have basic nonlinear editing experience prior to attempting this course. Prerequisite(s): MED 150

MED 299—INTERNSHIP 1-12-3
Obtain experience in the media industry through working in an operating establishment under the supervision of management personnel. Seminars are conducted for students to discuss their experiences. Students are responsible for transportation to their off-campus sites. Prerequisite: Permission of Instructor and completion of 30 credits in major course requirements.

MET–METALLURGY

MET 105—WELDING METALLURGY I 3-2-4
A study of the manufacturing of metals and alloys, emphasizing their properties as to weldability. Demonstrations in the use of tensile testor, impact testor, metallograph, metallurgical microscopes and polishing techniques. Also included is the advanced study of properties of metals and alloys with a particular emphasis on practical plant problems and processes. Includes a study of heat treatment, casting, plating and rolling. Laboratory studies will include emphasis on the above material.

MKT–MARKETING

MKT 199—MARKETING INTERNSHIP 1-12-3
Students will gain exposure and insight into the marketing/retail industry through supervised and evaluated on-the-job experience. Students will select locations for internships from instructor- approved business sites in southwestern Pennsylvania. Seminars will be conducted weekly for students to discuss their experiences. Prerequisite(S): 18 completed credits

MKT 242—RETAILING 3-0-3
Principles of retailing as applied to the retailing activities of location, organization, human resources, buying, inventory control, selling, services, expenses and profits.

MKT 251—CONSUMER BEHAVIOR 3-0-3
This course is a comprehensive attempt to understand why people buy things and to appreciate how products, services and consumption activities contribute to the broader social world we experience. Progressive ideas on e-commerce and globalization are presented. Cross-cultural examples are discussed within a framework of marketing theory and strategy.

MKT 252—PUBLIC RELATIONS 3-0-3
The purpose of this course is to introduce students to the concepts of effective public relations and prepare them to deal with the situations and arrive at the solutions that distinguish the practice of communication in a world experiencing the unbridled growth of the Internet. At the same time, the integration of the relationship among agencies, clients and the media is incorporated along with the practice and management of public relations.

MKT 253—GLOBAL MARKETING 3-0-3
This course introduces the student to the principles of global marketing. Emphasis will be placed on the strategic use of the Internet to successfully interact socially, culturally and environmentally in global markets. A strategic environmental approach is employed to outline the major dimensions of the social foundation and financial environment needed to apply basic marketing principles to global business practices.

MKT 254—ADVERTISING AND PROMOTION 3-0-3
Studies the basic facets of advertising including its planning, creation and implementation. Course emphasis is on the development of advertising strategies to meet the challenges of marketing situations. Students investigate the process of budget planning, the practical application of market research to the creation of advertising campaigns, media planning, and the coordination of media advertising and promotional techniques as part of the overall marketing strategy of a business enterprise.

MPT–MANUFACTURING PROCESS TECHNOLOGY

MPT 109—INTRODUCTION TO SCADA 1-1-1
A study of Supervisory Control and Data Acquisition Systems (SCADA). This course is an introduction to basic automation with focus on SCADA and Remote Terminal Units (RTUs). Students will learn the basics of analog and digital output modules and will discuss system availability and reliability. The components and configuration of SCADA control systems will be explored. Applications of SCADA in the industry will be identified. Students will program a basic SCADA by installing parameters to simulate this type of automation in industry.

MPT 199—MANUFACTURING PROCESS TECHNOLOGY INTERNSHIP 1-12-3

Students will obtain experience in the manufacturing process technology field through a combination of occupational instruction and on-the -job training. This course integrates classroom occupational study with a planned supervised practical work experience. Prerequisite(s): Permission of instructor

MPT 211—MATERIAL, SAFETY AND EQUIPMENT OVERVIEW FOR NANOTECHNOLOGY 2-2-3

This course will provide an overview of basic nanofabrication processing equipment and materials handling procedures. The focus is on procedural, safety, environment and health issues in equipment operation and materials handling. Topics to be covered will include: cleanroom operation, safety and health issues; vacuum pump systems operation, environmental safety, and health issues (covering direct drive mechanical, roots blowers, turbonmolecular, and dry mechanical systems); furnace operation, safety, environmental and health issues (covering horizontal, vertical, rapid thermal annealing tools); chemical vapor deposition system operation, safety, environmental and health issues (covering gas delivery, corrosive and flammable gas storage and plumbing, regulators, and mass flow controls); and vacuum deposition/etching system operation, safety, environment and health issues covering microwave and RF power supplies and tuners, heating and cooling units, vacuum gauges, valves and process controllers. Specific materials handling issues will include DI water, solvents, cleansers, ion implantation sources, diffusion sources, photoresists, developers, metals, dielectrics, and toxic, flammable, corrosive, and high purity gases as well as packaging materials.

MPT 212—BASIC NANOTECHNOLOGY PROCESSES 2-2-3

This course will provide an overview of basic processing steps in nanofabrication. The majority of the course details a step-by-step description of the equipment and processes needed to fabricate devices and structures. Processing flow will be examined for structures such as microelectromechanical (MEM) devices, biomedical "lab-on-a-chip" structures, display devices, and microelectronic devices including diode, transistor, and full CMOS structures. Students will learn the similarities and differences in both equipment and process flow for each configuration by undertaking "hands-on" processing.

MPT 213—MATERIALS IN NANOTECHNOLOGY 2-2-3

This course will cover thin film deposition and etching practices in nanofabrication. The deposition techniques to be included in the first part of the course will include atmospheric, low pressure, and plasma enhanced chemical vapor deposition and sputtering; thermal evaporation; and beam evaporation physical vapor deposition. Materials to be considered will include dielectics (nitride, oxide), polysilicon (doped and undoped) metals (aluminum, tungsten, copper), adhesion promoters and diffusion barriers. The second part of the course will focus on etching processes and will emphasize reactive ion etching (single wafer, batch), high-ion-density reactors, ion beam etching and wet chemical etching. Student will receive hands-on experience in depositing and etching dielectric, semiconductor and metal materials using state-of-the-art tools and practicing many of the steps critical to nanofabrication of semiconductor devices including microelectronic, MEMs devices, display structures and structures used in the biotechnology fields.

MPT 214—PATTERNING FOR NANOTECHNOLOGY 2-2-4

This specific course will cover all aspects of lithography from design and mask fabrication to pattern transfer and inspection. The course is divided into three major sections. The first section describes the lithographic process from substrate preparation to exposure. Most of the emphasis will be on understanding the nature and behavior of photoresist materials. The second section examines the process from development through inspection (both before and after pattern transfer). This section will introduce optical masks, aligners, steppers and scanners. In addition, critical dimension (CD) control and profile control of photoresists will be investigated. The last section will discuss advanced optical lithographic techniques such as phase shifting masks and illumination schemes as well as 3-beam, X-ray, EUV, and ion beam lithography.

MPT 215—MATERIALS MODIFICATION FOR NANOTECHNOLOGY APPLICATIONS 2-2-3

This course will cover in detail the processing steps used in modifying material properties in nanofabrication. Included will be growth and annealing processes utilizing horizontal and vertical furnaces as well as rapid thermal annealing. The impact of thermal processing and thermal processing on defects, gettering, impurities and overall electrical mechanical, optical, electrical and chemical properties will be studied. The student will grow and measure gate and field oxides, implant and activate source and drain regions, and evaluate thermal budget requirements using state-of-the-art tools. Included also will be other modification technologies such as ion implantation, diffusion and surface preparation and treatment. Substrate preparation processing such as slicing, etching, polishing and epitaxial growth will be covered.

MPT 216—TESTING OF NANOTECHNOLOGY STRUCTURES AND MATERIALS 2-2-3

This course will examine a variety of techniques and measurements essential for controlling device fabrication and final packaging. Monitoring techniques such as residual gas analysis (RGA), optical emission spectroscopy (OES) and end point detection will be discussed. Characterization techniques such as: SEM, XPS/Auger, surface profilometry, advanced optical microscopy, optical thin film measurements, ellipsometry, and resistivity/conductivity to yield analysis and process control will also be stressed. These will include breakdown measurements, junction testing, C-V and I-V tests and simple transistor characterization. In addition, we will examine mechanical as well as electrical characteristics of some simple MEMs devices and chemical and biological responses of nanofabricated biomedical structures. The student will also learn about the manufacturing issues involved in subjects such as interconnects, isolation and final device assembly. Aluminum, refractory metals and copper deposition techniques and characterization will be discussed in detail along with topics such as diffusion barriers, contact resistance, electromigration, corrosion, stress effects, and adhesion. The importance of planarization techniques such as deposition/etchback and chemical/mechanical polishing will be emphasized. Lastly, packaging procedures such as die separation, inspection bonding, sealing and final test for both conventional ICs and novel MEM and biomedical devices will be examined.

MPT 240—INTRODUCTION TO AUTOMATED MANUFACTURING 2-2-3

Provides students with an overview of the hardware and functions of industrial robotics, and hands-on training with a state-of-the art industrial robot. Lecture topics include robot configuration, tooling, application information, safety considerations and future trends. Laboratory work allows students to create, edit and execute programs on a 5-axis, industrial robot.

MTH–MATHEMATICS

MTH 050—BASIC MATHEMATICS 3-0-3

Designed for students who need to develop the basic mathematic skills that are essential to success in more advanced college level work. Content material includes computational skills of whole numbers, fractions, decimals, percents, ratios, proportions and elementary algebra. Word problems are strategically placed throughout the course both to motivate and reinforce learning. Developmental courses may not be used to fulfill degree requirements. Prerequisite(s): Placement Test

MTH 052—FOUNDATIONS OF ALGEBRA 3-0-3

An introduction to elementary algebra that provides basic principles, concepts and techniques that are necessary for student success in higher level mathematics courses. Content material includes integers, operations with rational expressions, positive and negative exponents, factoring the solution of first and second degree equations, and word problems. Designed for students with little or no algebra background. Developmental courses may not be used to fulfill degree requirements. Prerequisite(s): Placement Test or MTH 050

MTH 052A—BASIC MATHEMATICS/ FOUNDATIONS OF ALGEBRA 4-0-4

Basic mathematics and intro to elementary algebra provides basic principles, concepts and techniques that are necessary for student's success in higher level mathematics courses. Content material includes integers, operations with rational expressions, positive and negative exponents, solutions of first and second degree equations, and word problems. This course is designed for students with little or no algebra background. Developmental courses may not be used to fulfill graduation requirements. Prerequisite(s): MTH 050 or satisfactory Placement Test score

MTH 100—INTERMEDIATE ALGEBRA 3-0-3

Designed for students with some previous algebra background. Further enhances these algebraic skills and develops others necessary for achievement in College Algebra. Content materials include solving first and second degree equations, polynomial functions, rational functions, exponents, radicals and topics related to them, scientific notation and word problems. Prerequisite(s): MTH 052 or satisfactory Placement Test score

MTH 100A—INTERMEDIATE ALGEBRA WITH FOUNDATIONS 4-0-4

Designed for students with some previous algebra background but gaps in elementary algebra. Further enhances these algebraic skills and develops others necessary for achievement in College Algebra. Content materials include simplifying algebraic expressions, the rules of exponents, operations on polynomials, solving first and second degree equations, polynomial functions, rational functions, exponents, radicals and topics related to them, scientific notation and word problems. Prerequisite: MTH 052

MTH 108—MATHEMATICS FOR THE TECHNOLOGIES I 4-0-4

A course for technologies majors emphasizing application and problem solving. Topics include: review of fundamental algebra; formula transformation; dimensions and units; radicals; systems of linear equations, graphing of data, equations and functions; right triangle trigonometry; and quadratic equations and functions. Prerequisite(s): MTH 052 or satisfactory Placement Test score

MTH 109—MATHEMATICS FOR THE TECHNOLOGIES II 4-0-4

A course for technologies majors emphasizing application problem solving and proof. Topics include: graphs of trigonometric functions, operations with complex numbers, logarithmic and exponential functions, and equations, introduction to analytic geometry, algebraic radicals, trigonometric identities and equations. Prerequisite(s): MTH 108 or satisfactory Placement Test score

MTH 157—COLLEGE ALGEBRA 3-0-3

Topics include an overview of basic skills learned in intermediate algebra with additional emphasis on equation solving; inequalities; systems of equations; complex numbers; graphing techniques for linear, polynomial, and rational functions; circles; absolute value; polynomial division and synthetic division; and piece-wise functions. Prerequisite(s): MTH 100 or MTH 100A or satisfactory Placement Test score

MTH 158—PRECALCULUS MATHEMATICS 3-0-3

Designed to prepare students for calculus. Topics covered include: exponential logarithmic and trigonometric functions and their graphs, identities, applications, calculator usage, logarithmic. exponential and trigonometric equation and problem solving. Prerequisite(s): MTH 157 or satisfactory Placement Test score

MTH 160—INTRODUCTION TO STATISTICS 3-0-3

An introduction to statistics with an emphasis on application rather than theoretical development. Topics covered include: frequency distributions, measures of central tendency, measures of dispersion, statistical inference, testing of hypotheses, regression and correlations. Elementary research designs are included. It is advised that students have a background in algebra. Prerequisite(s): MTH 052 or satisfactory Placement Test score

MTH 161—MODERN COLLEGE MATHEMATICS 3-0-3

A course designed for students preparing for the pre-nursing exam and non-science majors. Topics include limited coverage of algebra and geometry, a discussion of ratios and proportions, and some work with percentages, probabilities, dimensional analysis and statistics. Prerequisite(s): MTH 052 or satisfactory Placement Test score

MTH 172—ANALYTICAL GEOMETRY AND CALCULUS I 4-0-4

A first course in calculus and analytical geometry. Topics include limits and derivatives of algebraic and trigonometric functions; applications of derivatives, continuity and basic integration techniques. Prerequisite(s): MTH 109, MTH 158 or satisfactory Placement Test score

MTH 173—ANALYTICAL GEOMETRY AND CALCULUS II 4-0-4

Continuation of MTH 172. Differential and integral calculus of algebraic and transcendental functions; analytical geometry, techniques of integration and application of the integral, sequences and series, convergence and divergence theorems. Prerequisite(s): MTH 172

MTH 180—ELEMENTS OF MATHEMATICS I 3-0-3

A presentation of the mathematics central to a comprehensive elementary and middle-school mathematics curriculum. The four-step problem solving process is stressed throughout the course. Topics included are sets, numeration, operations and properties of real numbers, number theory, fractions, decimals, percent, ratio and proportion, and algebra basics. Prerequisite(s): MTH 052 or satisfactory Placement Test score

MTH 185—ELEMENTS OF MATHEMATICS II 3-0-3

Designed to follow Elements of Mathematics I and continue with more advanced topics in mathematics focusing on the problem solving process. Areas of emphasis include probability and statistics, geometry, computer topics, logic, and measurement. Prerequisite(s): MTH 180

MTH 271—ANALYTICAL GEOMETRY AND CALCULUS III 4-0-4

This is a continuation of MTH 173. Topics include two and three dimensional vectors, areas and surfaces, multi-variable and partial derivatives, double and triple integrals and applications. Prerequisite(s): MTH 173

MTH 272—DIFFERENTIAL EQUATIONS 3-0-3

First order ordinary differential equations. Linear differential equations with constant coefficients. Solutions of differential equations by use of series. Laplace transforms. Prerequisite(s): MTH 271

MTT–MACHINE TECHNOLOGY

MTT 101—BLUEPRINTS 3-2-4

This course will introduce students to the basic principles, terminology, and symbology used on machining blueprints. The course will include instruction in both conventional dimensioning and geometric dimensioning and tolerancing. Machining prints will be examined and interpreted.

MTT 102—GEOMETRIC DIMENSIONING AND TOLERANCING 2-2-3

This course is structured to increase one's ability to accurately interpret machine drawings. Classroom activities include GD&T theory, fits and clearance, surface finishes, advanced technologies, datum relations, true positioning and complex drawings.

MTT 111—MACHINING I 2-4-4

This course will introduce students to manual shop machining. Topics will include safety, measurement, benchwork, layout, hand tools, cutoff machines, offhand grinding, holemaking, workholding, drill press, mills, lathes, grinders, and feeds and speeds. Corequisite(s): MTH 108

MTT 112—MACHINING II 2-6-5
This course will introduce students to basic milling, lathe and grinding operations. Topics include machine parts, machine operations, toolholding, holemaking, chucks, cutting tools, facing, turning, knurling, threading, endmills, cutters, abrasives and surface grinding. Prerequisite(s): MTT 111; Corequisite(s): MTH 109

MTT 201—INSPECTION 3-2-4
This course will introduce the students to the principles and procedures used to inspect machined parts, using both mechanical and electronic inspection equipment. The students will conduct hands-on inspections to determine part acceptability. Quality control will also be discussed.

MTT 202— MAINTENANCE 2-4-4
This course will introduce students to the basic principles and procedures used to maintain machine shop equipment. Both preventative maintenance and machinery repair will covered. The students will spend time disassembling, repairing, and reassembling machine shop equipment. Prerequisite(s): MTT 111

MTT 213—MACHINING III 2-6-5
This course will provide students with further training and experience using mills, lathes, and grinders. Topics will include squaring, angular machining, rotary tables, indexing heads, grooving, slotting, radii, pocketing, taper turning, sine chucks, cylindrical grinding and EDM. Prerequisite MTT 112

MTT 214—MACHINING IV 2-8-6
This course will enable students to develop expertise in manual shop machining. Students will work on projects to produce finished parts from raw materials. Production steps will include planning, layout, sawing, tooling, fixturing, milling, turning, grinding and inspection. Prerequisite MTT 213

MUS–MUSIC

MUS 111—FUNDAMENTALS OF MUSIC THEORY 3-0-3
This course is designed for all students regardless of their musical background, who want to learn the basics of music theory. The course will provide students the ability to read music and understand how to write music at a basic level. Fundamentals of Music is an introduction to the primary skills of music practice emphasizing the reading and writing of musical notation. Students will learn basic theory, ear training, and sight-singing skills.

MUS 115—THEORY SKILLS I 1-0-1
This course develops aural skills through dictation and interpretation of written music using sight singing, ear training, and music dictation. Corequisite(s): MUS 165

MUS 116—MUSIC AURAL THEORY SKILLS II 1-0-1
Develops aural skills through dictation and interpretation of written music by sight singing. Prerequisite(s) MUS 115; Corequisite(s): MUS 166

MUS 117—FUNDAMENTALS OF APPLIED 1-0-1
MUSIC LESSONS I or 2-0-2
This course is designed for all students, regardless of their musical background, who want to learn the basics of applied music. The course will provide the opportunity to learn to play music on one of the following: woodwinds, brass, strings, piano, organ or voice. The course is designed for students who (1) want to become music majors for admission into the music program or (2) for those who want to increase their knowledge in music performance but not in a degree program. Fundamentals of Applied Music Lessons are an introduction to the skills of performance emphasizing the reading and playing of music. Students will learn scales, entry level literature, embouchure development, basic theory and sight-reading skills. Except for large percussion instruments, students must own the instruments for which they are taking lessons. This course satisfies no requirement of the music program. Private lessons take place 30 minutes per week per semester for one (1) credit. Cost of credit plus private lesson fee apply. Prerequisite: Departmental approval.

MUS 118—FUNDAMENTALS OF APPLIED 1-0-1
MUSIC LESSONS II or 2-0-2
This course is designed for all students, regardless of their musical background, who want to learn the basics of applied music. The course will provide the opportunity to learn to play music on one of the following: woodwinds, brass, strings, piano, organ, or voice. The course is designed for students who (1) want to become music majors for admission into the music program or (2) for those who want to increase their knowledge in music performance but not in a degree program. Fundamentals of Applied Music Lessons are an introduction to the skills of performance emphasizing the reading and playing of music. Students will learn scales, entry level literature, embouchure development, basic theory and sight-reading skills. Except for large percussion instruments, students must own the instruments for which they are taking lessons. This course satisfies no requirement of the music program. Private lessons take place 30 minutes per week per semester for one (1) credit. Cost of credit plus private lesson fee apply. Prerequisite: MUS 117 and departmental approval.

MUS 119—FUNDAMENTALS OF APPLIED 1-0-1
MUSIC LESSONS III or 2-0-2
This course is designed for all students, regardless of their musical background, who want to learn the basics of applied music. The course will provide the opportunity to learn to play music on one of the following: woodwinds, brass, strings, piano, organ or voice. The course is designed for students who (1) want to become music majors for admission into the music program or (2) for those who want to increase their knowledge in music performance but not in a degree program. Fundamentals of Applied Music Lessons are an introduction to the skills of performance emphasizing the reading and playing of music. Students will learn scales, entry level literature, embouchure development, basic theory and sight-reading skills. Except for large percussion instruments, students must own the instruments for which they are taking lessons. This course satisfies no requirement of the music program. Private lessons take place 30 minutes per week per semester for one (1) credit. Cost of credit plus private lesson fee apply. Prerequisite: MUS 118 and departmental approval.

MUS 120—FUNDAMENTALS OF APPLIED 1-0-1
MUSIC LESSONS IV or 2-0-2
This course is designed for all students, regardless of their musical background, who want to learn the basics of applied music. The course will provide the opportunity to learn to play music on one of the following: woodwinds, brass, strings, piano, organ or voice. The course is designed for students who (1) want to become music majors for admission into the music program or (2) for those who want to increase their knowledge in music performance but not in a degree program. Fundamentals of Applied Music Lessons are an introduction to the skills of performance emphasizing the reading and playing of music. Students will learn scales, entry level literature, embouchure development, basic theory and sight-reading skills. Except for large percussion instruments, students must own the instruments for which they are taking lessons. This course satisfies no requirement of the music program. Private lessons take place 30 minutes per week per semester for one (1) credit. Cost of credit plus private lesson fee apply. Prerequisite: MUS 119 and departmental approval.

MUS 121—APPLIED MUSIC I 1-0-1 or 2-0-2
Students receive one hour of private instruction per week in performance techniques. Assists students in developing skills in voice or in any of a variety of musical instruments. Students are encouraged to perform to the highest artistic level of capability.

MUS 122—APPLIED MUSIC II 1-0-1 or 2-0-2
Students receive one hour of private instruction per week in performance techniques. Assists students in developing skills in voice or in any of a variety of musical instruments. Students are encouraged to perform to the highest artistic level of capability.

MUS 131—CLASS VOICE I 2-0-2
An introduction to proper vocal technique. Students develop skills in proper breathing, diction, and posture, performing for other students in the class. Subsequent to two semesters, students are encouraged to take applied voice lessons.

MUS 132—CLASS VOICE II 2-0-2
Students develop skills in proper breathing, diction and posture performing for other student in the class.

MUS 141—COLLEGE SYMPHONIC BAND I 2-0-2
The WCCC Symphonic Band is a collaboration of the community and student musicians who rehearse together to perform two concerts a year. The repertoire ranges from the recognized band literature to the less explored. Rehearsals are once a week for three hours. The inclusion of semi-professional musicians from the community greatly enhances the artistic and educational experiences of student participation in a symphonic band. This course is designed for all students who play flute, clarinet, oboe, bassoon, alto, tenor, baritone saxophone, French horn, trumpet, trombone, baritone tuba, string bass, and percussion (snare, bass drums, marimba, bells, timpani and cymbals). This ensemble provides students the opportunity to rehearse and perform band music appropriate for performance. The repertoire will include music literature from all band music periods. There will be no auditions to become a member. Students will sit in their section based on playing ability. Prerequisite(s): Instrumental experience

MUS 142—COLLEGE SYMPHONIC BAND II 2-0-2
The WCCC College Symphonic Band II is a collaboration of the community and student musicians who rehearse together to perform two concerts a year. The repertoire ranges from the recognized band literature to the less explored. Rehearsals are once a week for three hours. The inclusion of semi-professional musicians from the community greatly enhances the artistic and educational experiences of student participation in a symphonic band. This course is designed for all students who play flute, clarinet, oboe, bassoon, alto, tenor, baritone saxophone, French horn, trumpet, trombone, baritone tuba, string bass, and percussion (snare, bass drums, marimba, bells, timpani and cymbals). This ensemble provides students the opportunity to rehearse and perform band music appropriate for performance. The repertoire will include music literature from all band music periods. There will be no auditions to become a member. Students will sit in their section based on playing ability. Prerequisite(s): Instrumental experience and Band I

MUS 155—MUSIC LISTENING: A SURVEY 3-0-3
Introduces the study of the elements of music, instruments of the orchestra, and the lives and works of composers from the Renaissance, Baroque, Classical, Romantic, and Contemporary eras. Corresponding listening selections are provided in class.

MUS 160—MUSIC HISTORY I 3-0-3
Presents the historical unfolding of the major achievements of music in Western culture from Medieval music through the end of the Baroque period. Emphasis will be on the evolution of form, harmonic technique, and style from ancient times to 1750. The student will study and research composers, compositions and styles of the Medieval, Renaissance and Baroque periods. Prerequisite(s): MUS 155

MUS 165—MUSIC THEORY I 3-0-3
This course is designed for all students who want to become music majors or have a strong interest in music. These students will study harmonic, melodic, and formal devices of common practice period, from simple diatonic chords through seventh chords, Students will learn ear training, and sight-singing skills in conjuction with their course at the same time. Prerequisite(s): MUS 111, AP Music Theory test or permission of instructor

MUS 166—MUSIC THEORY II 3-0-3
This course is designed for music majors and non-music majors with adequate musical background. Musical compositions will be studies and analyzed. Emphasis is on sight-singing and dictation of diatonic harmonies and exercises. This will prepare the music student for further advanced studies in the music field.

MUS 175—COLLEGE CHOIR I 2-0-2
This course is designed for all students. This ensemble provides students the opportunity to rehearse and perform choral music appropriate for all voices. The repertoire includes literature from all music periods and styles. There are no auditions to become a member. Students may audition for solos, duets, or when needed, instrumental selections. Prerequisite(s): Each level requires completion of previous level

MUS 176—COLLEGE CHOIR II 2-0-2
This course is designed for all students. This ensemble provides students the opportunity to rehearse and perform choral music appropriate for all voices. The repertoire will include literature from all music periods and styles. There are no auditions to become a member. Students may audition for solos, duets, or when needed, instrumental selections.

MUS 177—COLLEGE ORCHESTRA I 2-0-2
The WCCC Orchestra is a collaboration of the community and student musicians who rehearse together to perform two concerts a year. The repertoire ranges from the recognized orchestral monuments to the less explored. Rehearsals are once a week for two and one half hours. Prerequisite(s): Each level requires completion of previous level

MUS 178—COLLEGE ORCHESTRA II 2-0-2
The WCCC Orchestra is a collaboration of the community and student musicians who rehearse together to perform two concerts a year. The repertoire ranges from the recognized orchestral monuments to the less explored. Rehearsals are once a week for two and one half hours. The inclusion of semi professional musicians from the community greatly enhances the artistic and educational experiences of student participation in an orchestra. This course is designed for all students who play orchestral instruments. This ensemble provides students the opportunity to rehearse and perform orchestra music appropriate for all instrumentalists. The repertoire will include music literature from all music periods and styles. There are no auditions to become a member. Students will sit in their section on playing ability. There are no auditions except for solos or duets when needed.

MUS 180—CLASS PIANO I 2-0-2
This course is designed for music majors, but open to non-music majors who want to acquire basic knowledge and skills in playing the piano. Classes are for students who have no piano background or more experienced performers. The students are able to progress at their own speed. The teacher monitors each student from the monitors stations and is able to instruct individually as well as collectively.

MUS 215—MUSIC AURAL THEORY SKILLS III 1-0-1
This course offers further development of sight-singing and ear training skills. Chromatic melodies are introduced, as are more difficult rhythms and meters; modal melodies are explored as well as melodies that modulate. In dictation, secondary-dominant harmonies of II and of V are introduced, as well as all intervals played harmonically, all seventh chords are utilized. Prerequisite(s): MUS 116, MUS 166; Corequisite(s): MUS 265

MUS 216—MUSIC AURAL THEORY SKILLS IV 1-0-1
This course will further development of sight-singing and ear training skills. Chromatic melodies are introduced, as are more difficult rhythms and meters; modal melodies are explored as well as melodies that modulate. In dictation, secondary-dominant harmonies of II and IV are introduced, as well as all intervals played harmonically; all seventh chords and utilized. Prerequisite(s): MUS 215, MUS 265; Corequisite(s): MUS 266

MUS 221—APPLIED MUSIC III 1-0-1 or 2-0-2
A continuation of MUS 122. Students receive one hour of private instruction per week in performance techniques. Assists students in developing skills in voice or in any of a variety of musical instruments. Students are encouraged to perform to the highest artistic level of capability.

MUS 222—APPLIED MUSIC IV 1-0-1 or 2-0-2
A continuation of Music 221. Students receive one hour of private instruction per week in performance techniques. Assists students in developing skills in voice or in any variety of musical instruments. Students are encouraged to perform to the highest artist level of capability.

MUS 241—COLLEGE SYMPHONIC BAND III 2-0-2
The WCCC Symphonic Band III is a collaboration of the community and student musicians who rehearse together to perform two concerts a year. The repertoire ranges from the recognized band literature to the less explored. Rehearsals are once a week for three hours. The inclusion of semi-professional musicians from the community greatly enhances the artistic and educational experiences of student participation in a symphonic band. This course is designed for all students who play flute, clarinet, oboe, bassoon, alto, tenor, baritone saxophone, French horn, trumpet, trombone, baritone tuba, string bass, and percussion (snare, bass drums, marimba, bells, timpani and cymbals). This ensemble provides students the opportunity to rehearse and perform band music appropriate for performance. The repertoire will include music literature from all band music periods. There will be no auditions to become a member. Students will sit in their section based on playing ability. Prerequisite(s): Instrumental experience and Band II

MUS 242—COLLEGE SYMPHONIC BAND IV 2-0-2
The WCCC College Symphonic Band IV is a collaboration of the community and student musicians who rehearse together to perform two concerts a year. The repertoire ranges from the recognized band literature to the less explored. Rehearsals are once a week for three hours. The inclusion of semi-professional musicians from the community greatly enhances the artistic and educational experiences of student participation in a symphonic band. This course is designed for all students who play flute, clarinet, oboe, bassoon, alto, tenor, baritone saxophone, French horn, trumpet, trombone, baritone tuba, string bass, and percussion (snare, bass drums, marimba, bells, timpani and cymbals). This ensemble provides students the opportunity to rehearse and perform band music appropriate for performance. The repertoire will include music literature from all band music periods. There will be no auditions to become a member. Students will sit in their section based on playing ability. Prerequisite(s): Instrumental experience and Band II

MUS 255—AMERICAN POPULAR MUSIC 3-0-3
Open to all interested students, this course offers a panoramic view of the history of American popular music from the beginnings to the present. Upon completion of this course, the student will be able to identify and discuss each of the following aspects of American popular music: specific styles and style periods, pivotal compositions and composers, ethnic traditions which have been major contributors in the development and evolution of popular music, song forms and their contribution to style period development, influences on American history, and historical influences on popular music.

MUS 265—MUSIC THEORY III 3-0-3
This course is an extension of the techniques of the 18th and 19th centuries to include chromatic harmonies, advanced modulation and extended chords. Also this course introduces standard contrapuntal procedures. This course is designed for student who want to become music major and transfer to a four-year institution or have a strong interested in music. These students will continue to study harmonic, melodic and formal devices of common practice periods. Students will learn ear training and sight-singing skills in conjuction with this course at the same time in MUS 215. Prerequisite(s): MUS 116, MUS 166; Corequisite(s): MUS 215

MUS 266—MUSIC THEORY IV 3-0-3
Students in this course will study harmonies, and compositional techniques of the 20th century. Students will study styles and techniques that will include Popular Song Forms, Impressionism, Modalism, Octatonic Scales, Pitch Class Collections, Mixed Meters, Set Theory and Serialism. Prerequisite(s) MUS 215, MUS 265; Corequisite(s): MUS 216

MUS 275—COLLEGE CHOIR III 2-0-2
This course is designed for the music and non-music major. A variety of choral literature from all periods of music history will be rehearsed and performed. The course is required of all music majors but is open to all qualified students.

MUS 276—COLLEGE CHOIR IV 2-0-2
This course is designed for the music and non-music major. A variety of choral literature from all periods of music history will be rehearsed and performed. The course is required of all music majors but is open to all qualified students.

MUS 277—COLLEGE ORCHESTRA III 2-0-2
The WCCC Orchestra is a collaboration of the community and student musicians who rehearse together to perform two concerts a year. The repertoire ranges from the recognized orchestral monuments to the less explored. Rehearsals are once a week for two and one half hours. The inclusion of semi professional musicians from the community greatly enhances the artistic and educational experiences of student participation in an orchestra. This course is designed for all students who play orchestral instruments. This ensemble provides students the opportunity to rehearse and perform orchestra music appropriate for all instrumentalists. The repertoire will include music literature from all music periods and styles. There are no auditions to become a member. Students will sit in their section on playing ability. There are no auditions except for solos or duets when needed.

MUS 278—COLLEGE ORCHESTRA IV 2-0-2
The WCCC Orchestra is a collaboration of the community and student musicians who rehearse together to perform two concerts a year. The repertoire ranges from the recognized orchestral monuments to the less explored. Rehearsals are once a week for two and one half hours. The inclusion of semi-professional musicians from the community greatly enhances the artistic and educational experiences of student participation in an orchestra. This course is designed for all students who play orchestral instruments. This ensemble provides students the opportunity to rehearse and perform orchestra music appropriate for all instrumentalists. The repertoire will include music literature from all music periods and styles. There are no auditions to become a member. Students will sit in their section on playing ability. There are no auditions except for solos or duets when needed.

MUS 280—CLASS PIANO II 2-0-2
This course is designed for those students who have had prior keyboard knowledge and are at an early intermediate level of playing or students who have reached a level of performance in Piano I that places them at the early intermediate level. Harmonization and sight-reading will be emphasized as well as further studies in classical and folk music. Proficiency level will be evaluated and approved by the instructor.

MUS 285—COLLEGE STAGE BAND I .5-3-2
The Westmoreland County Community College Stage Band is a collaboration of the community and student musicians who rehearse together to perform two concerts a year. The repertoire ranges from the recognized stage band literature to the less explored. Rehearsals are twice a week for four hours. Prerequisite(s): Must pass audition

NGT–NATURAL GAS TECHNOLOGY

NGT 100—COMMUNICATION TEAMWORK AND CONFLICT RESOLUTION IN INDUSTRY 1-0-1
The work environment is a dynamic and ever changing place. Employers expect that their employees will possess both the technical and the interpersonal skills necessary to get the job done. Employees may work in teams, make presentations to clients, be responsible for keeping project managers informed on project progress, or interact with representatives from regulatory agencies. Thus, effective communication skills are in integral part of ensuring success in any job. In addition, a fundamental factor that will determine success in many industries is the ability to work within a team environment where conflict is expected. Understanding how to manage conflict and use it in a productive manner will help ensure that the team and the project is a success. This course will assist the student in developing the skills necessary to be an effective communicator and a valuable team member.

NGT 101—OVERVIEW OF THE NATURAL GAS AND OIL TECHNOLOGY 4-0-4
A comprehensive study of the natural gas and oil industry. Topics to be covered include industry sectors; history of natural gas and oil drilling, production, transportation, storage and transmission processes; and environmental topics. Students will be required to complete the PEC Core Compliance safety program. Special focus on career opportunities in the industry.

NGT 105—EMERGENCY RESPONSE FOR NATURAL GAS AND OIL **1-0-1**

Natural gas and oil field jobsite are usually very safe, however there is potential for emergency situations. This course will present the various emergency situations that may occur at a natural gas/oil exploration, production, transmission, storage, and/or distribution location. Students will learn the proper procedures for handling these situations. Real-world scenarios and past emergency situations will be examined. Students must maintain a current Heartsaver First Aid: Adult/Child AED and CPR and Infant CPR designation.

NGT 110—ENVIRONMENTAL PROTECTION-METHODS AND DEVICES FOR NATURAL GAS AND OIL INDUSTRY **2-1-2**

A study of the laws, regulations, best practices and good neighbor policies in place which ensure that natural gas exploration, production, distribution and transmission activities comply with environmental standards. This course is an introduction to the basic requirements for air quality, water resources protection/preservation and land use. Other practices intended to preserve and protect the environment will also be explored. There will be a focus on the methods and devices utilized in the various facets of the natural gas and oil industry. Students will learn the basics of the legal requirements, the responses expected with challenged with protecting the environment and the consequences of not adhering to laws and regulations. Students will demonstrate their knowledge of the right way to protect the environment in various industry situations by developing a protection plan and describing the implementation of the plan.

NGT 140—GAS PROCESSING I **3-2-4**

Natural gas must be processed to achieve marketable products that meet desired production specifications. This course will instruct the student interested in becoming plant operating personnel by introducing an understanding of the process techniques and equipment used. The plant systems covered in this course include gas feed receipt and condensate stabilization; dew-point control and refrigeration systems; treating, dehydration and mercury removal of hydrocarbons; NGL recovery and fractionation as well as nitrogen rejection units. This improved understanding of plant process operations and effective process plant surveillance techniques will lead to an increased ability to achieve optimum, economical operating performance.

NGT 150—GAS COMPRESSION AND FLOW DYNAMICS **3-2-4**

Many oil field lease operators are required to provide maintenance and service for reciprocating gas compressors. Downtime for a gas compressor is extremely expensive and trained service technicians can do much to prevent downtime. This course will review basic math required to understand equations and ratios which impact the function of natural gas compressors. Material will focus on understanding equations which are important to compressor assembly and operations. Students will also review variables and understand the relationship between variables in these types of equations. Students in this class will review compressor service manuals furnished by the manufacturing in addition to laboratory and classroom exercises.

NGT 160—PETROLEUM INSTRUMENTATION **3-2-4**

This course is an overview of the latest procedures, practices and equipment used in the measurement of oil and natural gas. The course is designed to provide an introduction for employees who will deal regularly with measurements of oil and natural gas. The course provides a basic understanding of the metering equipment, techniques and calculations, required to accurately measure liquid levels in storage tanks as well as flowing natural gas.

NGT 170—CORROSION BASICS **3-2-4**

This course provides a basic understanding of the corrosion process, some common corroding agents, methods detecting and measuring corrosion and various methods of corrosion control with special emphasis on cathodic protection. The course is designed to provide an introduction for lease operators who will deal regularly with corrosion.

NSG–NURSING

NSG 100—TRANSITION TO THE PN PROGRAM **.5-1.5-2**

Offers the WCCC associate degree nursing student the opportunity to complete the additional hours necessary to meet the required hours of enrollment in a PA State Board approved practical nursing program. Enrollment in this course is restricted to WCCC Nursing Students who have successfully completed all Level I ADN Nursing courses, but did not successfully complete a Level II Nursing course, thus requiring exiting from the ADN Program. Enrollment is this course requires faculty approval for transfer into the Practical Nursing Program.

NSG 112—INTRODUCTION TO PROFESSIONAL NURSING AND HEALTH PROMOTION ACROSS THE LIFESPAN **2.16-2.52-3**

The five critical elements of the WCCC nursing program - caring, competency, communication, critical thinking and commitment - serve as a framework of the course. The course focuses on the profession of nursing, health care environment and health promotion/disease prevention. Broad course content includes the fundamental knowledge, skills and behaviors necessary to assimilate values, concepts and ethical standards central to nursing practice. Emphasis is placed on strategies to promote health and prevent disease for individuals and families across the lifespan in community settings. Prerequisite(s): BIO 171, CPT 150; Corequisite(s): BIO 172, NSG 114

NSG 114—HEALTH AND PHYSICAL ASSESSMENT THROUGHOUT THE LIFESPAN **2.33-2.10-3**

The five critical elements of the WCCC nursing program - caring, competency, communication, critical thinking and commitment - serve as the framework of the course. This course provides the basic knowledge needed to assess the health status of individuals from infancy through old age, including physical, developmental, psychological, cultural and spiritual dimensions. The laboratory experience, focused on the adult individual provides students the opportunities for skill acquisition in history taking, assessment skills and documentation of findings. Prerequisite(s): BIO 171, CPT 150; Corequisite(s):BIO 172, NSG 112, NSG 116

NSG 116—FOUNDATIONS OF NURSING CARE **3-12-7**

This course presents the basic concepts and practices skills that are fundamental to providing nursing care across the lifespan for individuals with basic human needs. An integration of principles from the biological, physical and behavioral sciences with nursing theory, prepares the student to use the nursing process to promote, maintain and restore health. The teaching of related practice skills takes place in the campus laboratory. The application of the basic concepts and practice skills occurs in various health care settings. Prerequisite(s): BIO 171, CPT 150, NSG 112; Corequisite(s): BIO 172, NSG 114

NSG 124—MEDICAL-SURGICAL NURSING CARE OF THE ADULT **4.5-13.5-9**

This course emphasizes the role of the nurse as provider and manager of care for adults, with common health problems who have alterations in physiologic, safety, esteem and self-actualization human needs. In addition, an emphasis in placed on health promotion, risk reduction, disease prevention and treatment to prevent health problems from occurring or reoccurring. Mental health concepts and management principles are introduced in this course to provide a basis for care of adult patients in the acute care setting. The opportunity to develop and practice selected skills is provided in the campus laboratory and in the acute care clinical setting. Prerequisite(s): BIO 171, BIO 172, CPT 150, NSG 112, NSG 114, NSG 116; Corequisite(s): ALH 120, PSY 160

NSG 130—PRACTICAL NURSING ROLE IN EXTENDED CARE SETTINGS **2-8-4**

Facilitates the student's transition to practical nursing practice. Content related to the practical nursing role as manager of care in extended care settings under the supervision of the registered nurse is explored. Issues related to beginning and maintaining a career of a practical nurse are also examined. Clinical laboratory experiences in the area of the extended care settings provide the opportunity for the student to apply knowledge, skills and behaviors developed in previous nursing courses. This course also provides the student with the opportunity to develop behaviors to manage care of individuals in the extended care setting under the supervision of the registered nurse. The course is required of PN students only. Prerequisite(s): First and second semester nursing and support courses Corequisite(s): SOC 155

NSG 131—BASIC NURSING CARE OF THE CHILDBEARING FAMILY **1.5-6-3**

Introduces the practical nursing student to the basic concepts, skills and behaviors necessary to provide care for childbearing individuals and families. The focus is on the care of childbearing individuals and their families with alterations in basic human needs. The campus laboratory provides the student with the opportunity to learn and practice skills necessary for providing basic care. Clinical laboratory experiences in area health care agencies offer opportunities for students to apply basic care concepts and skills. This course is required of PN students only. Prerequisite(s): First and second semester nursing and support courses Corequisite(s): SOC 155

NSG 132—BASIC NURSING CARE OF THE INFANT, CHILD AND FAMILY **1.5-6-3**

Introduces the practical nursing student to the basic care of the infant, child and family. The focus is on anticipatory guidance and care of the infant, child and family with alterations in basic human needs. Common health problems of the infant and child are examined. The practice of related nursing skills takes place in the campus laboratory. Clinical laboratory experiences in area health care and child care settings provide the student with opportunities to apply concepts to the care of infants, children and their families. This course is required of PN students only. Prerequisite(s): First and second semester nursing and support courses Corequisite(s): SOC 155

NSG 200—LPN TRANSITION INTO ASSOCIATE DEGREE NURSING **2.5-.5-3**

Designed specifically for the LPN who meets the criteria for advanced placement in the ADN program. Provides theoretical knowledge and practical experience which assists the student in making the transition from the practical to the professional nursing student role. The LPN will be familiarized with the nursing program at WCCC. The course emphasizes the major components of the conceptual framework of all nursing courses. These include caring, competency, communication, critical thinking, and commitment/conduct. The course includes critical thinking concepts and the nursing process, organization of assessment data using functional health patterns, communication and care across life spans with emphasis on beginning therapeutic communication skills. Students will demonstrate application of these concepts and technical skills/math skills in the campus lab and clinical lab segment of the course. Prerequisite(s): Level I ADN support courses, must be an LPN and accepted into the ADN program Corequisite(s): None

NSG 225—NURSING CARE OF THE CHILDBEARING FAMILY, INFANT AND CHILD **3-3-4**

The five critical elements of the WCCC nursing program - caring, competency, communication, critical thinking and commitment - serve as the framework for this course. This course introduces the student to the role of the professional nurse as provider of care when working with childbearing individuals, the newborn, infant, child and family. Emphasis is placed on identifying alteration in basic human needs and applying the nursing process to the promotion, restoration, or maintenance of health throughout the phases of the childbearing process. Common health problems of newborns and of women in each phase of childbearing are explored. Health promotion, disease prevention and care of the infant and child with common health problems are studied. Opportunities for practice of related skills are provided in campus laboratory and a variety of clinical and community settings to provide the student with opportunities to apply concepts. Prerequisite(s): All Level ADN nursing and support courses; Corequisite(s): Level II ADN nursing and support courses in assigned sequence semester.

NSG 240—PSYCHIATRIC/MENTAL HEALTH NURSING CARE **1.5-4.5-3**

Emphasizes the utilization of the nursing process in the care of patients with alterations in their psychosocial needs. Focus is on the nurse as provider of care with emphasis on the development of caring communications and teaching/learning concepts in assisting individuals in meeting their basic needs. The campus laboratory is utilized as a forum to practice developing skills. Clinical laboratory experiences in area mental health settings provide the student with opportunities to apply knowledge and caring in the therapeutic nurse/patient relationship. Prerequisite(s): Level I ADN nursing and support courses Corequisite(s): Level II nursing and support courses

NSG 255—ADVANCED MEDICAL SURGICAL CARE OF THE AGING ADULT WITH MULTIPLE CHRONIC HEALTH PROBLEMS **1.5-4.5-3**

This course emphasizes the role of the nurse in providing and managing complex care for the individual with alterations in basic human physiological needs of activity, rest, safety and security. The course focus is on the aging adult with common multiple chronic health problems. Campus laboratory provides the opportunity to develop and practice skills in providing nursing care for this vulnerable population. Clinical laboratory experiences are provided in a variety of settings including acute care, long-term care and community. Prerequisite(s): All Level I ADN nursing and support courses; Corequisite(s): Level II ADN nursing and support courses in assigned sequence semester.

NSG 260—ADVANCED MEDICAL SURGICAL NURSING CARE OF THE CHRONICALLY ILL **1.5-4.5-3**

This course emphasizes the utilization of the nursing process in the care of adults with alterations in basic human needs. This course focuses on common health problems related to immunity, hypersensitivities, blood disorders, genetics and cancer using evidence based research and practices Campus laboratory will provide the opportunity to practice psychomotor and critical thinking skills related to patient care and symptom management. The opportunity to develop and practice selected skills is provided in the acute care and home health/hospice clinical settings. Prerequisite(s): All Level I ADN Nursing and Support courses Corequisite(s): Level II ADN nursing and support courses in assigned sequence semester.

NSG 270—ADVANCED MEDICAL SURGICAL NURSING CARE OF THE ACUTELY ILL **1.5-4.5-3**

Emphasizes the utilization of the nursing process in the care of individuals with alterations in basic human needs by focusing on the acutely ill adult with complex common health problems. The campus laboratory provides the student with the opportunity to develop an understanding of basic critical care assessment and interventional techniques and to practice basic critical care skills such as rhythm analysis, cardiac monitoring, electrical interventions, hemodynamic monitoring, mechanical ventilation, airway maintenance, and blood gas analysis. Clinical laboratory experience in area acute care facilities allows the student to apply critical care concepts and skills in critical care emergency department settings. Prerequisite(s): Level I ADN nursing and support courses Corequisite(s): Level II nursing and support courses

NSG 280—MANAGER OF NURSING CARE **0.5-10.5-4**

This capstone course focuses on the role of the professional nurse as a manager of care. It emphasizes management and leadership principles and skills necessary to become competent in directing and providing care for a group of patients and their families in the acute care setting. Clinical laboratory experiences offer the student to apply critical thinking, management and leadership principles and skills while caring for multiple patients, It provides the student with the opportunity to transition from academia to the work place in the role of a novice professional nurse. Corequisite(s): All Level II ADN nursing and support courses in assigned sequence semester.

OFT–OFFICE TECHNOLOGY

OFT 100—BASIC KEYBOARDING **1-0-1**

This course instructs students on the basics of touch typing using a microcomputer. Emphasis is placed on correct posture and finger positions. The basic keyboard, including numbers and symbols, is the focus of this one-credit course.

OFT 110—DOCUMENT PROCESSING I 3-0-3
Students will create and edit office correspondence such as business letters, interoffice memorandums, business reports, and tabulated columnar material by using Microsoft Word. Emphasis is placed on keyboarding speed, accuracy, and document formatting using keyboarding software. Prerequisite(s): OFT 100 or Satisfactory Skills Test

OFT 120—DOCUMENT PROCESSING II 3-0-3
This course is a continuation of OFT 110 enabling the student to produce quality reports, correspondence, tables, publications, and legal and medical office documents through the use of handwritten and unarranged documents. Prerequisite(s): OFT 110 with a "C" grade or better

OFT 130—A&P FOR MEDICAL OFFICE 3-0-3
Designed for students enrolled in medical administration, acquaints students with basic information about all the body systems, common diseases and disorders of each body system. The course will first discuss the structure (anatomy) of the body system, how the individual parts work together when healthy (physiology), and then discuss the diseases the most often occur within the body system (pathophysiology). Prerequisite(s): BIO 107

OFT 140—OFFICE PROCEDURES 3-0-3
This course is designed to provide a foundation in the skills required by the office professional. The course explores the work environment, the use of technology in the modern office, and performing as part of the administrative team. Office communications and writing skills will be emphasized.

OFT 145—MEDICAL OFFICE PROCEDURES 3-0-3
Designed for prospective medical billers/coders who handle insurance claims for health care facilities and insurance companies. Patient's records and encounter forms are used to complete required insurance claim forms. The students will gain experience in identifying and correcting charge entry errors, as well using up-to-date medical coding.

OFT 150—MEDICAL BILLING MANAGEMENT 3-0-3
Familiarizes students with computerized account management and develops skills in using medical management software. Includes recordkeeping, controlling inventory, patient accounting, billing, insurance form preparation, appointment scheduling, payroll, word processing and database management.

OFT 155—INTRODUCTON TO ELECTRONIC HEALTH RECORD 3-0-3
This course introduces students to the functional knowledge about the Electronic Health Record (EHR): What it is, how it benefits the health care industry and workplace, what is required to implement it in the provider office, and what its basic structural components are, and how its content is determined.

OFT 165—LAW & ETHICS FOR HEALTHCARE 3-0-3
This course introduces students to complex legal, moral and ethical issues. Students use Law & Ethics for Healthcare as a guide to help resolve the many legal and ethical questions that they will be confronted with daily. Upon completion of this course, students will have a foundation of law and ethics, legal issues for health care professionals and also deal with social and interpersonal health care issues. This course cannot be applied to the Health Information Technology degree.

OFT 185—POWERPOINT 1-0-1
This course focuses on Microsoft PowerPoint as a professional tool for the development of visual presentations. Topics include creating slide shows, visual elements, formats, printing, importing and delivering effective presentations. File management, editing, and Web-based presentations are also covered.

OFT 190—WORD FOR WINDOWS 3-0-3
Focuses on the Word software, ranging from the most basic word processing tasks to more complicated procedures. Topics include document entry, editing, formatting, cutting and pasting, fonts, glossaries, tables, file merging, graphics, document templates, macros and overall document design.

OFT 199—MEDICAL INTERNSHIP 1-12-3
A coordinated period of 180 hours of supervised experience in agencies that will offer students an opportunity to perform a variety of procedures and develop technical competence in their area of specialization. Prerequisite(s): OFT 145, OFT 250 or OFT 260; GPA of 2.0 overall in major

OFT 210—OFFICE TECHNOLOGIES 3-0-3
Students will learn how to maintain basic finances by automating financial reporting functions including payroll. The course will address electronic planning, charting and managing small to mid-size projects. Instructors will include the use of the latest software to maximize productivity.

OFT 220—TRANSCRIPTION 3-0-3
This course will introduce students to office transcription techniques for the translation of recorded correspondence, reports and records to properly formatted documents. Prerequisite(s): OFT 110 with a "C" grade or better

OFT 225—PROOFREADING 3-0-3
This course provides a comprehensive study of proofreading and editing skills in the workplace. Students will learn to read for meaning while they correct errors in grammar, punctuation and sentence structure in various types of documents from the business, medical, legal and education fields. Upon completion of the course, students will have the knowledge to edit documents so that they are clear, concise and complete.

OFT 230—MEDICAL TRANSCRIPTION 3-0-3
This course will develop medical transcription skills for speed and accuracy. The translation of recorded medical correspondence, reports and records to properly formatted documents will be covered. Emphasis will be place on the development of professional editing and proofreading skills using medical documents.

OFT 235—CUSTOMER SERVICE 3-0-3
This course is designed to teach quality customer service by examining the attitudes, knowledge and skills that are needed to work effectively in any job that has contact with clients, customers or patients. Topics include improving customer loyalty, customer service, handling complaints and customer relations.

OFT 245—ICD-10-CM TRANSITION CODING 2-0-2
This course will provide an overview of ICD-10-CM as well as review and practice activities. With an integrated course of study, the student will read the book chapter, complete the exercises and then relate to online activities. After completing the course, the student will be prepared to take the self-assessment exam that will simulate the 75-question AAPC ICD-10 exam. This course cannot be applied to the Health Information Technology degree. Prerequisite(s): OFT 285; CPC certification; 3 years coding ICD-9

OFT 250—DIAGNOSTIC MEDICAL CODING 3-0-3
This course prepares students for medical coding positions by helping them to understand how to find the correct diagnosis codes using the International Classification of Diseases, 9th and 10th Revisions, Clinical Modification (ICD-9-CM/ICD-10-CM). Students will learn to convert widely accepted uniform descriptions of medical, surgical and diagnostic services rendered by health care providers with numeric codes. Prerequisite(s): BIO 107

OFT 260—PROCEDURAL MEDICAL CODING 3-0-3
This course prepares students for medical coding positions by helping them to understand how to find the correct procedural codes using CPT (Current Procedural Terminology) and HCPCS. Students will learn to convert widely accepted uniform descriptions of medical, surgical and diagnostic services rendered by health care providers with five-digit numeric codes. Prerequisite(s): BIO 107

OFT 270—HOSPITAL BILLING AND CODING 3-0-3
This course is a comprehensive look at the hospital and facility coding and billing. The student will have the opportunity to work with the entire workflow, from patient intake through the billing process for both the inpatient and outpatient facility. The student will have chapter exercise as well as extensive billing (UB-04 completion) and coding exercises (including the assignment of DRGs or APCs). This course cannot be applied to the Health Information Technology degree. Prerequisite(s): BIO 107, OFT 130, OFT 250, OFT 260

OFT 280—OFFICE MANAGEMENT 3-0-3
This capstone course is designed to prepare the student for the workplace by integrating the various office and technical skills acquired in previous office technology courses. The course will provide the student with the opportunity to perfect their skills in a simulated office environment using teamwork, oral presentation, and critical thinking skills. Prerequisite(s): OFT 110, OFT 140, and 20 hours of office technology courses

OFT 285—ADVANCED MEDICAL CODING 3-0-3
This course provides extensive, hands-on abstract medical coding. The course will review methodologies for the abstracting of physician's notes in many different specialties. The student will also have the opportunity to take a mock exam which is developed from the CPC and CCS-P national exam. Prerequisite(s): OFT 145, OFT 250, OFT 260, and 20 hours of office technology courses

OFT 299—OFFICE INTERNSHIP 1-12-3
A coordinated period of 180 hours of supervised experience in agencies that will offer students an opportunity to perform a variety of procedures and develop technical competence in their area of specialization.

PDV–PERSONAL DEVELOPMENT

PDV 155—COLLEGE SUCCESS 3-0-3
This course is intended to assist the student in assessing their current level of academic functioning and their readiness for college. The course will help the student identify areas of needed improvement and help the student begin the process of change. Concentration will be on the skills needed for success in and outside of the college classroom.

PDV 160—STRATEGIES FOR ACADEMIC SUCCESS 1-0-1
This course is designed to help students adjust to college life and college expectations. Students will learn to enhance and refine their skills in note taking, study habits, goal setting, stress management and time management. Students will develop an understanding of the WCCC catalog to include policies/procedures, course descriptions and program requirements. In addition, students will become familiar with the resources and activities available at WCCC.

PDV 170—CAREER EXPLORATION 1-0-1
This course introduces the theoretical and practical framework with which to explore careers compatible with interests, abilities, work values, academic skills and life goals. Students will examine the world of work; assess their interests, abilities and work values with this information and make realistic decisions regarding academic majors and careers.

PHB–PHLEBOTOMY

PHB 101—CLINICAL PHLEBOTOMY 3-3-4
This course introduces the students to a variety of blood collections methods, proper techniques, and standard precautions. Importance of infection prevention, patient identification, labeling of specimens, specimen collection, quality assurance, and specimen handling is stressed. Professionalism, ethics, confidentiality, protected health information, and safety are stressed. Prerequisite(s): ALH 122 Corequisite(s): PHB 105

PHB 105—SPECIMEN PROCESSING 3-3-4
This course covers the principles of specimen collection and handling. National standards are presented as well as clinical laboratory science, including quality control, laboratory math, safety, basic laboratory equipment, laboratory settings, accreditation, certification, professionalism, and ethics. Students perform such tasks as data entry and specimen accession. Students use centrifuge machines and aliquot samples as well as learning methods of sample collection. Patient confidentiality and protected health information are addressed. Prerequisite(s): ALH 122 Corequisite(s): PHB 101

PHB 110—SPECIMEN PROCESSING PRACTICUM 0-15-5
This course provides close and directed supervision for the specimen processor to apply skills. Duties may include any or all of the following: receiving specimens, identification, labeling and distributing laboratory samples to appropriate areas, data entry, calculating test results using present procedures, routine instrument checks, and other duties as assigned in addition to phlebotomy skills. Prerequisite(s): PHB 101, PHB 105 Corequisite(s): CPT 150

PHB 111—PHLEBOTOMY PRACTICUM 0-15-5
This course provides close and directed supervision for the phlebotomist to apply skills. Duties may include any or all of the following: collection of blood specimens, proper techniques, and standard precautions. Importance of infection prevention, patient identification, labeling of specimens, specimen collection, quality assurance, confidentiality, and specimen handling is stressed along with other assigned duties. Prerequisite(s): PHB 101

PHL–PHILOSOPHY

PHL 155—INTRODUCTION TO LOGIC 3-0-3
Principles of correct thinking, deductive and indictive inference; use and misuse of language in reasoning. It is recommended that students complete ENG 161 before enrolling in this course.

PHL 160—INTRODUCTION TO PHILOSOPHY 3-0-3
Introduction to Philosophy examines the major philosophical problems of philosophy as discussed by classical, medieval and modern philosophers.

PHL 161—INTRODUCTION TO ETHICS 3-0-3
This course provides an overview of the main questions in ethics: What is a good life? Does morality depend upon religion? What makes an action right or wrong? Are morals relative or absolute? Students will examine these and other questions using a variety of ethical theories. These theories will also be applied to concrete issues like animal rights and euthanasia. Satisfies the humanities area of the general education requirement.

PHL 171—WORLD PHILOSOPHY 3-0-3
This course offers students a variety of philosophical traditions from around the globe and throughout history. Traditions to be studied include Indian philosophy (Buddhism, Gandhi), Chinese philosophy (Confucius, Taoism), and Islamic philosophy, in addition to learning to appreciate such non-Western philosophy. Satisfies the Humanities area of the general education requirement.

PHY–PHYSICS

PHY 107—APPLIED PHYSICS 3-2-4
An introduction to physics emphasizing application and problem solving. Topics include data analysis, mechanics, thermodynamics, properties of matter, electricity and optics. Laboratory exercises provide reinforcement of concepts as well as experience in experimental techniques. Prerequisite(s): MTH 108 or MTH 100

PHY 110—FUNDAMENTALS OF PHYSICS 2.5-1-3
This course is designed to prepare students with no physics background for College Physics, Physics for Radiography or Physics for Sonography. Topics covered include concepts in algebra and trigonometry essential for physics, principles and units of measurement, graphing, and an overview of the physical quantities and concepts studied in introductory physics. Prerequisite(s): MTH 052 or satisfactory placement test score

PHY 125—PHYSICS FOR RADIOLOGY 3-0-3
A study of the fundamental physical laws of nature as they pertain to the production and diagnostic uses of X-Rays. Topics covered include energy, atomic structure, electricity and magnetism, electric generators and motors, X-Rays and radiography. Prerequisite(s): High school physics, PHY 107 or PHY 110

PHY 130—PHYSICS FOR SONOGRAPHY 3-0-3
This course is a study of the fundamental principles of physics as they pertain to the production of sonographic images. Topics covered include sound wave mechanics, sound generation and reception using transducers, and electrical concepts as they apply to pulse-echo instrumentation. Prerequisite(s): PHY 110 or high school physics

PHY 153—INTRODUCTION TO PHYSICS 3-0-3
A one-semester course that introduces the basic principles of physics with an emphasis on concepts and minimal use of mathematics. Topics include classical mechanics, heat, thermodynamics, wave motion and sound. Especially suited for students in elementary education. Prerequisite(s): MTH 052 or satisfactory Placement Test score.

PHY 155—COLLEGE PHYSICS I 3-2-4
An introduction to the fundamental physical laws of classical mechanics and thermodynamics. Laboratory exercises are provided to reinforce the material presented in lecture and to provide experience in preparing technical reports. Prerequisite(s): MTH 108 or MTH 100 and high school physics

PHY 156—COLLEGE PHYSICS II 3-2-4
A continuation of College Physics I including a study of wave motion, optics, electricity and magnetism, atomic and nuclear physics. Laboratory exercises are provided to reinforce the material presented in lecture and to provide experience in preparing technical reports. Prerequisite(s): PHY 155

PHY 255—ENGINEERING PHYSICS I 4-2-5
The first in a two-semester sequence of calculus-based introductory physics courses presenting the principles of classical mechanics and thermal physics. Topics include kinematics, vectors, Newton's laws, energy and momentum, rotational motion, thermodynamics and kinetic theory. Laboratory exercises emphasize proper measurement techniques, error analysis and preparation of laboratory reports. Prerequisite(s): High school physics or equivalent Corequisite(s): MTH 172

PHY 256—ENGINEERING PHYSICS II 4-2-5
The second in a two-semester sequence of calculus-based introductory physics courses covering the principles of classical electricity and magnetism and quantum physics. Topics include electrostatics, Gauss's law, capacitance, electric and magnetic fields, inductance, simple AC and DC circuits, electromagnetic waves, Maxwell's equations, optics, introduction to quantum physics, the Bohr atom, and nuclear physics. Laboratory exercises emphasize proper measurement techniques, error analysis and preparation of laboratory reports. Prerequisite(s): PHY 255

POL–POLITICAL SCIENCE

POL 155—AMERICAN NATIONAL GOVERNMENT 3-0-3
The evolution and current practice of the principles, form and operation of our national political system. Emphasis is placed on contemporary issues to illustrate the interaction of the components of the political system.

POL 156—MODERN POLITICAL SYSTEMS 3-0-3
An introduction to how different governments throughout the world operate. Democratic and authoritarian systems are examined to observe how they respond to the demands of their citizens and how decisions are made. Emphasis on Great Britain, the former USSR, China and Japan with additional examples from the "developing world."

POL 200—CONSTITUTIONAL POWERS AND CIVIL LIBERTIES 3-0-3
A study of the development of the American system of government, from the theories and factors involved in creating our Constitution, to the powers of government granted under it. The development of individual rights and liberties as guaranteed by the Constitution will be examined with reference to the interpretation of the Constitution and Bill of Rights by the U.S. Supreme Court.

POL 220—RESEARCH METHODS IN THE SOCIAL SCIENCES 3-0-3
An introduction to basic criminal justice methods of research and analysis will be presented. Examination will be conducted of various research techniques, data collection strategies, and analytical tools. Research procedures and statistical techniques are identified. Problem solving by research and identification of contemporary social sciences methods of research sources will be investigated. Prerequisite(s): CPT 150

POL 255—AMERICAN STATE AND LOCAL GOVERNMENT 3-0-3
Examines the principles and practice of government and politics in our state and communities in the light of federalism. Particular emphasis is placed on state practice and local government in Pennsylvania.

POL 256—INTERNATIONAL RELATIONS 3-0-3
Examines contemporary international controversies and problems in relation to the major forces that shape the policies of nations. Attention is given to the state system, instruments of policy, regionalism, the factors of power and international organizations

PSY–PSYCHOLOGY

PSY 160—GENERAL PSYCHOLOGY 3-0-3
General Psychology is an introduction to the study of human behavior. Psychology is presented as both a biological and a social science. Facts, principles, processes, theories and research are explored in the course of study. The course will include the application of the scientific method, analysis of human behavior and synthesis of the components and causation of human behavior.

PSY 161—HUMAN GROWTH AND DEVELOPMENT 3-0-3
Using a developmental lifespan approach to human development, this course focuses on biological, cognitive and social domains of development and their interplay. Emphasis is on the importance of maintaining an ecological perspective. Major theories of human development at all stages of the lifespan are discussed. Prerequisite(s): PSY 160

PSY 163—PHYSIOLOGIC PSYCHOLOGY 3-0-3
This course explores the relationship between neuroscience and psychology, offering a comprehensive look at the brain and its corollary behavior. Also included in the course are brain anatomy, normal functions, and examples of representative pathology in the various spheres of brain functioning. Prerequisite(s) PSY 160

PSY 165—EDUCATIONAL PSYCHOLOGY 3-0-3
This course presents cognitive, behavioral, and affective theories of development and their relevance in academic settings. Emphasis is on the importance of understanding multicultural and humanistic issues to maximize academic development. Exceptional populations and non-traditional testing techniques and alternate methods of student and teacher evaluation will be discussed, including their strengths and weaknesses in academic settings. Prerequisite(s): PSY 160

PSY 167—DEATH AND DYING 3-0-3
This reading/writing course on death and dying covers four major perspectives: changing meanings of death and dying, the experience of death, survivors of death and dilemmas of death. Death and dying cannot be separated from life and living. We should learn the facts of death to better understand and improve our lives. We must study death as scientifically trained, self-aware, compassionate human beings.

PSY 250—RESEARCH METHODS IN PSYCHOLOGY 3-0-3
This course examines the methods used to explore research issues in psychology. Emphasis is placed on observational, correlational and experimental techniques used by social scientists. Students will learn how descriptive and inferential statistical procedures are used to answer research questions. Team-oriented activities are utilized to help students understand all the phases of scientific research: hypothesis formation, design, data collection, analysis and interpretation. Prerequisite(s): PSY 160, MTH 160

PSY 260—SOCIAL PSYCHOLOGY 3-0-3
Social Psychology is the study of the individual in his society. Theories of social psychology, methods of human research and philosophical assumptions of the nature of man are stressed. Modern problems of aggression and other social factors in the development of personality, social attitudes and attitude change, interpersonal and group processes are studied and researched in the classroom. Prerequisite(s): PSY 160

PSY 265—CHILD PSYCHOLOGY 3-0-3
This course explores child development from the prenatal stage though adolescence. Topics include physical, cognitive, social and emotional development along with current research methodology. Emphasis is placed on understanding the relationship of heredity to environment, cross cultural comparison of children, and the ecological system in which development occurs. Prerequisite(s): PSY 160

PSY 267—PSYCHOLOGY OF WOMEN 3-0-3
This course examines the diverse experiences, contributions and perspectives of women and how the concept of gender shapes human lives. Students explore how gender roles develop and how gender plays an important role—including sexuality, education, occupations, physical and mental health, politics and the media. Multicultural and cross-cultural perspectives such as social, cultural and economic variables are integrated throughout the course.

PSY 268—ADOLESCENT PSYCHOLOGY 3-0-3
This course investigates the process of human development during adolescence by examining identity formation within the context of biological, cognitive and psychosocial changes during this period. Family, peer, educational and social influences are emphasized in exploring normal as well as atypical development. Prerequisite(s): PSY 160

PSY 269—HUMAN MEMORY AND COGNITION 3-0-3
This course provides an overview of research on human memory. Topics covered include the major theories of memory and the critical data that have been gathered to develop, test and challenge these theories. The research reviewed will cover both the classic work and the current work done by memory researchers on a number of core issues. The information covered in this course will focus on both experimental research and application to everyday use of memory.

PSY 270—ABNORMAL PSYCHOLOGY 3-0-3
Abnormal Psychology is the study of mental disorders that are listed in the current diagnostic system. A historical perspective, assessment and treatment are presented. The individual mental disorders are explained from a descriptive, causative and treatment perspective. Diagnostic statistical criteria are presented with each of the mental disorders. Prerequisite(s): PSY 160

RAD–RADIOLOGY TECHNOLOGY

RAD 111—INTRODUCTION TO RADIOLOGY TECHNOLOGY, PATIENT CARE, PHARMACOLOGY, AND POSITIONING I 3-2-4
This course will provide the student with an introduction to radiologic imaging. Topics will include the role of the radiographer in the health-care setting, the history of radiography and basic radiation. Appropriate radiographer conduct and communication skills in the clinic setting will be discussed along with patient care, safety and emergency procedures. In the lab, students will learn positioning terminology, equipment manipulation, the proper positioning of the appendicular skeleton, lungs and abdomen. In addition, students will learn to evaluate images for proper exposure factors and demonstration of anatomy. Prerequisite(s): BIO 171 Corequisite(s): ALH 122, BIO 172, RAD 121

RAD 121—PRINCIPLES OF RADIOGRAPHIC IMAGE CAPTURE AND DISPLAY 3-0-3
This course will provide students with an introduction to the production and characteristics of radiation, image capture, image processing, manipulation of exposure variables, and the effect of manipulating exposures variables on image quality. Film and related accessories are discussed. Student experimentation and demonstrations are included in the application of theory. Prerequisite(s): BIO 171 Corequisite(s): ALH 122, BIO 172, RAD 111

RAD 131—DIGITAL IMAGE ACQUISITION AND DISPLAY 3-0-3
Content imparts an understanding of the components, principles and operation of digital imaging systems found in diagnostic radiology. Factors that impact image acquisition, display archiving and retrieval are discussed. Principles of digital system quality assurance and maintenance are presented. Prerequisite(s): RAD 111, RAD 121 Corequisite(s): MTH 157, PHY 125, RAD 141, RAD 146

RAD 141—PHARMACOLOGY, ETHICS AND LAW IN RADIOLOGY AND POSITIONING II 3-2-4
This course will provide students with a comprehensive examination of pharmacology, ethical and legal issues for radiographers. In the lab, students will learn positioning terminology, equipment manipulation, the proper positioning of the axial skeleton. In addition, students will learn to evaluate images for proper exposure factors and demonstration of anatomy. Prerequisite(s): RAD 111, RAD 121 Corequisite(s): MTH 157, PHY 125, RAD 131, RAD 146

RAD 146—CLINICAL EDUCATION I 0-16-4
This clinical course provides students with the opportunity to observe, practice, and perform radiologic procedures learned in Introduction to Radiologic Procedures. Students will complete competency examinations where image quality and patient care are evaluated. Prerequisite(s): RAD 111, RAD 121 Corequisite(s): MTH 157, PHY 125, RAD 131, RAD 141

RAD 211—RADIOLOGIC IMAGING EQUIPMENT QUALITY CONTROL, IMAGE ANALYSIS, RADIATION PROTECTION, BIOLOGY AND POSITIONING III 3-2-4
This four-part course begins with a short review of the production and characteristics of x-rays. The course progresses to an overview of the design and operation of imaging equipment. In addition, radiographic image analysis and quality control procedures are reviewed. The course concludes with introducing students to the biological effects of exposure to ionizing radiation protection, ALARA, radiation monitoring devices, and methods to reduce unnecessary exposure to the radiographer and patient are discussed. In the lab, students will learn positioning terminology, equipment manipulation, the proper positioning of the non-skeletal areas, organ systems, studies that use contrast media, myelography, venography and mammography. In addition, students will learn to evaluate images for proper exposure factors and demonstration of anatomy. Prerequisite(s): RAD 215 Corequisite(s): RAD 216

RAD 215—CLINICAL EDUCATION II 0-12-3
This clinical course is a continuation of Clinical Education I, and will provide students the opportunity to observe, practice and perform radiologic procedures. Students will target exams from Radiographic Procedures II while maintaining proficiency in previously learned examinations. Students will complete competency examinations where image quality and patient care are evaluated. Prerequisite(s): RAD 146

RAD 216—CLINICAL EDUCATION IV 0-16-4
This clinical course is a continuation of the Clinical Education series, and will provide students the opportunity to observe, practice and perform radiologic procedures. Students will target exams from Radiographic Positioning III while maintaining proficiency in previously learned examinations. Students will complete competency examinations where image quality and patient care are evaluated. Prerequisite(s): RAD 255; Corequisite(s): RAD 211

RAD 221—RADIOGRAPHIC PATHOLOGY, COMPUTED TOMOGRAPHY, AND CAREER SEARCH PREPARATION 3-0-3
This course will provide students with a comprehensive examination of the etiology of disease and the pathophysiologic disorders of disease, that compromise healthy systems. Emphasis will be placed upon the radiographic appearance processes. In addition, the topic of computed tomography is introduced. Prerequisite(s): RAD 211, RAD 216; Corequisite(s): RAD 226, RAD 231

RAD 226—CLINICAL EDUCATION V 0-20-5
This clinical course is a continuation of the Clinical Education series, and will provide students the opportunity to observe, practice and perform radiologic procedures. Students will continue to practice and maintain proficiency in previously learned examinations. Students will complete competency examinations where image quality and patient care are evaluated. Prerequisite(s): RAD 211, RAD 216; Corequisite(s): RAD 221, RAD 231

RAD 231—RADIOLOGY TECHNOLOGY CAPSTONE 3-0-3
This course is a review of all material from Radiology Technology with emphasis on the ARRT examination preparation and career planning. Prerequisite(s): RAD 211, RAD 216; Corequisite(s): RAD 221, RAD 226

RAD 255—CLINICAL EDUCATION III 0-12-3
This course is a continuation of the Clinical Education series, and will provide students the opportunity to observe, practice, and perform radiologic procedures. Students will continue to practice and maintain proficiency in previously learned examinations. Students will be permitted to rotate into specialty imaging areas and students will complete their competency examinations where image quality and patient care are evaluated. Prerequisite(s): RAD 215

RBT–ROBOTICS

RBT 110—AGILE ROBOTICS I 3-2-4
In this course the student is provided with a basic introduction to the multidisciplinary field of robotics technology including concepts from computer, electrical, and mechanical disciplines with a focus on engineering processes. There is a particular emphasis on first-generation agile robotics characterized by remotely piloted mobile robots. The laboratory component presents activities based on lecture concepts and team-oriented, hands-on projects to solve basic robotic problems.

RBT 120—AGILE ROBOTICS II 3-2-4
Agile Robotics is continued by exploring the details of second-generation agile robotics technology as characterized by mobile robots with autonomous behaviors. Software tools, additional details robotic systems, application of robot control programming, motion planning, application domains and additional applied technician skills are emphasized. Team-oriented activities, hands-on projects, solving autonomous robotics problems and sensory feedback are utilized in the laboratory component to provide applications of lecture concepts. Prerequisite(s): RBT 110

RBT 210—ROBOTIC TEAMING 3-2-4
Robotic communication is an important addition to autonomous robotic platforms. Teaming capability and the varied aspects of teaming behavior is often required in both industrial and personal robotic systems in order to enable robots to perform collaborative tasks using a team approach. Students will learn the basics of a computer programming language and the basics of an embedded robotics platform in order to apply inter-robot communications techniques to enable robotic teaming. Prerequisite(s): RBT 120

RBT 280—ROBOTICS SYSTEMS PROJECT 2-2-3
This Agile Robotics capstone course is project-based. Students will complete an instructor approved project, often working in a team. The semester long project must be based on mobile robotic technology and the project will include a literature research, project specification, project design, implementation, documentation and presentation aligned with established engineering technology methodologies. Project planning and management as well as team work strategies must be demonstrated. Software and hardware convergence techniques will be utilized. Prerequisite(s): RBT 210

REL–RELIGION

REL 171—WORLD RELIGIONS SURVEY 3-0-3
This course introduces students to the concept of the structure of religion and discusses primal and ancient religions. It surveys the major religions of India, the Far East, and the Middle East. It emphasizes religions as living, changing systems of thought and practice which affect each other and influence events worldwide.

REL 181—RELIGION IN AMERICA 3-0-3
Emphasizing the United States' unique history and diverse population, this course focuses on native and world religions as practiced in North America. The course discusses what religion is, how it works, and why it is important to people. The ways in which religion shapes American life and affects the politics, culture and social mores of this country will be investigated.

RLS–REAL ESTATE

RLS 101—FUNDAMENTALS OF REAL ESTATE 2-0-2
A basic course designed to comply with the standardized courses required to satisfy the Pennsylvania State Real Estate Commission's salesperson educational requirement. Topics include basic concepts in the field of real estate, property descriptions, property development, license law, contracts, deeds, titles, conveyancing and recording. Extensive review and practice listing is included.

RLS 102—REAL ESTATE PRACTICES 2-0-2
A continuation of the real estate fundamentals course designed to complete the specific requirements of the standardized educational curriculum for licensing real estate salespersons. Topics covered are brokerage, listing, selling, single family financing, settlement and real estate math.

RLS 205—PROPERTY MANAGEMENT 3-0-3
Considers property management and maintenance. Property management topics include agency versus owner management, tenant and labor relations, recordkeeping and government regulations and how they affect management practices. Property maintenance topics include selection and supervision of personnel, general servicing and maintenance of buildings, maintenance and replacement of equipment, handling contracts, contractors and suppliers.

RLS 209—REAL ESTATE FINANCE 3-0-3
Involves the principles of real estate valuation including tools/techniques and methods of determining value. The course also covers mortgage financing, including mortgage sources, primary and secondary mortgages brokerage, mortgage applications and lenders' requirements.

RLS 210—LAW OF REAL ESTATE 3-0-3
This course is an introduction to the law of real property. The course examines the historical concept of property ownership along with transference and rights of ownership. The course will review an in depth examination of the residential real estate transaction and necessary documentation from start to finish. Items discussed include an examination of surveys and descriptions, financing, zoning and other restrictions on land use, the title examination and closings.

SOC–SOCIOLOGY

SOC 155—PRINCIPLES OF SOCIOLOGY 3-0-3
This course is designed to be a student's first college-level sociology class. The topics to be covered include: the history of sociology, the methods, fields, and vocabulary of sociology; the social interaction of persons and groups; the process of socialization and social structures; social institutions such as family, religion and education. Through this course students should learn "what is sociology?" as well as how sociology fits with other academic disciplines and how sociology can be used outside of the classroom.

SOC 161—MARRIAGE AND FAMILY 3-0-3
A functional course in the psychological and sociological factors involved in courtship, marriage and the family cycle; this course will provide a comparative study of the family structure across time and across cultures. Emphasis will be placed on the changing nature and role of family functions as well as changing life-styles.

SOC 162—CONTEMPORARY SOCIAL PROBLEMS 3-0-3
This course will permit student to apply sociological principles and methods to selected major problems of contemporary American society. In addition to studying these problems, this course will also present a selection of proposed "solutions" to these problems and encourage students to understand, analyze, and debate the merits of the proposed solutions. Prerequisite(s): SOC 155

SOC 170—RACIAL AND ETHNIC MINORITIES 3-0-3
This is an introductory course for the study of racial and ethnic minorities in the USA. This course will provide an overview of the history, immigration patterns and characteristics of the major ethnic minority groups in the USA. The course will also explore the origins and history of prejudice and discrimination experienced by members of these groups. Through readings and discussion, the course will focus on both current and past issues that are important to the understanding of the multi-cultural society in which we all must live and work. Prerequisite(s): SOC 155

SOC 255—CULTURAL ANTHROPOLOGY 3-0-3
Examines the concept of culture and its significance in the study of the behavior of man. Places special emphasis on social organization.

SPA–SPANISH

SPA 155—BEGINNING SPANISH I 4-0-4
A beginning language course with emphasis on elementary speaking, reading, writing and comprehension.

SPA 156—BEGINNING SPANISH II 4-0-4
Continuation of Spanish 155. Emphasis on the development of increased oral ability, reading and writing. Prerequisite(s): SPA 155

SPA 255—INTERMEDIATE SPANISH I 3-0-3
Continuation of Beginning Spanish II. Although the approach will be a communicative one, writing and reading skills will be developed along with the speaking and listening skills. The course will be organized according to the guidelines for proficiency oriented language learning. Prerequisite(s): SPA 156

SPA 256—INTERMEDIATE SPANISH II 3-0-3
Continuation of Intermediate Spanish I. Students will continue to improve communicative skills with the four areas of speaking, listening, reading and writing being stressed. A proficiency oriented approach and materials will be used. Prerequisite(s): SPA 255

SPC–SPEECH COMMUNICATION

SPC 155—EFFECTIVE SPEECH 3-0-3
Helps students to acquire skills in presenting clear, concise, well-organized, interesting ideas to an audience and to acquire skill in listening actively to the ideas of others.

SPC 156—INTERPERSONAL COMMUNICATION 3-0-3
Focuses on the theoretical aspects of communication and on the development of skills necessary for effective interpersonal interactions.

SPC 157—FUNDAMENTALS OF SMALL GROUP COMMUNICATION 3-0-3
Designed to study the group process and to teach methods of group discussion as a problem solving technique. It emphasizes dynamics of "brainstorming" and management of differences in group activity.

SPC 158—ORAL INTERPRETATION 3-0-3
Helps students to acquire skills in voice and gesture that will enable them to communicate literature to an audience. Also helps students prepare programs for individual events in forensics competition.

SPC 255—PERSUASION AND PROPAGANDA 3-0-3
Provides students with the opportunity to understand what persuasion is and how it works, both in theory and in practice. Areas of focus include the acquisition of belief pattern and the use of persuasive appeals and logical fallacies in the rhetoric of advertising and politics. Various definitions of propaganda and its ethical bases will also be considered.

THR–THEATER

THR 159—INTRODUCTION TO THEATRE 3-0-3
Provides an introduction to theatre as an art form. Emphasis is placed on historical development, social context and formal analysis of drama as literature as well as popular entertainment. Students gain an understanding of and an appreciation for theatre as a logical development of the human need to dramatize perspective on the immediate world.

TRV–HOTEL/RESORT MANAGEMENT

TRV 171—TRAVEL AND TOURISM PRINCIPLES 3-0-3
Investigates the economic and social impact of tourism and travel. The role that management plays in catering to tourists and in the development and operations of guided tours is studied. Transportation to off-campus locations is the responsibility of the student.

TRV 273—TRAVEL DESTINATIONS 3-0-3
Provides students with intensive familiarization of the major tourist areas frequented by leisure and business travelers. Emphasis is on tourist attractions, points of interest, airport locations and transportation. Transportation to off-campus locations is the responsibility of the student.

TRV 274—TOUR PLANNING AND SALES 3-0-3
Focuses on tour development, group travel and corporate travel. Creative itineraries and fundamentals of tour escorting will be covered. Students will explore options for corporate functions and scheduling. Group touring will be investigated for both the leisure and corporate traveler. Transportation to off-campus locations is the responsibility of the student.

WEB–WEB TECHNOLOGY

WEB 102—ACROBAT ESSENTIALS 1-0-1
An introduction to converting documents to PDF format, setting navigation for PDFs, setting security options, creating bookmarks, and adding hyperlinks and interactivity to documents using the standard for cross-platform file sharing without sacrificing the original design. Macintosh/Windows and Word skills recommended.

WEB 110—WEB DESIGN 3-0-3
An exploration of Web design that focuses on the basic design concepts used in creating Web-based publications-layout, typography and color usage. Rapid prototyping and the issues of accessibility, usability and versatility are explored.

WEB 140—DREAMWEAVER – BASIC 3-0-3
This course introduces students to Adobe Dreamweaver's powerful, visual environment to construct Web pages and sites. Students will explore the live design environment in the design and creation of basic Web pages and sites.

WEB 162—FIREWORKS 3-0-3
This course introduces Web graphic design and creation using Adobe Fireworks. Students will address the special challenges of creating and editing bitmap and vector images, animating graphics, adding interactivity and optimizing images to export with HTML and JavaScript code for Adobe Dreamweaver and various HTML editors.

WEB 188—SOCIAL MEDIA 3-0-3
This course examines the current trends in social media and how these popular internet-based social networking sites can be a powerful marketing tool for businesses and organizations. Through a combination of selected readings and hands-on projects, students will learn which prominent social media tools are best suited for various businesses and organizations in order to maintain a current online profile. Upon completion of the course, students will have the knowledge to develop a basic social media marketing plan for a business or organization.

WEB 190—DREAMWEAVER – ADVANCED 3-0-3
Using Cascading Style Sheets (CSS) simplifies site design, layout and styling of Web page content for screen, handheld devices or print, and maintenance. Students will learn how to create collaborative editing Web sites by using a Web content management application. Prerequisite(s): WEB 110 and WEB 140

WEB 199—WEB INTERNSHIP 1-12-3
Students gain exposure and insight into selection of occupations within the fields of Web design/development through supervised and evaluated on-the-job experience. Students select locations for their internships from college approved sites which primarily encompass southwestern Pennsylvania.

WEB 235—INTERACTIVE DESIGN 3-0-3
This course explores the structure and aesthetics of interactive projects, with attention to the end-user needs and visual design. Students focus on project development from initial concept and research through design, prototype, testing and production Prerequisite(s): WEB 110 and WEB 140

WEB 277—ELECTRONIC COMMERCE TECHNOLOGY 3-0-3
This course focuses on the impact of emerging trends and technologies in electronic commerce. Specific topics are selected by faculty to reflect the current state-of-the-art in the field.

WEB 295—INFORMATION ARCHITECTURE 3-0-3
This course focuses on the integration of the interdisciplinary process that makes large amounts of information easily accessible to end-users. Students, using a team-based approach plan, design and create an innovative multi-user experience for the Web that addresses the issues of accessibility, usability and versatility. This is a capstone course; satisfactory demonstration of outcomes for competency profiles for the Web Site Design/Production options are required. Prerequisite(s): Completion of 27 credits in major courses

WEL–WELDING

WEL 125—WELDING I 2-4-4
Theory in oxyfuel principles, basic arc welding and power source operation. Demonstrations by instructor and practice by students in basic oxyacetylene cutting and arc welding. Theory, safe and correct methods of assembly and operation of welding equipment. Use of power tools, Practice in SMAW in flat, horizontal and vertical positions. Introduction to GMAW and GTAW. Emphasis on lab techniques and safety.

WEL 135—WELDING II 2-4-4
Theory in advanced SMAW, production of metals and application of metallurgical principles. Demonstrations and practice of vertical, overhead and advanced SMAW techniques; basic GMAW and GTAW techniques. Prerequisite(s): WEL 125

WEL 199—WELDING ENGINEERING TECHNOLOGY INTERNSHIP 1-12-3
Students will obtain experience in the welding industry through a combination of occupational instruction and on-the-job training. This course integrates classroom occupational study with a planned supervised practical work experience. Prerequisite(s): Permission of instructor

WEL 207—ADVANCED WELDING I 2-4-4
Theory, application and skill development of advanced GMAW, FCAW, PAC and AAC processes. Skill development for the ARC welding processes will cover all positions, joints and root/face bend tests of all test welds. All skill tests will follow either ASME or AWS welding code criteria. Prerequisite(s): WEL 135

WEL 208—ADVANCED WELDING II 2-4-4
Theory and practical use of advanced GTAW, PAC, SAW, CAC and open root welding. Root-face and side bend tests will be passed by the student in the vertical and overhead positions. ASME, AWS and API code procedures are followed. Prerequisite(s): WEL 207

WEL 209—INDUSTRIAL MAINTENANCE 2-2-3
Troubleshooting, maintenance and operation of welding and plant equipment. Use of troubleshooting and repair equipment, theory of equipment and maintenance principles.

WEL 210—MAINTENANCE AND TROUBLESHOOTING FOR INDUSTRY II 2-4-4
This course will expand upon the knowledge and skills obtained in WEL 209, Introduction to Maintenance and Troubleshooting. Students will advance their knowledge of electromechanical concepts, hydraulics,pneumatics and motors. Installation and troubleshooting skills learned in WEL 209 will be applied to more advanced industrial concepts, developing an advanced technical and mechanical skill set. Students should be prepared to perform mathematical calculations and engage in problem solving activities. Knowledge and skills gained in this course are utilized in industries including, but no limited to: Agriculture, Communications, Gas and Oil, Government, Health Care, Logistics, Maintenance, Manufacturing, Mining, Retail, Service and Utilities. Prerequisite(s): WEL 209; Corequisite(s): ELC 106

WEL 220—INSPECTION OF CODE WELDING SPECIFICATIONS 3-0-3
Instruction, practice and reading, writing and interpreting ASME, AWS and API application of specifications and codes for structural steel, pressure vessel and pipe welding.

WEL 221—METAL FABRICATION 2-4-4
Provides students with an understanding of metal fabrication. Emphasis is placed working from blueprints, proper joint selection, design, stresses in welds, material selection and estimating welding costs. Students construct projects using common metal fabrication equipment. Laboratory work includes use of welding power supplies, brake press, ironworker and metal rollers. Prerequisite(s): DFT 110, WEL 125

WEL 222—FUNDAMENTALS OF ALUMINUM 2-4-3
Theory in aluminum welding, classification, preparation, metallurgy, quality and applications. Practice of GTAW and GMAW aluminum in all positions. Students must pass visual and destructive tests. Prerequisite(s): WEL 135

WEL 224—MATERIALS EVALUATION 2-2-3
Includes destructive and nondestructive testing. Covers visual, dye penetrant, x-ray, ultrasonic, magnetic particle and destructive techniques. Lab practice is included. Prerequisite(s): MET 105, MTH 108

PERSONNEL DIRECTORY

BOARD OF TRUSTEES

LARRY J. LARESE
Chairman
Export, PA
Retired

KEVIN F. PAHACH
Vice Chairman
Bolivar, PA
Treasurer/Business Representative,
International Union of Operating Engineers

EUGENE J. DICKERT, JR.
Secretary
Latrobe, PA
Retired/Elliott Company

CHAD AMOND
Treasurer
Greensburg, PA
President/Westmoreland Chamber of Commerce

JAMES T. BOGGS
Greensburg, PA
Attorney, Miller Law Offices, PLLC

GENE P. CIAFRE
Export, PA
President/General Products & Supply, Inc.

BRETT DIAS
Latrobe, PA
President/Steel City Automotive LP

BRIDGET JOHNSTON
Latrobe, PA

CHARLES J. KRAFT
Belle Vernon, PA
Retired Associate Professor

DIRK MATSON
Greensburg, PA
Director/Human Services Westmoreland County

KALA MOLOGNE
Smithton, PA

LEIA SHILOBOD
Greensburg, PA
President/Intech Solutions, Inc.

JESS STAIRS
Acme, PA

R. DOUGLAS WEIMER
Art Educator
Greensburg, PA

JOHN D. WRIGHT
Greensburg, PA
Retired

EMERITUS BOARD OF TRUSTEES

WILLIAM ABRAHAM (d.)

DR. HUGH M. DEMPSEY
Washington, DC

JAMES W. GEISER
Johnstown, PA
Retired

WILLIAM D. HEAVNER, JR.
Bonita Springs, FL
Retired

EDWIN R. HOGAN
West Newton, PA
Retired President/Jones Brewing Company

R. LEE JONES
Monessen, PA
Retired/People's Natural Gas Company

MORRISON F. LEWIS, JR.
Jeannette, PA
Attorney at Law

GENE E. MCDONALD
Latrobe, PA
Attorney/McDonald, Snyder & Lightcap

LEONARD L. PALETTA
New Kensington, PA
Retired/Executive Director
Westmoreland County Housing Authority

ADMINISTRATORS

TUESDAY L. STANLEY — 724-925-4001
President
Ed.D., University of Pennsylvania; M.B.A., Lehigh University; B.A., Purdue University

KRISTY A. BISHOP — 724-925-4212
Vice President/Academic Affairs & Student Services
B.A., M.S., Ph.D., University of Kansas

PATRICK E. GERITY — 724-925-4219
Vice President/Continuing Education, Workforce & Community Development
B.S., M.S., Ph.D., Pennsylvania State University

DONNA D. CARUTHERS — 724-925-6952
Associate Vice President/Academic Affairs
B.S.N., M.S.N., Ph.D. University of Pittsburgh

JEFFREY E. AMOS — 724-925-4017
Director/Facilities Operations and Construction
B.A., University of Pittsburgh; M.B.A., Robert Morris University

ANDREW T. BARNETTE — 724-925-4047
Dean/Public Services/Humanities/Social Sciences/ Mathematics
B.A., Grove City College; M.A., Kent State; Ph.D., The University of Mississippi

ANNETTE H. BOYER — 724-925-4138
Director/Distance Learning & Learning Resources
B.S., California University of Pennsylvania; M.Ed., University of Pittsburgh

NICK DEMATTEO — 724-925-4090
Director/Workforce Development & Contract Training
B.S., Point Park University; M.S., George Washington University

SYLVIA A. DETAR — 724-925-4190
Director/Continuing Education
B.A., M.B.A., Seton Hill University

PERSONNEL DIRECTORY

LAUREN M. FARRELL — 724-925-4079
Director/Human Resources & Assistant to the President
B.A., Washington & Jefferson College; M.A., Indiana University of Pennsylvania

JOHN FIBBI — 724-925-8654
Director/Western Hub ShaleNET US Grant
B.S., University of Pittsburgh; M.Ed., Pennsylvania State University

JANICE T. GRABOWSKI — 724-925-4123
Director/Admissions & Registrar
A.A.S., Westmoreland County Community College

DIANE D. HIGHTOWER — 724-925-4050
Dean/Students
B.A., The University of Pennsylvania; M.Ed., Pennsylvania State University; M.P.R., University of Pittsburgh

RICHARD G. HOLLER — 724-925-4129
Director/Student Life and Athletics
A.A., Allegany Junior College; B.S., Elon College

RUTH E. IRWIN — 724-925-5987
Director/Nursing
R.N., The Washington Hospital School of Nursing; B.S.N., Slippery Rock University; M.S.N., Indiana University of Pennsylvania; Ph.D., Duquesne University

BYRON C. KOHUT — 724-696-4593
Director/Energy Programs-Advanced Technology Center
B.S., Florida State Univeristy; M.A., Duquesne University; Ed.D, University of Pittsburgh

FRANCIS J. KORDALSKI, SR. — 724-925-6713
Dean/Workforce Development
A.A.S., Penn Technical Institute; B.S., Point Park University; M.A., Duquesne University

RONALD A. KRIVDA — 724-925-4278
Director/College Services
B.S., M.S., California University of Pennsylvania

LAURA L. LOCKE — 724-925-6982
Diagnostic Medical Sonography Program Director
M.S., Carlow College; B.A., LaRoche College; A.S., Community College of Allegheny County; A.S., Robert Morris University

JAMES J. LUTZ — 724-925-4185
Director/Purchasing
B.A., University of Pittsburgh

WILLIAM P. MAGDA — 724-925-4027
Director/Community Development
B.A., Saint Vincent College

KATHLEEN A. MALLOY — 724-925-4028
Dean/Health Professions/Natural Sciences
R.N., McKeesport Hospital School of Nursing; B.S.N., M.N.Ed., Ph.D., University of Pittsburgh

DAVID J. McBRIDE — 724-925-5977
Radiology Technology Program Director
B.A., LaRoche College; M.A., University of Phoenix

EDWIN C. NELSON — 724-925-4003
Dean/Computer Technology/Business
B.S., United States Naval Academy; M.B.A., Syracuse University

SHEILA M. NELSON-HENSLEY — 724-925-4215
Director/ Financial Aid
B.A., Wheeling Jesuit University; M.A., Indiana University of Pennsylvania

ANNA MARIE PALATELLA — 724-925-4091
Director/Public Relations
B.A., Indiana University of Pennsylvania

ANNA M. PEAGLER — 724-925-5981
Director/Event Services
B.A., University of Pittsburgh

CRAIG F. SANTICOLA — 724-925-4177
Dean/Distance Education, Education Centers & High School Partnerships
B.A., M.B.A., Southeastern Louisiana University; Ph.D., Robert Morris University

TIMOTHY W. STAHL — 724-925-4073
Controller
B.S., Saint Vincent College

JOSEPH D. SWICK — 724-925-4247
Director/Educational Services for ShaleNET US
A.S., Community College of Allegheny County; B.S., University of Pittsburgh

DEBI J. WILLIAMS — 724-925-4200
Director/Grants
B.A., Temple University

DEBRA D. WOODS — 724-925-4083
Executive Director/Education Foundation
B.A., Seton Hill University; M.S., Geneva College

ADMINISTRATIVE STAFF

BETH A. ALESI — 724-925-4201
Assistant Controller/Accounts Receivable & General Accounting
A.A.S., Westmoreland County Community College

HOPE BALANTI — 724-925-4104
High School CTC Career Coach
M.A., Seton Hill University

VINCENT E. BOOKER — 724-925-8471
Workforce Development Sales Coordinator
B.S., Indiana University of Pennsylvania

CASEY S. CAVANAUGH — 724-925-6981
Keys Student Facilitator
B.A., Seton Hill University

VALERIE L. COMPTON — 724-925-5975
Assistant Controller/Accounts Receivable & Registration Billing
B.S., Saint Joseph's University

LAURIE L. CONNORS — 724-925-4252
Coordinator/Human Resources
B.A., Carlow College

PATRICK R. COULSON — 724-335-8110
Coordinator/New Kensington Education Center
B.S., M.B.A., Indiana University of Pennsylvania

MARY JANE DRAGOVICH — 724-925-4000, EXT. 3174
Assistant Bookstore Manager
A.A.S., Westmoreland County Community College

VICKIE A. FRY — 724-925-5801
Coordinator/Institutional Research
A.A.S., Westmoreland County Community College; B.S., Geneva College

KAREN D. GANDY — 724-925-4002
Coordinator for the Office of the President
A.A.S., Westmoreland County Community College

ELIZABETH N. GWYNN — 724-925-4193
Programmer/Analyst
A.A.S., Westmoreland County Community College

AMY C. HALULA — 724-925-4213
Coordinator/Retired & Senior Volunteer Program
B.A., Thiel College; M.A., Duquesne University

PETER A. HANCHAR — 724-925-6955
Coordinator/Facilities
A.A.S., Pennsylvania State University; B.A., Belford University

PERSONNEL DIRECTORY

JOHN W. HARVEY — 724-327-8090
Coordinator/Bushy Run Education Center
B.S., M.B.A., California University of Pennsylvania

DAVID R. HAUGER — 724-872-2447
Coordinator/Public Safety Training Center
A.A.S., Westmoreland County Community College; B.S., University of Pittsburgh

DIANE HENDRICK – 724-925-4156
Coordinator/Campus Children's Center
A.A.S., Westmoreland County Community College; B.S., University of Pittsburgh; M.Ed, Carlow University

KIMBERLY A. HIMLER — 724-925-4116
Coordinator/Purchasing
A.A.S., Westmoreland County Community College

PAMELA J. HOLLICK — 724-925-4089
Coordinator/Public Relations
B.A., Indiana University of Pennsylvania

LORI L. JACOBS — 724-437-3512
Coordinator/Fayette County Education Center
B.S., California University of Pennsylvania

SCOTT R. JENDRAS — 724-925-4199
Network Coordinator
A.A.S., Westmoreland County Community College; B.S., University of Pittsburgh

SHANNON R. KURTA — 724-925-4000, ext. 3158
Assistant Controller/Foundation Accounting & Special Project Accounting
B.S., Shippensburg University

BECKY L. LAUFFER — 724-925-4082
Coordinator/Emergency Medical Services & Health Care Continuing Education Programs
B.S.N., Carlow College

NANCY L. LIGUS — 724-925-5864
Workforce Development Sales Coordinator
B.A., Seton Hill University; A.S., Community College of Allegheny County

SHAWNA B. LITTLE — 724-925-4064
Coordinator/Admissions-Special Programs
B.A,, Allegheny College; M.S., California University of Pennsylvania

PAMELA H. MOWRER – 724-925-4178
Coordinator/WCCC Education Foundation
M.S., B.A., Pennsylvania State University

FRANK R. NEWILL — 724-925-4298
Coordinator/Law Enforcement Programs
A.A.S., Westmoreland County Community College; B.S., Robert Morris University

SANDRA J. NEWMEYER — 724-925-4065
Financial Aid Coordinator/Technology
A.A.S., Westmoreland County Community College

CHERYL A. NOEL — 724-925-4058
Coordinator/Career Development and Placement Center
B.S., California University of Pennsylvania; M.A., Indiana University of Pennsylvania

TERI PESCKO — 724-925-4074
Assistant Controller/Payroll & Accounts Payable
A.A.S., Westmoreland County Community College

REBECCA J. PRICE — 724-925-4186
Coordinator/College Learning Center-Developmental Education
B.S., Slippery Rock University

PAULA J. RENDINE – 724-925-4086
CTC Career Coach/Project Coordinator
B.S., California University of Pennsylvania

CORREY L. ROBERTSON — 724-925-4055
Coordinator/Student Activities
B.A., American University; M.A., Slippery Rock University

JUDITH A. ROGERS — 724-925-4015
Coordinator/Culinary Arts & Hospitality Programs
A.A.S., Westmoreland County Community College

GRACE E. SANDY — 724-925-4144
Coordinator/Instructional Technology & Distance Learning
A.A.S., Westmoreland County Community College; B.S., Geneva College; M.S., Wilkes University

CHAD R. SEIBEL — 724-925-5937
Bookstore Manager
A.A., Westmoreland County Community College

RICHARD W. SMITH — 724-925-4230
Coordinator/Desktop/Media Services
A.A.S., Westmoreland County Community College

LEROY G. STANTS, JR. — 724-925-4248
Assistant to Coordinator/Facilities (Evening)
A.A.S., Penn Technical Institute;
A.A.S., Westmoreland County Community College

MICHAEL R. STAS — 724-925-4124
Coordinator/Systems Administrator
B.S., Kings College

JOHN E. STERDIS – 724-925-6714
Coordinator/Grounds
A.A.S., Westmoreland County Community College

DENISE L. TEMPLE — 724-925-4268
Perkins Coordinator
M.S., West Virginia University; B.S., Lock Haven University of Pennsylvania

DEBORAH L. TERLIZZI — 724-925-4062
Coordinator/Admissions-Allied Health Programs
B.A., West Liberty State College

GRACE THACHIK — 724-925-5939
Coordinator/ICCCC of WCCC
B.A., M.A., Indiana University of Pennsylvania

CHARLES E. THOMPSON — 724-925-4094
Coordinator/Facilities (Evening)
A.A.S., Westmoreland County Community College

BRIAN UHRIN — 724-925-4043
Database Coordinator
A.A.S., Westmoreland County Community College

JANET E. UNGER — 724-379-4119
Coordinator/Mon Valley Education Center
B.S., Indiana University of Pennsylvania

ANDREW T. VARGO — 724-925-4262
Data Analyst
A.A.S., Westmoreland County Community College; B.S., Seton Hill University

ADMINISTRATIVE SUPPORT STAFF

SUZANNE C. BARRON — 724-925-4216
Administrative Assistant/Secretary
A.A.S., Westmoreland County Community College; B.S., Geneva College

TIFFANY E. BREWER — 724-925-4080
Administrative Assistant/Secretary
A.A.S., Westmoreland County Community College

MARGARET M. DePALMA — 724-925-4092
Administrative Assistant/Secretary
B.S., M.L.I.S., University of Pittsburgh

DONNA M. HONSE — 724-925-4143
Administrative Clerk
A.A.S., Westmoreland County Community College

JOANNA LEECH — 724-925-4284
Administrative Secretary

DINA M. OPSTNICK — 724-925-5974
Administrative Assistant/Secretary
A.A.S., Westmoreland County Community College

LOUISE E. PRITTS — 724-925-4217
Administrative Secretary

JUDITH A. WELLS — 724-925-4218
Administrative Assistant/Secretary

FACULTY

GARY A. ALTEMARA — 724-925-4146
Associate Professor (Graphic Communications)
B.S., B.A., M.Ed., California University of Pennsylvania

COLLEEN M. BABILYA — 724-925-4014
Assistant Professor (Mathematics)
B.S., Pennsylvania State University; M.Ed., California University of Pennsylvania

SHELLY L. BERG — 724-925-4260
Assistant Professor (Biology)
B.S., M.S., California University of Pennsylvania

BENJAMIN N. BILOTT – 724-925-4153
Assistant Professor (Welding Technology & Metal Fabrication)*
B.A., Geneva College

HEATHER N. BLOTZER — 724-925-4272
Assistant Professor/Nursing*
A.S., Community College of Allegheny County; B.S., M.S.N., Waynesburg University

RODERICK T. BOOKER — 724-925-5976
Assistant Professor (Music)
B.S., M.Ed., Indiana University of Pennsylvania; Ed.D., Pennsylvania State University

MICHAEL T. CAGLIA — 724-925-4008
Assistant Professor (Computer Technology)
B.S., California University of Pennsylvania; M.S., University of Phoenix

DONNA M. CARCELLA — 724-925-4127
Instructor/Nursing (Evenings/Weekends)
B.S.N., M.S.N., Waynesburg University

ANDREW J. COLOSIMO — 724-925-4064
Instructor (Business Management)
B.S., Westminster College; M.B.A., Salisbury University

LOUIS T. CONGELIO — 724-925-4011
Professor (Mathematics)
B.A., Saint Vincent College; M.Ed., University of Pittsburgh; J.D., Duquesne University

JAMES M. CORDLE — 724-925-4273
Assistant Professor (Physics/Mathematics)
B.S., Carnegie Mellon University; M.S., University of Pittsburgh

JOHN D. CULYBA — 724-925-4033
Assistant Professor (English)
B.A., M.A., University of Pittsburgh

JOHN A. DELMASTRO — 724-925-4042
Assistant Professor (Biology)
B.S., University of Pittsburgh; M.D., Temple University School of Medicine

DAVID J. DILLMAN — 724-925-4041
Assistant Professor (Computer Technology)
B.S., M.S., University of Pittsburgh

KATHLEEN MENDUS DLUGOS — 724-925-4165
Associate Professor (Art)
B.A., B.F.A., Seton Hill College; M.F.A., Pennsylvania State University

JOAN G. DONOFRIO — 724-925-5972
Assistant Professor (Dental Hygiene & Dental Assisting)
B.S., California University of Pennsylvania; M.A., Indiana University of Pennsylvania

CARL A. DUNKEL, C.E.C., C.C.E. — 724-925-4254
Assistant Professor (Culinary Arts/Hospitality Programs)
A.A.S., Culinary Institute of America

JULIENNE M. ERB — 724-925-4286
Instructor (Diagnostic Medical Sonography)
A.A.S., Westmoreland County Community College; B.S., Coastal Carolina University

VAL S. FERRETTI — 724-925-4039
Assistant Professor (English)
B.A., M.A.T., Duquesne University

BRIAN FOTINAKES
Instructor (English)*
B.A., M.A., California Polytechnic State University

ROBERT J. FRANK — 724-925-4211
Assistant Professor (Mathematics)
B.S., Ursinus College; M.S., Lehigh University

REBECCA A. GEDIMINSKAS — 724-925-4170
Professor (Nursing)
B.S.N., M.S.N., University of Pittsburgh; D.N.P., Carlow Unversity

DOUGLAS M. GENGLER – 724-925-4162
Assistant Profesor (Manufacturing, Design & Fabrication)*
A.A.S., Westmoreland County Community College; M.B.A., B.S., Seton Hill University

PATRICIA E. GUTH — 724-925-4240
Professor (Psychology)
R.N., Washington Hospital School of Nursing; B.S., M.S., California University of Pennsylvania; D.Ed., Indiana University of Pennsylvania

MARK W. HARRISON — 724-925-4159
Counselor/SSS/Assistant Professor
B.A., M.A., Indiana University of Pennsylvania; M.P.H., University of Pittsburgh

BRIAN D. HAYS — 724-925-4259
Assistant Professor (English)*
B.A., Frostburg State College; M.A., University of Pittsburgh

CANDACE A. HENRY — 724-925-4044
Assistant Professor (English)
B.S. Saint Vincent College; M.A., Ph.D., Indiana Unversity of Pennsylvania

BETH HODEN — 724-925-4013
Assistant Professor (Early Childhood Education)
B.S., M.Ed., University of Pittsburgh

MICHAEL J. HRICIK — 724-925-4275
Professor (English)
B.S., King's College; M.A., San Diego State University; M.A., Chatham University

MARY KAY HUESDASH — 724-925-4288
Professor (Dental Hygiene)
R.D.H., University of Pittsburgh School of Dental Medicine; B.S., M.A., Indiana University of Pennsylvania

SUSANNE J. KALUP — 724-925-4238
Assistant Professor (Biology)
B.S., M.A.T., University of Pittsburgh

PERSONNEL DIRECTORY

DANIEL H. KEPPLE – 724-925-4000, ext. 3268
Assistant Professor (Machine Tool & Industrial Fabrication)*
B.A., B.S., Geneva College; M.Div., Reformed Presbyterian Theological Seminary

MICHAEL R. KILIVRIS
Assistant Professor (Philosophy)*
B.A., Skidmore College; Ph.D., Duquesne University

CINDY A. KOMARINSKI, C.C.C., C.C.E. — 724-925-4251
Professor (Culinary Arts/Hospitality Programs)
A.A.S., Westmoreland County Community College
B.S., B.A., Robert Morris College; M.B.A., Point Park College; Ph.D., Robert Morris University

KEVIN D. KOPPER — 724-925-4012
Assistant Professor (History)
B.S., M.A., Slippery Rock University; Ph.D., Kent State University

DENNIS W. KREINBROOK — 724-925-4220
Associate Professor (Psychology)
B.A., West Virginia University; M.A., California University of Pennsylvania; Ph.D., University of Pittsburgh

VICKY M. KRUG — 724-925-5988
Assistant Professor (Developmental Reading & Writing)
B.A., Seton Hill University; M.Ed., California University of Pennsylvania

MARLENE A. LUCAS — 724-925-4256
Assistant Professor (Office Technology & Web Design)
A.A.S., Westmoreland County Community College; B.S., University of Pittsburgh; M.A., Indiana University of Pennsylvania

FRANK A. LUCENTE — 724-925-4126
Associate Professor (Computer Technology)
A.A.S., Westmoreland County Community College; B.S., West Virginia Wesleyan College; M.L.S., University of Pittsburgh

AUTUMN A. MALOY — 724-925-5971
Assistant Professor (Biology)
B.S., Concord College; M.S., The Ohio State University

SUSAN B. McCLURE — 724-925-4265
Assistant Professor (Psychology)
B.A., Washington & Jefferson College; M.A., The New School for Social Research

MARY-MARGARET McINTOSH — 724-357-1404
Assistant Professor (Nursing)
B.S.N., Villa Maria College; M.S.N., Indiana University of Pennsylvania

CHERYL A. MILLER — 724-925-5984
Assistant Professor (Medical Administration & Office Technology)
B.S., California University; M.B.A., University of Phoenix

DUANE S. MOLNAR — 724-925-4045
Assistant Professor (English)
B.A., M.A., West Virginia University

CYNTHIA A. MORRIS — 724-925-4010
Assistant Professor/Nursing*
B.S.N., Indiana University of Pennsylvania; M.S.N., Waynesburg University; D.N.P., Carlow University

JOSEPH M. MYERS — 724-925-4236
Instructor/HVAC, Energy Systems & Controls*
A.S., ITT Technical Institute

JOSEPH M. NICASSIO — 724-925-4018
Professor (Accounting)
B.S., M.S., M.B.A., Robert Morris College; B.S., University of Pittsburgh

RICK D. OLIVER — 724-925-4136
Assistant Professor (Biology)
B.S., Virginia Polytechnic Institute and State University; M.S., James Madison University

DARLENE C. PABIS — 724-925-4289
Assistant Professor (Reading/Study Skills)
B.S.Ed., M.Ed., California University of Pennsylvania

RALPH H. PADGETT, JR. — 724-925-4037
Assistant Professor (Mathematics)
A.A.S., Westmoreland County Community College; B.S., M.Ed., Indiana University of Pennsylvania

DENNIS PEARSON — 724-925-4131
Associate Professor (Computer Technology)
A.A.S., Westmoreland County Community College; B.S., Robert Morris College; M.Ed., California University of Pennsylvania; B.S., M.S., M.L.S., M.S.I.S., University of Pittsburgh

JONNI K. PIELIN-KIRCHER — 724-925-4164
Assistant Professor (Nursing)
A.A.S., Westmoreland County Community College; B.S.N., California University of Pennsylvania; M.S.N., University of Southern Indiana

PATRICK E. PIRILLA
Instructor (Mathematics)*
B.S., Saint Vincent College; M.S., Youngstown State University

ANGELA S. RINCHUSE — 724-925-4163
Professor (Dental Hygiene)
R.D.H., University of Pittsburgh School of Dental Medicine; B.S.Ed., California University of Pennsylvania; M.Ed., Duquesne University

MARY D. RODGERS — 724-925-4020
Assistant Professor (Nursing)
B.S.N., Carlow University; M.S.N., Indiana University of Pennsylvania

MELISSA S. ROSSELL — 724-925-4031
Instructor (Nursing)
A.A.S., Westmoreland County Community College; B.S., Slippery Rock University; M.S., Walden University

MELISSA R. RUGH — 724-925-5973
Assistant Professor (Reading & Education)
B.A., Westminster College; M.Ed., Indiana University of Pennsylvania

NANCY E. RUSTIC — 724-925-4035
Assistant Professor/Early Childhood Education*
B.S., Indiana University of Pennsylvania; M.Ed., Carlow College

CRAIG F. SANTICOLA — 724-925-4105
Assistant Professor (Economics & Business)
B.A., M.B.A., Southeastern Louisiana University; Ph.D., Robert Morris University

ROBERT A. SAUL — 724-925-4007
Instructor (Business Managment)
B.S., Indiana University of Pennsylvania; M.B.A., University of Phoenix; Ph.D.Ed., North Central University

JOHN D. SCASSELLATI — 724-925-5985
Assistant Professor (Chemistry)
B.A., M.Ed., East Stroudsburg University; D.A., Lehigh University

JUDITH A. SCHEEREN — 724-925-4160
Associate Professor (Computer Technology)
B.S., M.S., University of Pittsburgh

SUSAN C. SCHEIBLE — 724-925-5986
Associate Professor (Radiology Technology)
A.S., Community College of Allegheny County; B.S., University of Pittsburgh; M.B.A., Waynesburg College

BELINDA M. SEDLAK — 724-925-4096
Librarian (Assistant Professor)
B.S., Clarion University of Pennsylvania; M.L.S., University of Pittsburgh

PERSONNEL DIRECTORY

MEGAN E. SEIBEL
Instructor (Mathematics)*
B.S., Grove City College; M.S., Youngstown State University

CARIE A. SHEDLOCK — 724-925-4166
Instructor/Nursing*
B.S.N., Alderson-Broaddus College; M.S.N., Indiana University of Pennsylvania

ETHAN SHEETS — 724-925-4276
Instructor (Maintenance, Troubleshooting and Process Control)*
M.S., Bob Jones University; B.S., Penn State University

JOHN SHELAPINSKY — 724-925-4034
Associate Professor (Paralegal, Business, Real Estate)
B.A., University of Pittsburgh; M.A., California University of Pennsylvania; J.D., Duquesne University

CHERYL BYERS SHIPLEY, R.D. — 724-925-4235
Assistant Professor (Culinary Arts/Hospitality Programs)
B.S., M.S., Indiana University of Pennsylvania

STUART SILVERBERG — 724-925-6954
Assistant Professor (Psychology)
Ph.D., M.A., State University of New York at Stoney Brook; B.A., Fordham University; A.A., Rockland Community College

ALLAN N. SIMONS — 724-925-4118
Assistant Professor (Manufacturing)
B.S.E.E., B.S.M.E., Geneva College; M.S., Robert Morris University

RANDY L. SLAGLE — 724-925-4026
Assistant Professor (Criminal Justice)
A.A.S., Spartansburg Methodist College; B.A., Florida Atlantic University; M.S., Florida International University

SUE ELLEN SNYDER — 724-925-4271
Assistant Professor (Nursing)
B.S.N., California University of Pennsylvania; M.S.N., Carlow College

THOMAS SOLTIS — 724-925-4239
Assistant Professor (Sociology)
B.A., M.A., Ph.D., University of Pittsburgh

SHARON SPARKS — 724-925-4102
Librarian/Assistant Professor
A.A., Westmoreland County Community College; B.A., Seton Hill College; M.L.I.S., University of Pittsburgh

FRANK L. STASA – 724-925-4000, ext. 3269
Assistant Professor/Engineering Technology*
P.E., State of Florida, Board of Professional Engineers; B.S., University of Pittsburgh; M.S., Ph.D., Carnegie Mellon University

DONNA L. STEELE — 724-925-5989
Assistant Professor/Nursing (Evenings/Weekends)
B.S.N., M.A., Indiana University of Pennsylvania; M.S.N., Waynesburg University

MARTIN S. ST. JOHN — 724-925-4203
Assistant Professor (Business Management)
B.S., M.B.A., University of Pittsburgh

JACK W. SUTCLIFFE — 724-925-4274
Assistant Professor (Chemistry)
B.S., M.S., University of Pittsburgh

LINDSAY A. SWISS — 724-925-4059
Counselor/SSS/Assistant Professor
M.Ed., Indiana University of Pennsylvania; B.S., University of Pittsburgh

CHARLES SZTROIN, JR. — 724-925-4258
Assistant Professor (Multimedia Technology)
B.S., California University of Pennsylvania

MICHELLE CAMPBELL TOOHEY — 724-925-4233
Professor (English)
B.A., Seton Hill College; M.A., Ph.D., Indiana University of Pennsylvania; M.Ed., Temple University

STEPHANIE TURIN — 724-925-4232
Instructor (Human Services)
M.S., University of Pittsburgh; B.A., Seton Hill University

GARY W. UHRIN — 724-925-4038
Assistant Professor (Criminal Justice)
B.A., M.A., Indiana University of Pennsylvania

BARBARA A. WALTERS — 724-925-3588
Assistant Professor (Nursing)
B.S.N., M.S.N., Waynesburg College

DEBRA A. WARD – 724-925-4022
Instructor/Nursing*
A.A.S., Westmoreland County Community College; B.A., Seton Hill University; B.S.N., Carlow University; M.S.N., Waynesburg University

CARLENE B. WILLIAMS — 724-925-4139
Counselor/Act 101/Professor
B.A., William Patterson College; M.Ed., Columbia University Teachers College

ROBERT C. WRIGHT — 724-925-4282
Counselor/Associate Professor
B.S., M.Ed., California University of Pennsylvania

CAROLE A. ZEGLIN — 724-925-4140
Professor (Medical Assisting & Medical Laboratory Technology)
A.S., Franklin School of Science and Arts; B.S., Point Park College; M.S., Saint Vincent College

XURI ZHANG — 724-925-4257
Professor (Horticulture)
B.S., Zhejiang Agricultural University; M.S., Ph.D., Pennsylvania State University

****Denotes full-time temporary faculty***

PROFESSIONAL STAFF

SUZANNE L. BREWER — 724-925-4583
Student Support Services Assistant
A.S., Community College of Allegheny County

JOYCE E. COLE – 724-925-4188
Computer Resource Center Assistant
A.A.S., Westmoreland County Community College

ANDREW J. DOHERTY — 724-925-4133
Developmental Education Assistant-Chief Examiner
A.A.S., Westmoreland County Community College

FRANK J. GAUL — 724-925-4285
Science/Technology Assistant
B.S., California University of Pennsylvania

JACKIE A. GREENAWALT — 724-925-4280
Student Services Support Assistant-Developmental Education
B.A., M.S., California University of Pennsylvania

GAIL L. HAMROCK — 724-925-4078
Student Services Assistant
A.A.S., Westmoreland County Community College

MELISSA M. KOCHUGA — 724-925-6895
Student Services Support Assistant-Developmental Education
B.A., B.S., Duquesne University

DEBORAH L. KUKIC — 1-800-262-2103, ext. 3317
Financial Aid Assistant
B.A., University of Pittsburgh

KAREN L. MORGAN — 724-925-6894
Student Services Support Assistant-Developmental Education
A.A.S., Westmoreland County Community College

EZEKIEL U. PATTERSON – 724-925-4148
Biological Science Lab Assistant
B.S., University of Pittsburgh

WENDY A. SEMAN — 724-925-4056
Financial Aid Assistant
A.S., Gannon College

LOUIS T. SURACE – 724-925-6980
Student Services Support Assistant – Developmental Education
B.S., California University of Pennsylvania; M.Ed., Indiana University of Pennsylvania

ANNE MARIE ZEMBA — 724-925-6956
Library Assistant (Technical Services)
A.A.S., Westmoreland County Comunity College; B.S., Clarion University

EMERITUS FACULTY

DAVE BRUCE
Professor (Electronics)

MARIO CECCHETTI
Professor (Computer Technology)

MARILYN GIORGIO-POOLE
Associate Professor (English)

GORDON JOHNSON
Professor (Physics)

BARBARA STEPHENS
Professor (Biology)

RUTH ANN ZUPAN
Professor (English)

PERSONNEL DIRECTORY

WCCC EDUCATIONAL FOUNDATION, INC.

The Westmoreland County Community College Educational Foundation, Inc. provides an opportunity for individuals, organizations, businesses and industries to contribute financially to the college. The foundation strives to help meet the critical needs facing the college so that a high-quality, low-cost education is available to all interested residents of the county. The work of the foundation helps WCCC by establishing student scholarships, faculty and academic improvement grants, and raising funds for several long-range goals, including improvements to the campus and support facilities.

The foundation is an IRS-501(c)3 charitable, nonprofit organization governed by its own board of directors. All donations are tax deductible.

BOARD OF DIRECTORS

PHILIP V. McCALISTER
President
New Kensington, Pennsylvania
Attorney at Law/McCalister & Associates, P.C.

LORRIE PAUL CRUM
Vice President
Latrobe, Pennsylvania
Vice President/Corporate Relations, Kennametal Inc.

DOUGLAS W. BELLA
Secretary
Latrobe, PA
New Stanton Hub Division Manager, UPS

WILLIAM K. COX
Treasurer
Jeannette, Pennsylvania
Vice President & General Counsel/Elliott Company

JAMES BENDEL
Greensburg, Pennsylvania
Community Foundation of Westmoreland County

GENE P. CIAFRE
Greensburg, Pennsylvania
Pesident/General Products & Supply, Inc.

DR. NANCY DAVIS
Waynesburg, Pennsylvania
Community, Education & Industry Liaison, Greene County/Westmoreland County Community College

L. CHRISTIAN DeDIANA, Esq.
Latrobe, Pennsylvania
Attorney at Law

EUGENE J. DICKERT, JR.
Latrobe, Pennsylvania
Retired/Elliott Company

DENNIS R. DIFFENDERFER
North Huntingdon, Pennsylvania
Insurance Broker

JOSEPH B. FREILAND
Irwin, Pennsylvania
President/Dura-Metal Products Corporation

BUCK HELFFERICH
Latrobe, Pennsylvania
Owner/Tronix LLC

ALAN LAICK
Finleyville, Pennsylvania
Owner, Creative Director/Laick Design

BONNIE B. LEWIS
Latrobe, Pennsylvania
Retired/YWCA of Westmoreland

DAVID W. McDONALD
Greensburg, Pennsylvania
Regional President/West Penn Power

MARY CATHERINE MOTCHAR
Greensburg, Pennsylvania
President/Arbor Industrial Supplies, Inc.

PAMELA H. MOWRER
Greensburg, Pennsylvania
Coordinator/WCCC Educational Foundation

RONALD OTT
Murrysville, Pennsylvania
Vice President/Government Affairs & Business Development, Excela

MARCY PARK
Mount Pleasant, Pennsylvania
Marketing Manager/WalMart

ANTHONY M. PERRICELLI
Murrysville, Pennsylvania
Principal/Gateway Financial

CAROL SUE ROCKER
Yukon, Pennsylvania
Retired/Yukon-Waltz Telephone Company

JAN PERKINS
Greensburg, Pennsylvania
Secretary/Westmoreland County Community College

WILLIAM SCALISE
North Huntingdon, PA
President/Scalise Construction Inc. &
Scalise Real Estate, Inc.

JUDITH A. SCHEEREN
Greensburg, Pennsylvania
Associate Professor, Computer Technology/Westmoreland County Community College

BUD SMAIL
Greensburg, Pennsylvania
President/Smail Auto Group

DR. TUESDAY STANLEY
Greensburg, Pennsylvania
President/Westmoreland County Community College

JOSEPH TRIMARCHI
Indiana, Pennsylvania
Vice President of Services/First Commonwealth Bank

ROSEMARIE WOLFORD
Latrobe, Pennsylvania
Manager, Labor Relations - Medical Services/Latrobe Steel

DEBRA D. WOODS
Greensburg, Pennsylvania
Executive Director/Westmoreland County Community College Educational Foundation, Inc.

JOHN D. WRIGHT
Greensburg, Pennsylvania
Retired/International Representative/United Association of Plumbers and Pipefitters

WCCC EDUCATION FOUNDATION EMERITUS BOARD

DAVID S. DAHLMANN
Greensburg, Pennsylvania
Chairman of the Board/First Commonwealth Financial Corp.

EDWIN R. HOGAN
West Newton, Pennsylvania
Retired President/Jones Brewing Company

A. RICHARD KACIN
Murrysville, Pennsylvania
President/A. Richard Kacin, Inc.

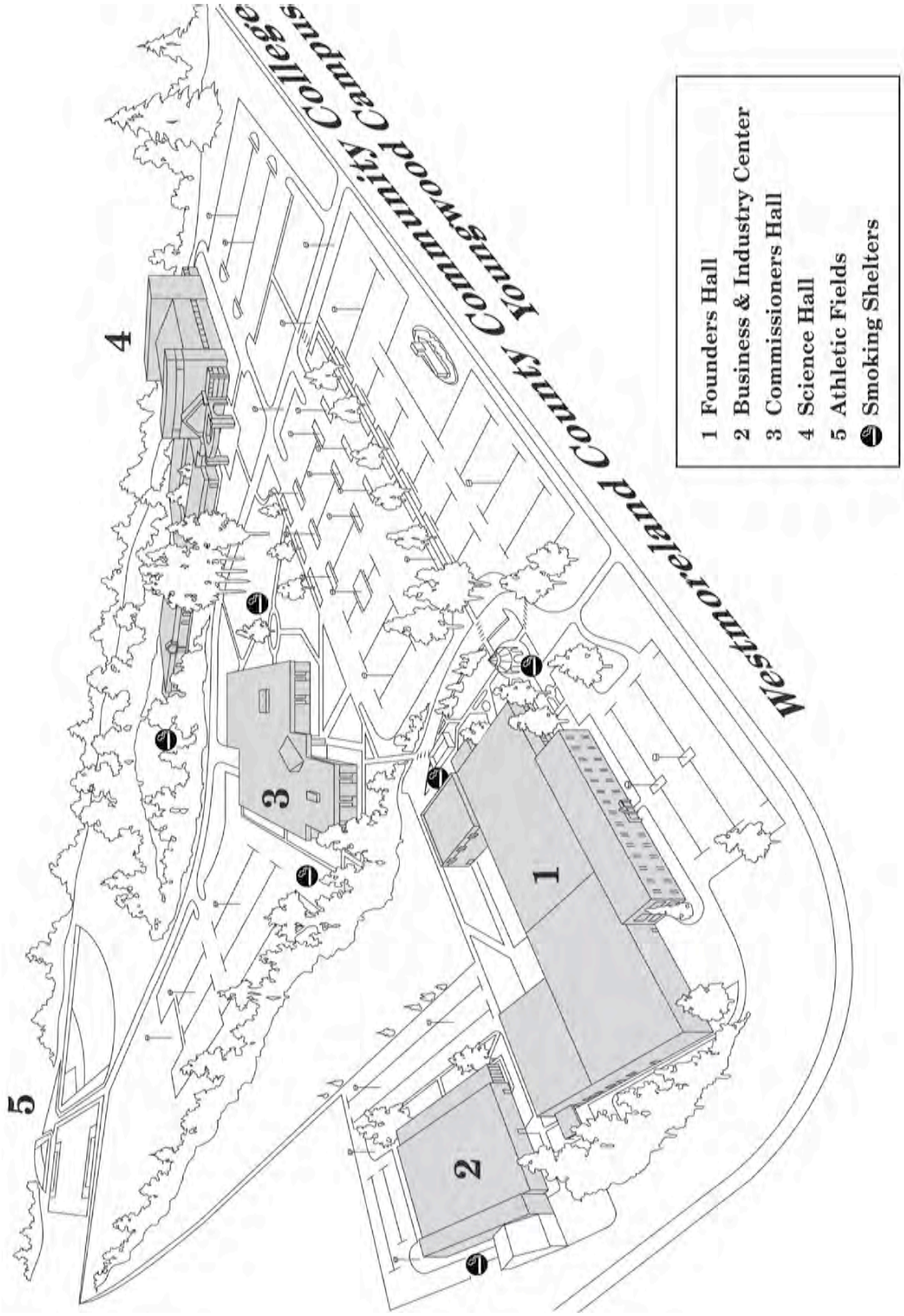
DANIEL C. KREZENSKI, D.Ed.
Lake Wales, Florida
Retired President/Westmoreland County Community College

JACK H. MILLSTEIN, JR.
Youngwood, Pennsylvania
Managing Director/Millstein Industries

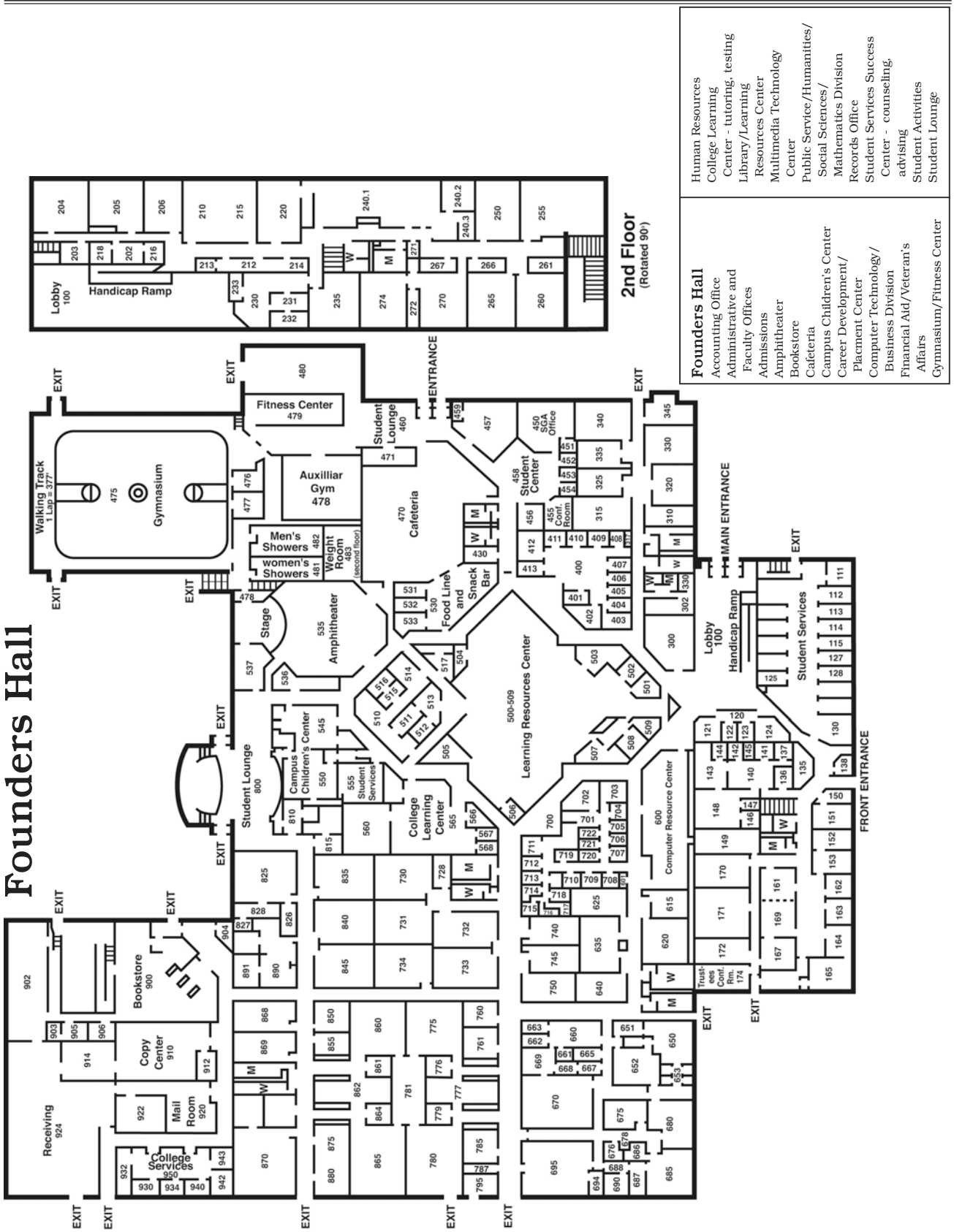
DR. DANIEL J. OBARA
Irwin, Pennsylvania
Retired President/Westmoreland County Community College

JOHN A. ROBERTSHAW, JR.
Greensburg, Pennsylvania
Robertshaw Management, Ltd.

Locations and Facilities



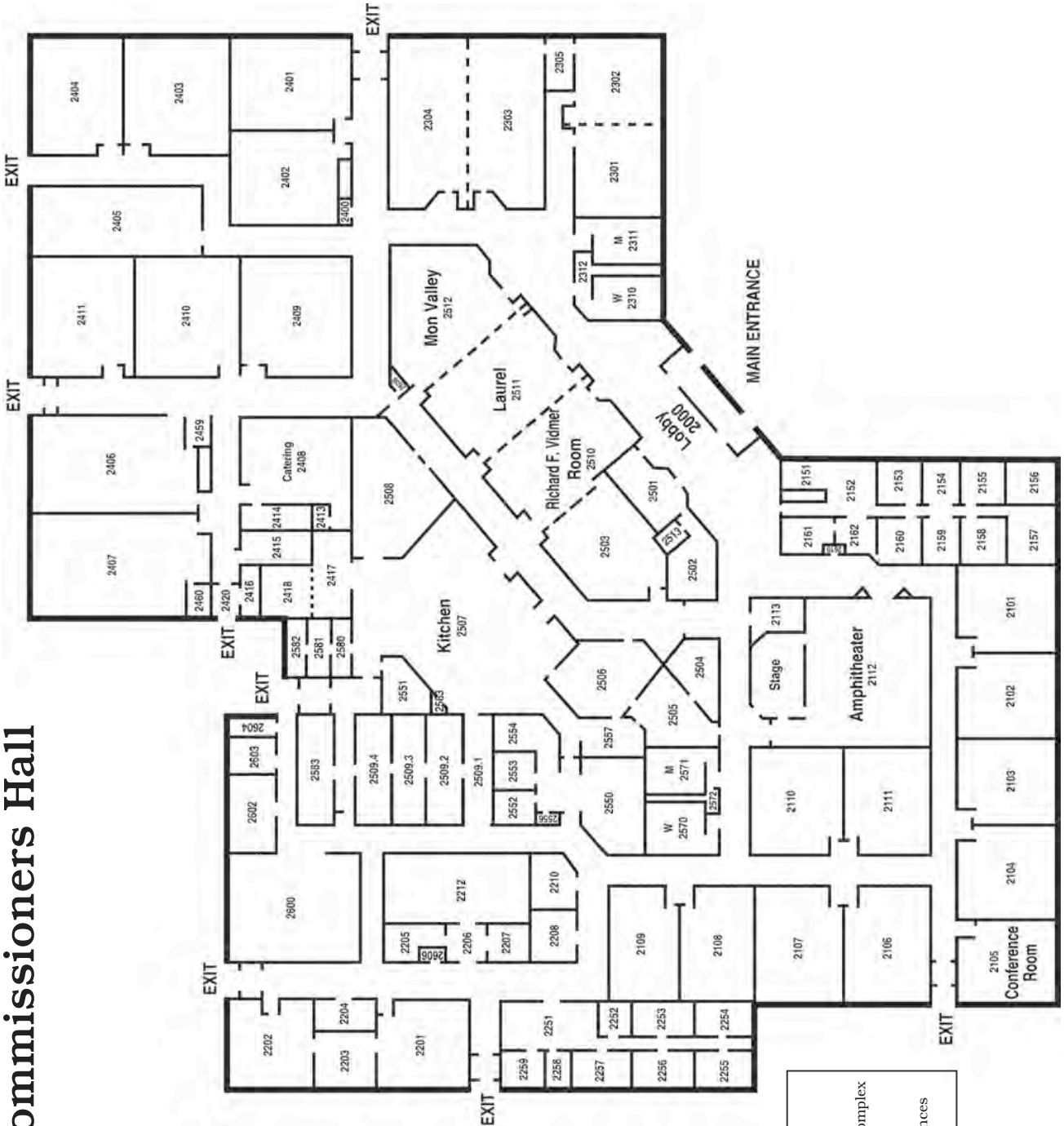
Locations and Facilities



Founders Hall

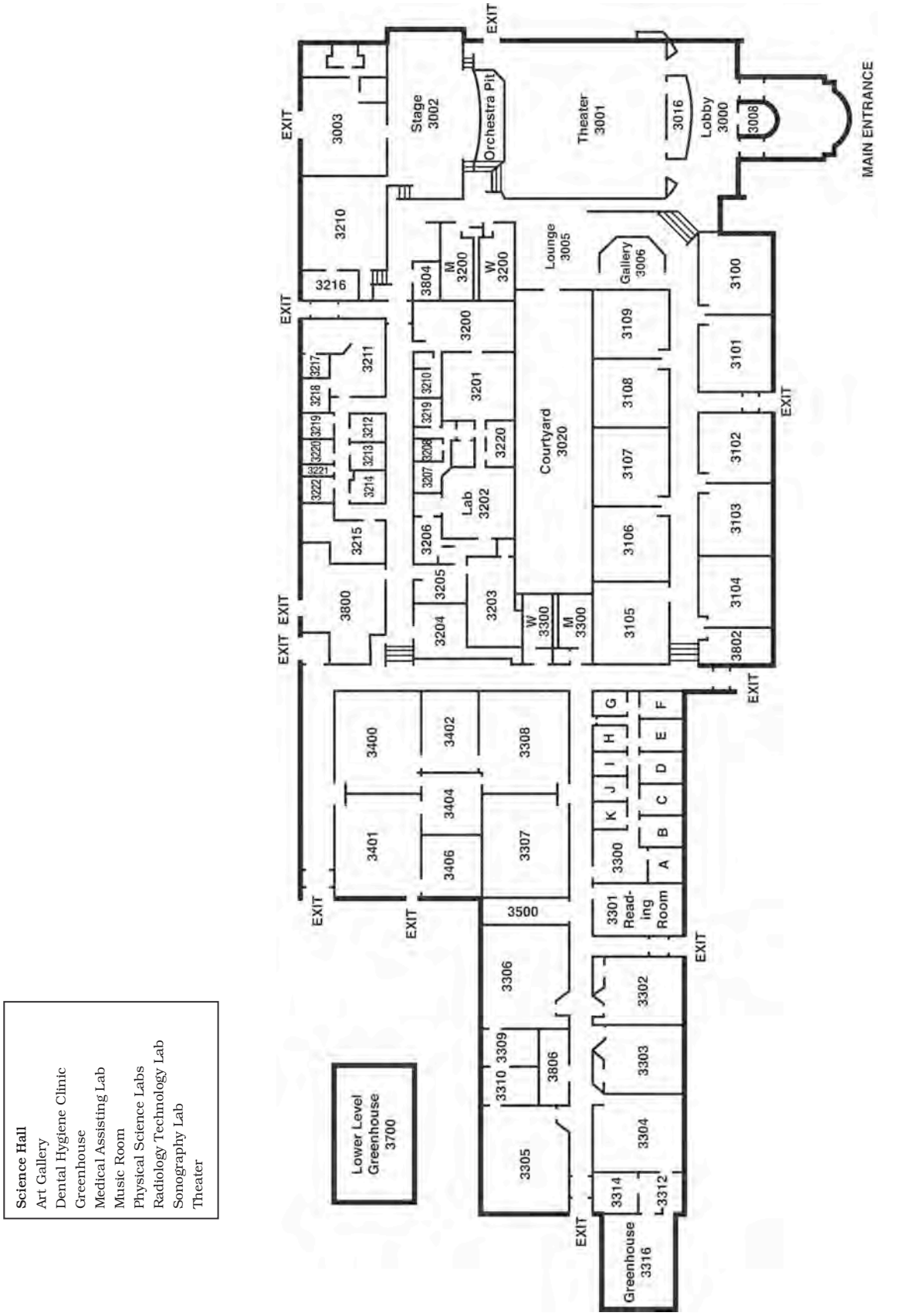
- Accounting Office
- Administrative and Faculty Offices
- Admissions
- Amphitheater
- Bookstore
- Cafeteria
- Campus Children's Center
- Career Development/ Placement Center
- Computer Technology/ Business Division
- Financial Aid/Veteran's Affairs
- Gymnasium/Fitness Center
- Human Resources
- College Learning Center - tutoring, testing
- Library/Learning Resources Center
- Multimedia Technology Center
- Public Service/Humanities/ Social Sciences/ Mathematics Division
- Records Office
- Student Services Success Center - counseling, advising
- Student Activities
- Student Lounge

Commissioners Hall



Commissioners Hall
Continuing Education Grants Management
Culinary Arts Kitchen/Dining Complex
Dining Rooms
Lecture Room
Health Professions/Natural Sciences Division

Science Hall



INDEX

INDEX

D

E

F

INDEX

INDEX

INDEX

MAJORS

Associate of Arts Degree — A.A.

The associate of arts degree is designed to parallel the first two years of a baccalaureate degree and transfer to four-year colleges and universities. Some of the areas of study are listed below. This list does not include all possible baccalaureate degree majors. If you plan to transfer to a four-year institution in a major other than one listed on this page, or if you are undecided as to your major, use code LIB.

TRANSFER

LBI	Biology Transfer
LBU	Business Transfer
LCH	Chemistry Transfer
LCI	Chiropractic Transfer
LCM	Communication Transfer
LCO	Computer Science Transfer
LCR	Criminal Justice Transfer
LEN	Engineering Transfer
LEG	English Transfer
LPH	Health & Physical Education Transfer
LHE	Health Professions Transfer
LHI	History Transfer
LHU	Humanities Transfer
LLI	Library Science Transfer
LMA	Mathematics Transfer
LPA	Pre-Law Transfer
LPY	Physics Transfer
LPO	Political Science Transfer
LPS	Psychology Transfer
LSO	Sociology Transfer
LTE	Teacher Education Transfer
LIB	Undecided Transfer

Associate of Fine Arts Degree — A.F.A.

ART	Visual Art
ATH	Art Therapy
GRA	Graphic Design
MUS	Music

General Studies Transfer

TRAN	Diploma

Associate of Applied Science Degree, Diploma, Certificate

If you are undecided about a major, choose the code that is closest to your possible major.

ACCOUNTING

ACT	Degree
ACCTS	Computer Accounting and Tax Specialist - Certificate
ACCTG	General Accounting - Certificate

APPLIED INDUSTRIAL TECHNOLOGY

AIT	Degree

ARCHITECTURAL DRAFTING AND DESIGN

ADD	Degree

BAKING & PASTRY

BAA	Apprenticeship - Degree
BAN	Non-Apprenticeship - Degree
BAPA	Non-Apprenticeship - Diploma
BPAA	Apprenticeship - Diploma
BAKPA	Non-Apprenticeship - Certificate

BIONANOTECHNOLOGY

BNT	Degree

BUSINESS

FIN	Finance - Degree
BUS	General Management - Degree
HRM	Human Resource Management - Degree
MKM	Marketing Management - Degree
SBM	Small Business Management - Degree
BUSG	Business - Diploma
FINMG	Financial Management - Certificate
BUSMG	General Management - Certificate
HRMGT	Human Resource Management - Certificate
MKTMG	Marketing Management - Certificate
RESMG	Real Estate Management - Certificate
SMBMG	Small Business Management - Certificate
SUPCM	Supply Chain Management - Certificate

COMPUTER INFORMATION SECURITY

CIS	Degree
COIFS	Certificate

COMPUTER NUMERICAL CONTROL

CNU	Degree
CNUI	Certificate

COMPUTER TECHNOLOGY

CON	Networking - Degree
CPE	Programming for the Enterprise - Degree
CTS	Technical Support - Degree
CTT	Telecommunications - Degree
COTE	Diploma
CODMG	Database Application - Certificate
COFIO	Fiber Optic Technologies - Certificate
	Medical Computer Support - Certificate
COTEC	Microcomputer Applications - Certificate
CONET	Networking - Certificate
COREP	PC Repair/A+ - Certificate
COPRG	Programming - Certificate
COWED	Web Development - Certificate
MEDCS	Medical Computer Support - Certificate

CRIMINAL JUSTICE

CJU	Degree
CJS	Information Security - Degree
CJUCO	Corrections Officer - Certificate
CJUSP	Security Professional - Certificate

CULINARY ARTS

CUA	Apprenticeship - Degree
CUN	Non-Apprenticeship - Degree
CUAA	Apprenticeship - Diploma
CUNA	Non-Apprenticeship - Diploma

***DENTAL ASSISTING**

DEAS	Diploma
EXFDA	Expanded Functions Dental Assisting - Certificate

***DENTAL HYGIENE**

DEH	Degree

MAJORS

***DIAGNOSTIC MEDICAL SONOGRAPHY**
DMS Degree

DIETETIC TECHNICIAN/NUTRITIONAL SERVICES MANAGEMENT
NSM Degree

DINING ROOM MANAGEMENT
DINRM Certificate

DRAFTING & DESIGN TECHNOLOGY
DDC CADD/CAM - Degree
DDM Mechanical Drafting - Degree

EDUCATION/PRE-K–GRADE 4
EDU Degree
EDUC Diploma
EACHD Director - Certificate
EDPRK Certificate

ELECTRICAL UTILITY TECHNOLOGY
EUT Degree

ELECTRONICS ENGINEERING TECHNOLOGY
EET Electronics - Degree

ENGINEERING TECHNOLOGY
ENT Degree

FIRE SCIENCE TECHNOLOGY
FSC Degree
FSCT Diploma
FSCTE Certificate

FORENSIC SCIENCE
FORSC Forensic Science Investigator - Certificate

GRAPHIC COMMUNICATIONS
GRP Graphics & Publishing - Degree
WMD Web & Mobile Design - Degree
GRAPB Graphics & Publishing - Certificate
WEBMD Web & Mobile Design - Certificate

HEATING, VENTILATION, AIR-CONDITIONING & REFRIGERATION
HVA Degree
HVARE Certificate

HOMELAND SECURITY MANAGEMENT
HSM Degree
HOSEC Certificate

HORTICULTURE
FLO Floriculture - Degree
HOR Landscape, Design, Installation & Maintenance - Degree
TUR Turfgrass Management - Degree
FLORT Floriculture - Certificate
HORTT Horticulture - Certificate
LANDN Landscape Design - Certificate
LANIM Landscape Installation & Maintenance - Certificate
TURMG Turfgrass Management - Certificate

HOTEL/RESORT MANAGEMENT
TTO Degree
HTRS Diploma
HTRSM Certificate

HUMAN SERVICES
HUS Degree

INDUSTRIAL ELECTRICITY TECHNOLOGY
INELC Certificate

JOURNEYMAN TECHNOLOGY
JRM Degree
JOUR Diploma
JOURN Certificate

MACHINE TECHNOLOGY
MAT Degree
MATEI Certificate

MAGNETIC RESONANCE IMAGING
MRICT Certificate

MANUFACTURING TECHNOLOGY
MAP Manufacturing Process Technology - Degree
NFM Nanofabrication Manufacturing - Degree

MECHATRONICS SYSTEMS
MEC Degree
MECTR Certificate
MSTTI Mechatronics Technician I - Certificate
MSTTII Mechatronics Technician II - Certificate

***MEDICAL ASSISTING**
MEAS Diploma

MULTIMEDIA & PHOTOGRAPHY
MMT Multimedia Technology - Degree
PHO Photography - Degree
ADOBE Adobe Video Studio - Certificate
PHOTO Photography - Certificate
VIDTE Video/Television - Certificate

NATURAL GAS & OIL TECHNOLOGY
NGOTT Certificate

***NURSING**
NUR Degree

OCCUPATIONAL HEALTH & SAFETY
OCHSS Certificate

OFFICE TECHNOLOGY
OTM Medical Administration - Degree
OTA Office Administration - Degree
OADM Office Administration - Diploma
OTMD Medical Administration - Diploma
OMADM Medical Administration - Certificate
Medical Computer Support - Certificate
OADMN Office Administration - Certificate
OTCSV Customer Service - Certificate
MEDCS Medical Computer Support - Certificate

PARALEGAL
LEA Degree
LEAS Diploma

PETROLEUM INDUSTRIAL PROCESS OPERATION TECHNOLOGY
PIPOT Certificate

PETROLEUM TECHNOLOGY
PTT Degree

***PHLEBOTOMY**
PHBSP Phlebotomy/Specimen Processing - Certificate
PHLEB Phlebotomy - Certificate

PIPELINE MECHANIC
PIMEC Certificate

RESTAURANT/CULINARY MANAGEMENT

RSC	Degree
RSCM	Diploma
RSCMG	Certificate

***RADIOLOGY TECHNOLOGY**

RAD	Degree

ROBOTICS TECHNOLOGY

RBT	Degree

SCIENCE TECHNOLOGY

STB	Biology - Degree
STC	Chemistry - Degree
STF	Forensics - Degree
STM	Medical Applications - Degree

WEB TECHNOLOGY

WEP	Web Publishing - Degree
COWED	Web Development - Certificate
WEPUB	Web Applications - Certificate

WELDING ENGINEERING TECHNOLOGY

WET	Degree
WELTE	Certificate

All students must complete the Application for Admission which is available online at wccc.edu or by calling 724-925-4077. Programs with an asterisk (*) also require students to complete the Allied Health Programs Application.

Westmoreland County Community College
Youngwood Campus
145 Pavilion Lane
Youngwood, PA 15697
724-925-4000

Advanced Technology Center
1001 Technology Drive, Suite 1009
Mt. Pleasant, PA 15666
724-925-4269

WCCC-Bushy Run
6707 Mellon Road
Export, PA 15632
724-327-8090

WCCC-Fayette
140 North Beeson Boulevard, Suite 304
Uniontown, PA 15401
724-437-3512

Greene County Education Center
100 EverGreene Drive, Suite 102
Waynesburg, PA 15370
724-627-3464

Indiana County Community College Center
45 Airport Road
Indiana, PA 15701
724-357-1404

WCCC-Latrobe
130 Depot Street
Latrobe, PA 15650
724-925-8473

WCCC-Mon Valley
1181 Fells Church Road
Belle Vernon, PA 15012
724-379-4119

WCCC-New Kensington
1150 Fifth Avenue
New Kensington, PA 15068
724-335-8110

WCCC Public Safety Training Center
65 Public Safety Drive
Smithton, PA 15479
724-872-2447

Admissions@wccc.edu

Facebook.com/ConnectWCCC

Twitter.com/ConnectWCCC

Scan Me