



COMMUNITY
COLLEGE OF
ALLEGHENY
COUNTY

CATALOG
2015-2016



OUR GOAL IS YOUR SUCCESS

Community College of Allegheny County

CATALOG 2015–2016

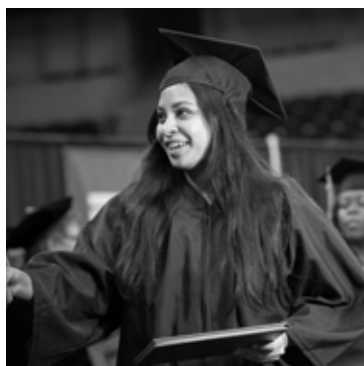


Allegheny
Campus



Boyce
Campus

North
Campus



South
Campus

Our agreement to the governance process is that all curriculum changes approved (presidential signature) by March 5, 2015 are included in the 2015–2016 catalog.

COMMUNITY COLLEGE OF ALLEGHENY COUNTY

This catalog is a one-year publication containing revisions or additions that have occurred since the 2014–2015 edition. It is in effect for students who begin their studies or change their programs during or after summer 2015. Students currently enrolled at the Community College of Allegheny County may continue in their declared program or choose to change their program to one outlined in this catalog. See program requirements for more information.

The catalog content is ongoing electronic content as published on the college website. Curriculum and policy/regulation changes approved after the printed date of this catalog will appear in the content published on the web page. The college website address is **ccac.edu**.

The Community College of Allegheny County is accredited by the Middle States Association of Colleges and Schools, 3624 Market Street, Philadelphia, PA 19104-2680, phone 215.662.5606. Health programs are separately accredited by appropriate regulatory agencies. The Community College of Allegheny County is a member of the Pittsburgh Council on Higher Education (PCHE).

This catalog is published by the Community College of Allegheny County, 800 Allegheny Avenue, Pittsburgh, PA 15233. The college reserves the right to change information in the catalog.

College Nondiscrimination Policy

The College does not discriminate and prohibits discrimination against any individual based upon race, color, religion, national origin, ancestry or place of birth, sex, gender identity or expression, perceived gender identity, sexual orientation, disability, use of a service animal due to disability, marital status, familial status, genetic information, veteran status, age or other classification protected by applicable law in matters of admissions, employment, services or in the educational programs or activities that it operates.

Employees, students, third-party vendors and guests may report conduct that is believed to be in violation of this policy or applicable law by contacting the College's Office of Human Resources or the Civil Rights Compliance Officer/Title IX Coordinator.

Office of Human Resources
Office of College Services
800 Allegheny Avenue
Pittsburgh, PA 15233
412.237.3001
pschwarzmill@ccac.edu

Civil Rights Compliance Officer/Title IX Coordinator
808 Ridge Avenue
Byers Hall 316
Pittsburgh, PA 15212
412.237.4430
smisra@ccac.edu

The college also prohibits and will not engage in retaliation against any person who in good faith reports a violation of this policy, makes a claim of discrimination or harassment, provides investigation of a potential violation of this policy or otherwise engages in protected activity under the law.

Individuals with disabilities who are requesting accommodations should contact the Supportive Services for Students with Disabilities office at the campus that they will be attending. This publication is available in alternate formats. Questions may be addressed to the Civil Rights Compliance Officer.

Notifications of nondiscrimination and contact information can be found at ccac.edu/nondiscrimination

Letter from the President



Welcome to the Community College of Allegheny County. Whether your goal is to pursue a new career, improve your current skill set, earn a national certification or an associate degree at CCAC before entering the workforce or transferring to a four-year institution, CCAC students have a wealth of affordable educational, career and workforce development options from which to choose.

CCAC offers more than 150 academic programs across six diverse program categories including business; science, technology, engineering and mathematics; health; arts and humanities; education, social and behavioral sciences; and the skilled trades. In addition, CCAC students enjoy the flexibility of scheduling classes during daytime, evening or weekend hours at one of eight convenient locations. Online and blended classes are also available to further fit a variety of schedules and educational needs.

As you browse our program and course offerings, note that CCAC's academic programs are designed for results. Transfer and articulation agreements aid in the pursuit of four-year degrees, while programs such as those in the skilled trades, allied health fields and culinary arts prepare students for immediate employment. Our offerings extend beyond the classroom too. CCAC students have the opportunity to participate in more than 100 student clubs and organizations as well as a number of NJCAA men's and women's sports teams available at each of our four campuses. In addition, all students have access to an extensive network of support services, including academic advising and career counseling services, as well as the college's Learning Commons and Math Cafés—available at all four CCAC campuses (and some centers) to help provide drop-in, as needed academic assistance.

For nearly 50 years CCAC has flourished, becoming the educational powerhouse it is today. We are honored to have one of the largest veteran student populations in the region and take pride that we graduate one of the highest number of health career graduates among two-year colleges, ranking number two in the nation for registered nurses and ranking in the top 10 for the number of graduates in other health-related professions. With nearly 30,000 students working toward degree, certificate, diploma and transfer credentials every year, CCAC remains the region's preeminent college for the community—one that is responsible for educating one out of three Allegheny County residents 18 years and older.

We look forward to welcoming you as a student and as a proud and future alumnus of the Community College of Allegheny County.

Dr. Quintin B. Bullock
President

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College Vision, Mission, Priorities & Values

Vision

CCAC provides a supportive and transformative learning environment that prepares graduates to meet critical needs in the region's workforce. Stakeholders have strong personal connections with CCAC and support it as a sound investment in community and economic vitality.

Mission

The Mission of the Community College of Allegheny County is to provide affordable access to quality education and offer a dynamic, diverse and supportive learning environment that prepares the region's residents for academic, professional and personal success in our changing global society.

Strategic Priorities 2011–2016

- Ensure the success of learners through ongoing **assessment** of learning outcomes and overall institutional effectiveness.
- Provide learners with **opportunities**, including programs and services, that enable success in academic, career, personal and civic pursuits.
- Develop and enhance **partnerships**, internal and external, that help identify and respond to the educational needs of the community.
- Guide and support the economic development of our region with responsive, solution-driven **workforce** training programs.
- Develop and deliver educational opportunities for learners at **every stage** of their lives.
- Promote learning through the effective application of available and expanded **resources**.
- Enable CCAC learners to share, learn and apply principles of **diversity** that foster a culture of inclusion and understanding at the college and within the global community.

College Values

Learning

We provide a caring and professional learning environment that places the needs of students first in our decision making.

Excellence

We are committed to high academic standards, quality services and the ongoing development, recruitment and retention of qualified and accomplished faculty and staff.

Innovation

We expect and reward exploration, inquiry and entrepreneurship that anticipate and respond to the needs of students, the community and employers.

Diversity

We are a leader in forging positive relationships among diverse communities in our region by creating an inclusive environment for teaching and learning, with a commitment to the recruitment and success of a diverse student body, faculty and staff.

Community

We develop collaborative internal and external partnerships that include the sharing of resources, information and ideas to meet the educational, economic and social needs of the community.

Teamwork

We create a positive college culture in which everyone is valued. Our effective work environment is built on a foundation of trust, empowerment and cooperation.

Integrity

We maintain an environment that encourages an open exchange of ideas. Data and information are used to drive decision making, allocate resources, set strategic direction and assess results.

Performance

We are strategically focused and committed to achieving and recognizing results that are consistent with our mission, enduring goals and strategic objectives.

Stewardship

We are effective and ethical stewards of the resources placed in our trust. Seeking, using and protecting financial, physical, technological and human resources are a shared responsibility.

COMMUNITY COLLEGE OF ALLEGHENY COUNTY

CAMPUSES & CENTERS

ALLEGHENY CAMPUS

808 Ridge Avenue
Pittsburgh, PA 15212-6003
412.237.2525; 412.237.2511 (Admissions)

CCAC Homewood-Brushnton Center
701 North Homewood Avenue
Pittsburgh, PA 15208-1806
412.371.1600

BOYCE CAMPUS

595 Beatty Road
Monroeville, PA 15146-1348
724.327.1327; 412.371.8651
724.325.6614; 412.325.6614 (Admissions)

CCAC Braddock Hills Center
250 Yost Boulevard
Pittsburgh, PA 15221-4818
412.271.0201

NORTH CAMPUS

8701 Perry Highway
Pittsburgh, PA 15237-5353
412.366.7000; 412.369.3600 (Admissions)

CCAC West Hills Center
1000 McKee Road
Oakdale, PA 15071-1099
412.788.7500

SOUTH CAMPUS

1750 Clairton Road (PA State Route 885)
West Mifflin, PA 15122-3029
412.469.1100; 412.469.4301 (Admissions)

CCAC Washington County Center
1500 West Chestnut Street
Washington, PA 15301-5857
724.223.1012

Summer 2015–Fall 2016 Academic Schedule¹

Summer Term 2015²

Memorial Day observed, college closed May 23–25
Independence Day observed, college closed July 3–5
First summer six-week session May 18–June 27
First summer eight-week session June 1–July 25
First summer ten-week session May 18–July 25
Second summer six-week session June 29–August 8

Fall Term 2015³

16-week fall term classes begin August 17
Labor Day observed, college closed September 7
14-week fall term classes begin August 31
Thanksgiving Break November 23–29
Classes end December 7
Finals week December 8–14

Spring Term 2016³

16-week spring term classes begin January 25
14-week spring term classes begin February 1
Spring break March 21–27
16-week classes end May 9
14-week classes end May 8
14-week classes Reading Day May 9
Finals week May 10–16

Summer Term 2016²

Memorial Day observed, college closed May 28–30
Independence Day observed, college closed July 2–4
First summer six-week session May 23–July 1
First summer eight-week session June 6–July 30
First summer ten-week session May 23–July 30
Second summer six-week session July 5–August 13

Fall Term 2016³

16-week fall term classes begin August 22
Labor Day observed, college closed September 5
14-week fall term classes begin September 6
Thanksgiving Break November 21–27
Classes end December 12
Finals week December 13–19

¹Dates subject to change

²Second summer introduces the new academic year.

³Most campus day courses and some evening courses are 16-week programs; College centers, online learning courses & most evening courses are 14-week programs.

Tuition & Fees

The published tuition rates are current as of the date of this publication. All rates are subject to change as approved by the CCAC Board of Trustees. For the most up-to-date information regarding tuition and fees, visit ccac.edu/payment/

Tuition & Capital Fees

Residency Status	Tuition	Flat Rate 12 to 18 Credits ¹	Capital Fee 1–11 Credits	Capital Fee 12 or more Credits
Allegheny County Residents	\$104.75/credit	\$1,571.25	None	None
Pennsylvania Residents Outside Allegheny County	\$209.50/credit	\$3,142.50	\$6.50/credit	\$78.00/semester
Out-of-state & Foreign Residents	\$314.25/credit	\$4,713.75	\$6.50/credit	\$78.00/semester

¹ Loads of 19 credits or more is the flat rate plus the prevailing per-credit rate times the number of credits over 18 credits. Example: 21 credits for an Allegheny County resident would be \$1,571.25 (flat rate) + \$314.25 [$\$104.75$ (per credit rate) x 3 (credits over 18)] = \$1,885.50

Registration Fees

Fee	Amount
College Fee: Full-time (12 or more credits) ²	\$50.40/semester
College Fee: Part-time(1-11 credits) ²	\$4.20/credit (\$50.40 maximum)
Online Learning Fee ³	\$20.00/online learning course
Health Careers Course Fee	\$20.00/credit (where applicable)
Laboratory Fee	Where applicable, amounts vary per course
Malpractice Insurance Fee ³	\$7.70/semester (where applicable)
Accident Insurance Fee ³	\$7.17/semester (full-time students only)
NCLEX Review Course Fee	\$300.00/semester for course <i>NRN-205</i> and <i>NUR-250</i>
Technology Fee	\$19.25/credit (no maximum)
Matriculation Fee ⁴	\$25.00 (first-time registered students, non-recurring, nonrefundable)
Student Services Fee	\$4.25/credit (no maximum)

Miscellaneous Fees

Fee	Amount
Graduation Fee ⁴	\$20.00 nonrefundable fee. This optional fee must be submitted with your application if you would like to receive a printed diploma and/or attend commencement ceremonies.
Credit by Examination ⁴	\$104.75/course
Returned Check Handling Charge ⁴	\$25.00/check
Official Transcript of Academic Record ⁴	\$4.00/copy
Check Stop Payment/Replacement Fee ⁴	\$20.00/check

² Non-credit students are exempt from the fee.

³ Nonrefundable after start of semester/term

⁴ Non-refundable

Once a student registers, he/she is responsible for payment of tuition and fees. Students dropping from a course(s), before the first day of the term shall be entitled to a 100% drop of tuition and refundable fee charges for the course(s) dropped. Students dropping from a course(s), from the first day of class and prior to the 15 percent point of the term, shall be entitled to a 75% drop of charges and 100% of refundable fee charges for the course or courses dropped. See the Academic Calendar for drop deadlines. See Appendix B for more information.

This rate schedule replaces all previous rate schedules published by the Community College of Allegheny County and is subject to change at the discretion of the college.

Tuition & fees are subject to change.

STUDENT NOTES

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The College

The Community College of Allegheny County (CCAC) is one of the largest institutions of postsecondary higher education in Pennsylvania. Each year, the college serves more than 28,000 credit students through 152 degree and certificate programs and offers thousands of students access to lifelong learning and workforce development courses. Incorporating a learning-centered environment committed to the future of the region, CCAC continues to expand its reach through innovative programming and accessible instruction offered via convenient day, evening, weekend and online courses. With four campuses and four centers serving Allegheny County and surrounding communities, CCAC endeavors to fulfill its mission to provide affordable access to quality education and offer a dynamic, diverse and supportive learning environment that prepares the region's residents for academic, professional and personal success in our changing global society.

General Education Learning Goals

CCAC's Learning Goals embrace the college's vision and definition of an educated person. The foundation for CCAC's General Education program is the College Vision of providing "an exemplary learning community where individuals can develop their full potential" in an environment of the highest standards "of academic excellence, technological advancement, innovative responsive programming and economic development." An educated person is one who acquires and continues to expand upon the following (Assessment of Student Learning Committee, July 2005):

- A broad range of knowledge upon which to make value judgments
- The skills to locate valid information and comprehend that information
- The ability to analyze critically and synthesize efficiently valid information
- The ability to listen carefully and to communicate effectively

CCAC's Learning Goals support the above definition of an educated person by uniting student learning experiences across all programs, courses and services at CCAC. The Learning Goals include essential knowledge and skills that help students to adapt to and to participate in global, cultural, social, political, economic, personal and technological change. The learning goals support students in achieving the following:

- Successful pursuits in higher education
- Successful careers
- Life-long learning

A CCAC student who graduates with an associate degree will have a level of proficiency comparable with the first two years of a baccalaureate degree in the following areas: communication; technological competency; critical thinking and problem solving; quantitative and scientific reasoning; culture, society and citizenship; and information literacy.

Communication:

Employ written and oral communication skills in order to convey clear and organized information to target audiences for specific purposes.

1. Generate communication that addresses audience and purpose.
2. Employ syntax, usage, style and tone appropriate to academic disciplines and professional environments.
3. Present ideas in an organized framework.
4. Develop ideas using concrete reasoning and clear explanation.

Technological Competency:

Use digital technology productivity software, discipline-specific application and technology-mediated collaboration tools to complete tasks.

1. Use technology resources to design, develop, present and publish information products.
2. Employ technology resources to conduct research, analyze data, solve problems, synthesize information and inform decision-making.
3. Use technology ethically and legally.

Critical Thinking and Problem Solving:

Identify problems, explore and prioritize solutions and revise priorities as a means for purposeful action.

1. Identify and summarize the problem and/or question in clear and concise terms.
2. Collect and review information from credible sources.
3. Consider the influence of context, assumptions and underlying bias of resources.
5. Synthesize and integrate information in order to support conclusions.
6. When supported, articulate findings and prioritize solutions appropriately.

The College (continued)

Quantitative and Scientific Reasoning:

Apply appropriate mathematical and/or scientific concepts and theories in order to interpret data and solve problems based on verifiable evidence.

1. Identify and extract relevant data from problems, experiments or projects.
2. Organize data into tables, spreadsheets, graphs, symbols, equations and other visual representations.
3. Analyze and interpret quantitative and qualitative data using mathematical/scientific concepts.
4. Evaluate evidence and decide if conclusions based upon data are valid and consistent.

Culture, Society and Citizenship:

Describe and explain behaviors and beliefs of various populations throughout the United States of America and the world.

1. Discuss the role of diversity and equity in the context of the United States of America and the world.
2. Review social and cultural conventions within their historical contexts.
3. Examine the interdependence of people in their respective environments.
4. Examine artistic and aesthetic values of various cultures.
5. Explain the nature of a democratic society.
6. Articulate the values of civic engagement, community involvement and the role of service.

Information Literacy:

Acquire, analyze, organize and evaluate information through technological and traditional means.

1. Determine the nature and scope of information needed for a specific task.
2. Critically evaluate and organize information sources and content.
3. Acquire and use information ethically and legally.

College Nondiscrimination Policy

The College does not discriminate and prohibits discrimination against any individual based upon race, color, religion, national origin, ancestry or place of birth, sex, gender identity or expression, perceived gender identity, sexual orientation, disability, use of a service animal due to disability, marital status, familial status, genetic information, veteran status, age or other classification protected by applicable law in matters of admissions, employment, services or in the educational programs or activities that it operates.

Employees, students, third-party vendors and guests may report conduct that is believed to be in violation of this Policy or applicable law by contacting the College's Office of Human Resources or the Civil Rights Compliance Officer /Title IX Coordinator.

Office of Human Resources
Office of College Services, 800 Allegheny Avenue
Pittsburgh, PA 15233
412.237.3001
pschwarz@ccac.edu

Civil Rights Compliance Officer/Title IX Coordinator
808 Ridge Avenue, Byers Hall 316
Pittsburgh, PA 15212
412.237.4430
smisra@ccac.edu

The college also prohibits and will not engage in retaliation against any person who in good faith reports a violation of this policy, makes a claim of discrimination or harassment, provides investigation of a potential violation of this policy, or otherwise engages in protected activity under the law.

Individuals with disabilities who are requesting accommodations should contact the Supportive Services for Students with Disabilities office at the campus that they will be attending. This publication is available in alternate formats. Questions may be addressed to the Civil Rights Compliance Officer.

Notifications of nondiscrimination and contact information can be found at ccac.edu/nondiscrimination/

History

In 1963, Pennsylvania passed the Community College Act, thereby providing the legal framework for the establishment of community colleges in the Commonwealth of Pennsylvania. One year later, the Allegheny County Board of School Directors met to begin the process of creating a community college in Allegheny County by voting to ask the county to be the local sponsor. The following year, a plan was submitted to the state, and on May 18, 1965, the "People's Bond Issue," requesting Allegheny County residents to approve funding for a community college, passed with 66 percent of the vote. Six months later, the Pennsylvania State Board of Education unanimously approved Allegheny County's application for the founding of a community college.

On December 8, 1965, the first 15-member college Board of Trustees was sworn into office. The board moved quickly to get the college up and running within a year. The college's first president, Kermit C. Morrissey, PhD, was named, the first two college locations were chosen and vice presidents were hired for those campuses. After sifting through over 700 applications, the college hired 59 full- and 16 part-time faculty members. On September 26, 1966, classes began at the new Community College of Allegheny County.

Allegheny Campus, established on Pittsburgh's historic North Shore and the college's only urban campus, and Boyce Campus, the campus serving the eastern suburbs, both opened in 1966. South Campus was established in 1967, with evening classes first held at West Mifflin-South High School. The following year, the campus was moved to McKeesport until its present complex was completed in West Mifflin in 1973. North Campus, which serves the greater North Hills, was established in 1972 and housed in leased facilities until moving into its present-day facilities in 1990.

To accommodate the college's rapid growth, CCAC expanded to include neighborhood centers. Acting as satellite facilities for the four main campuses, thousands of Allegheny and Washington county residents are served by four college centers strategically located throughout the region: Braddock Hills, Homewood-Brushton, Washington County and West Hills. Additionally, the college offers classes throughout the year at dozens of auxiliary locations.

For nearly 50 years, CCAC has offered the residents of Southwestern Pennsylvania a wealth of educational opportunities. In the college's first year, 1,505 students enrolled. Today, CCAC's enrollment tops 50,000, making CCAC one of the largest institutions of postsecondary higher education in the state. With educational programming expanded to include degree, certificate, diploma, transfer, workforce and professional development training as well as lifelong educational opportunities and access to 24/7 education through online learning options, the college is serving the region as never before.

As CCAC continues to expand its reach within the community, the college endeavors to fulfill its mission to provide affordable access to quality education, while offering a dynamic, diverse and supportive learning environment that prepares our region's residents for academic, professional and personal success in our changing global society.

Accreditation Statement

The Community College of Allegheny County is accredited by the Middle States Association of Colleges and Schools. The college curricula are approved by the Pennsylvania Department of Education. All of the health care programs offered by the college are separately accredited by appropriate regulatory agencies.

Governance

The decision-making process at the Community College of Allegheny County derives from three legal relationships: (a) the state legislation for community colleges (Act 484—the Community College Act), which empowers the Board of Trustees; (b) formal and informal relationships with the county sponsor; and (c) the collective bargaining relationship with the two employee unions, the American Federation of Teachers (AFT) and the Service Employees International Union (SEIU). The Board of Trustees has ultimate responsibility for the college while delegating college operations to the college president. The board also approves policies which govern the college's operation. Board members are appointed by the county sponsor. Membership represents local labor, business, county and community leadership. Much of the work of the board is accomplished through five board committees. CCAC staff members serve as resource persons for each committee.

The college president is responsible for college operations. A number of administrative committees make recommendations to the college president and are part of the daily administration of the college. In 1992, the American Federation of Teachers (AFT) defined governance contractually as “the development of policy.”

College funding is provided by the state of Pennsylvania, Allegheny County and student tuition.

Campuses & Centers

Allegheny Campus

Located in Pittsburgh, Allegheny Campus is the largest and only urban campus of the college. A unique blend of modern and historic architecture, the nine buildings that make up the campus sit on 10 acres in a neighborhood surrounded by Heinz Field, PNC Park and the Carnegie Science Center. The campus was expanded with the construction of the K. Leroy Irvis Science Center in 2013. For more information go to ccac.edu/Allegheny/

Boyce Campus

Boyce Campus is just 15 miles east of downtown Pittsburgh in Monroeville and is conveniently accessed by PA Route 376 (Parkway East), PA Route 22, PA Route 48 and the Pennsylvania Turnpike. Situated on 120 wooded and rolling acres, the modern six-story, single-building campus features a park-like setting and commanding views of the countryside. For more information go to ccac.edu/Boyce/

North Campus

North Campus is conveniently located in the suburb of McCandless, approximately 12 miles north of downtown Pittsburgh. Conveniently located in one building, North Campus draws students primarily from Pittsburgh's northern and western suburbs. For more information go to ccac.edu/North/

South Campus

Set among 212 rolling acres in West Mifflin, South Campus serves Allegheny County's southern communities and the Mon Valley region. The campus is located off PA Route 885 not far from Century III Mall and is easily accessed by both PA Route 51 and PA Turnpike 43 as well as by public transportation. Contained within one six-story structure, the campus hosts numerous lecture halls, classrooms and labs in addition to many student services facilities, including the college's only radio station. For more information go to ccac.edu/South/

AT EACH CAMPUS YOU WILL FIND:

- Bookstore
- Cafeteria
- Gymnasium and auditorium
- Computer labs

- Library and learning services, including tutoring, Learning Commons and Math Cafés
- Programs for academic credit, workforce/professional development and non-academic, non-credit courses
- Student services, including Job Placement and Career Services Center and Support for Students with Disabilities
- Student life, including sports and fitness center
- Safety and security

Centers

CCAC has four centers, each affiliated with a campus. Each center provides services that suit the needs of the neighborhood.

Braddock Hills Center

The Braddock Hills Center is located approximately eight miles east of Pittsburgh in the Braddock Hills Shopping Plaza. The center is convenient to two major bus routes, provides ample free parking and is just a few minutes from the Forest Hills exit (8A/I-376E) and Wilkinsburg exit (8B/I-376W) on the Parkway. For more information go to ccac.edu/Braddock_Hills_Center.aspx/

Homewood-Brushton Center

Situated on North Homewood Avenue, the Homewood-Brushton Center is uniquely positioned to serve the city's east-end neighborhoods and outlying suburbs. For more information go to ccac.edu/Homewood-Brushton_Center.aspx

Washington County Center

The Washington County Center is located in the Washington Crown Center just off PA Route 40E, approximately 30 minutes from downtown Pittsburgh. Washington County Center is the college's only center operating outside of Allegheny County. For more information go to ccac.edu/Washington/

West Hills Center

West Hills Center is located in a 150,000 square-foot facility in North Fayette Township. The West Hills Center houses high-bay areas for automotive, HVAC, welding, advanced manufacturing and other trades-related programs. ccac.edu/West_Hills_Center.aspx

College Services & Facilities

College Facilities, Classrooms & Services

The college has over one million square feet of modern instructional, support, study and recreational space to support the college's 152 academic programs. Classrooms range from small seminar rooms to large lecture halls with the majority of rooms designed to service 20 to 30 students. Many of the college's laboratory and lecture rooms are equipped with dedicated instructional technology designed to support and facilitate learning. Rooms so equipped include a dedicated computer, access to the college computer network and the internet, large projection screens and other associated technology.

The college also provides a sizable number of modern laboratories in the natural and physical sciences, nursing and allied health, computing, food sciences, the arts and automotive and technical career areas. In addition to theatres and auditoriums, there are recreational facilities including gymnasiums, health and fitness centers, aerobics and weight areas at each campus. Allegheny Campus also offers access to racquetball courts.

CCAC hosts intercollegiate National Junior College Athletic Association (NJCAA) men's and women's sports teams including baseball, basketball, bowling, cross-country and golf. There are club teams, including hockey and softball. In addition, students have access to more than 100 clubs and organizations as well as four honor societies.

The college offers at each of its four campuses career services and job search assistance, transfer assistance, financial aid, personal and career counseling, tutoring and supportive services for individuals with disabilities.

CCAC Safety and Security, under the direction of the four campus presidents, is comprised of four full-time directors, one at each campus, who manage a team of more than 60 contracted security guards. Together, they devote more than 115,000 hours annually to ensuring the safety of all members of the CCAC community. For more information go to ccac.edu/CCAC_Safety_and_Security.aspx or use the "safety" link found on the website footer.

College Bookstores

CCAC's five bookstores, located at each of the four campuses and the West Hills Center, provide textbooks and other instructional materials needed for classes. Bookstores are open Monday through Friday with specific hours of operation posted at each campus store and on CCAC's website at ccac.edu/Bookstores.aspx. The bookstores require a CCAC student ID and CCAC class schedule to serve students. As an added convenience to students, textbooks may be purchased online and delivered to the student. Please visit www.ccac.bkstr.com to see offerings available for purchase online.

Complete textbook information, including new and used price, title, author and ISBN number is available through CCAC Central e-Services when students search for course sections. Go to **ccac.edu**, click on "CCAC Central e-Services" at the bottom of all CCAC web pages, log in using student ID and password and click on "Search for Sections." The textbook information will be part of the course and section information that will be displayed for the course and section students select. Textbook information is not always available for all courses.



Textbooks can be returned with certain restrictions. Students should check their bookstore location.

CCAC bookstores conduct book buybacks throughout the year. CCAC makes every attempt to buy back as many books as possible but cannot guarantee all books will be repurchased. For more information go to ccac.edu/Bookstores.aspx

Computing Facilities

Computers for student use are available at each campus in the library, learning center, computer center and in computer classrooms. At the campus computer center, students can access word processing, email, the Internet and a variety of software packages for completing coursework. Hours for the computer labs at each campus will vary and are posted to the college website at ccac.edu/Computer_Labs.aspx

Libraries

Campus libraries offer students academic assistance and a broad range of resources to support classroom instruction. Librarians are available at each facility to provide guidance in the completion of research assignments and instruction in the use of library resources. Each campus library offers on-site and electronic access to a variety of books, periodicals and other materials such as audio-visual materials, online databases and access to the Internet.

The four library collections are electronically linked allowing students to search and request books and audio-visual materials from one campus to another. Material not available at the campus libraries can be requested through an interlibrary loan. Photocopy, microform and audio-visual equipment is available for student use. Quiet study areas can be found as well as group study space to foster student interaction. Find more about the CCAC library system at ccac.edu/Library/

Academic Planning

Where to Begin?

Students come to CCAC for a variety of reasons and at various times in their life. Some seek a degree, while others want to upgrade employment skills or simply take courses for personal enjoyment. All are valid reasons for attending CCAC.

The first step is to assess goals, abilities and interests and develop an educational plan. The community college provides complete academic advising, counseling and career planning and job placement services to help answer these and other questions:

- What do I want from the community college?
- What kind of career do I want in the future?
- Will this career bring me the rewards I want in life?
- How much education does this career require?
- How long will it take for me to acquire this education?
- What is the most effective way to begin this plan?

Whether students are seeking personal enrichment, preparing to transfer to a four-year school or expanding their career skill base, CCAC has services and resources available to help. Almost all of the college's academic programs may be started at any of the four campuses or college centers, but specific courses required in a program may be offered at only one of the college campuses.

Certificate/Diploma

Many of the programs at CCAC have a certificate/diploma option. Credit values associated with certificate and diploma awards vary from 15 to approximately 30 credits and can be completed in four to 12 months of full-time study (longer for part-time students). The credits that students earn to receive a certificate award can often be used toward an associate's degree in the same program. Many certificate and diploma programs also appeal to students with previous degrees who wish to acquire new employment skills.

Students in many programs are eligible for employer sponsorship. In this process, the employer arranges tuition billings through the college or tuition reimbursement after grades are available for improvement courses in work-related skills. Many courses are scheduled in the evening hours to allow students to continue their education and work at the same time.

Associate Degree

Associate of Arts and Associate of Science degrees include specific coursework along with a core of general education courses. Associate degrees require at least 60 credits and take 15–24 months of full-time study. Students who plan to enter full-time employment after attending CCAC should select a career program from among those listed under the following areas: arts & humanities; business; education, social & behavioral sciences & human services; health; science, technology, engineering & mathematics; and trades. The program chosen will determine the required courses taken at CCAC. With the knowledge and skills from these courses, after graduation, students are better able to begin their first job.

A well-developed educational plan is an important first step toward transfer to a four-year institution. Students planning to continue at a four-year college or university should begin working with a counselor. The university parallel and transfer programs prepare students for college studies beyond the associate degree. Programs indicated by the keystone logo are designed to transfer seamlessly to Pennsylvania State System of Higher Education (PASSHE) institutions as well as and a few private institutions.



Counselors can provide information about the colleges and universities that have formal articulation agreements with CCAC to make transfer easier. To review these agreements, go to ccac.edu/articulation/

Academic Planning (Continued)

All degree programs share a common core of general distribution education courses. These courses satisfy the basic requirements of many degree programs. In some cases, degree programs can be changed during the first year of study without losing any credit toward graduation for the courses completed.

What to Expect From Your Educational Plan

College graduates should have an awareness of the world around them, as well as general knowledge and skills in specific areas. The CCAC learning environment is designed to provide students with experiences necessary to explore critical areas of knowledge. Some of these areas are listed below.

- **The Arts:** The arts (art, dance, music and theatre) engage the imagination, foster new ideas, help develop discipline and build self-confidence.
- **Computer Competency:** Computer literacy is an important tool for acquiring and organizing knowledge and problem solving.
- **English:** Competence in English helps individuals communicate attitudes and ideas while expanding thoughts and imagination.
- **Foreign Language:** The study of a foreign language promotes greater awareness of cultural variety and improves communication with people from other countries.
- **History:** Knowledge of the past provides a basis for understanding our present and making assumptions about the future.

- **The Humanities:** Humanities promote an understanding of societal values and an appreciation of their expression through art, language, literature, music, philosophy, speech and theatre.
- **Mathematics:** Mathematics is the indispensable language of science, technology, business and finance. Students need a knowledge of algebra, geometry and functions to succeed in most fields.
- **The Sciences:** College students must study the sciences in order to function effectively in a society shaped by rapid technological change.
- **The Social Sciences:** Problem solving requires the analytical skills learned in the social sciences. Preparation in anthropology, economics, geography, history, political science, psychology and sociology helps individuals function more effectively on a personal level and in our modern technological society.

What is Prerequisite and Corequisite Instruction?

- **Prerequisite Instruction:** Many courses at the college require prerequisites. Prerequisites are skills and knowledge needed to begin a course and are listed with each course description. A prerequisite may be a high school course, a course or courses at the college or other equivalent educational experiences. If students are uncertain whether they have the skill and knowledge to enroll in a course, contact an advisor in the discipline.
- **Corequisite Instruction:** Two or more courses that should be taken at the same time are corequisites. You learn information in each class that will help you in the other.

Developmental Education

Developmental education includes classroom instruction, self-directed laboratory work, individual tutoring, counseling and academic advisement. The purpose of Developmental Education is to promote basic skills in mathematics, reading and writing and uncover any other learning needs. CCAC offers two levels of developmental instruction in English, mathematics and reading. To ensure a solid foundation for college study, developmental courses require a C grade or better to register for the next course in the series or to use this course as a prerequisite for a course in another discipline.

Developmental Courses

Developmental courses are designed to help students learn the skills that are necessary for college work. Many students

at the college have found that by completing developmental courses they were better prepared to deal with college learning. Developmental courses cannot generally be counted toward graduation for an associate degree, certificate or diploma; however, such courses at the 100 level may be used as general electives.

Enrollment in these courses affects only students' eligibility for the State Grant Program (PHEAA), which requires full-time enrollment in college-level courses. State assistance eligibility is postponed until this requirement is met. Enrollment in developmental courses does not affect eligibility for Pell grants, CCAC grants or loans.

Developmental Education (Continued)

Foundation Skills

To help students succeed, CCAC faculty have examined the level of difficulty in their classes and the experiences of students who have taken these classes in the past. Their efforts mean that the skills needed for success in the classroom are well understood. These foundation skills are:

- **Reading:** the ability to comprehend and summarize main and subordinate ideas in written textbooks, to recognize different purposes and methods of writing and to evaluate the ideas of the text author and the instructor.
- **Writing:** the ability to write standard English, to select and organize ideas into coherent paragraphs, essays and research reports.
- **Speaking and Listening:** the ability to exchange or present ideas and to ask questions in standard English.
- **Mathematics:** the ability to add, subtract, multiply and divide natural numbers, fractions, decimals and integers. Students should be able to use the mathematics of integers, fractions and decimals; ratios, proportions and percentages; roots and powers; algebra and geometry. They should also be able to formulate and solve a problem in mathematical terms.
- **Reasoning:** the ability to propose evaluated solutions to problems. Students should be able to draw conclusions from information using inductive and deductive reasoning. They should also be able to recognize fallacies in reasoning in order to distinguish between fact and opinion.
- **Studying and Test Taking:** the ability to set goals and priorities consistent with course objectives and to manage time efficiently. Students should be able to use resources outside the classroom in the learning process. They should be able to synthesize ideas, apply them to new situations and learn from criticism.

Courses designed to develop college reading and study skills include *DVS-060 College Academic Strategies*, *DVS-070 College Reading 1*, *DVS-101 College Reading 2* and *DVS-103 Advanced Reading and Study Skills*. These help students acquire strategies essential for college study and provide instruction in basic comprehension and vocabulary skills. Students are required to apply various reading and study strategies in understanding textbook and supplementary readings. In all of these courses, reading levels and study habits are assessed. Strategies are then designed to develop the skills needed for a successful college experience. The skills developed include taking notes, doing research, studying for examinations, reading efficiently and increasing vocabulary.

Courses designed to develop college writing skills include *ENG-089 Basic Writing Techniques* and *ENG-100 Basic Principles of Composition*. *ENG-089* helps develop skill in short and focused writing. This course is necessary if students have had little writing experience or if they have been away from the classroom for a long time. *ENG-100* is a continuation of *ENG-089*. In this course, students will practice organizing, writing, revising and proofreading short essays. Students will learn the skills necessary for writing unified paragraphs that develop a main idea. These skills are needed for success in all college classes.

Courses designed to develop college mathematics skills include *MAT-080 Arithmetic Fundamentals* and *MAT-090 Algebra Fundamentals*. *MAT-080* reviews arithmetic skills, including fractions, decimals, percents and ratios and begins the development of skills in algebra and geometry needed for higher studies in mathematics. *MAT-090* is a continuation of *MAT-080*. *MAT-090* reviews algebra skills, including polynomial and rational expressions, factoring and solving equations and word problems. Students need these skills to be successful in all college mathematics courses.

Academic Programs

Academic programs at CCAC are designed to prepare students to either seek immediate employment or continue with their education at a four-year college or university.

CCAC offers certificates and diplomas that provide focused coursework in a specific career field. Most of the certificate and diploma programs are designed for students with little or no experience in the field, but a few certificates in health and the social/behavioral science provide additional skills and credentials for people already working in a given career.

Many degrees build on certificate and diploma programs with general education courses providing students with associate degrees, opening a wide range of personal and employment opportunities.

Many other students begin their academic careers at CCAC with the intention of transfer to earn a four-year degree. Those students can enroll in one of the CCAC transfer programs if a four-year transfer college has not been identified and follow the curriculum as outlined or work with one of the counselors to identify a specific four-year college's curriculum.

Many of the CCAC programs have been aligned with the curriculum at four-year colleges through articulation agreements. As of January 2014, CCAC has 125 articulation agreements with 29 local and national colleges and universities. Several more agreements are being reviewed. CCAC encourages students to work with counselors as early as possible to explore these agreements as a path to a four-year degree.

CCAC is also part of the Pennsylvania Transfer and Articulation Center (PA TRAC) and its efforts to align specific community college courses and programs with the Pennsylvania State System of Higher Education (PASSHE www.passhe.edu/Pages/default.aspx) and a few private institutions to ensure the smooth progression from CCAC to those institutions.

For more information about Pennsylvania Transfer and Articulation Center (PA TRAC) go to www.pacollegetransfer.com/Home/ A list of CCAC courses that are approved for the PA track framework is found at the end of the Course Description section of the catalog.

Agreement details can be found on the CCAC website at ccac.edu/articulation/

Earning a Four-year Degree at CCAC

CCAC and Indiana University of Pennsylvania (IUP) have developed collaborative degree program in Business Management, and education (Middle Level Teacher Education Program, Math Specialization and Middle Level Teacher Education Program, Science Specialization. All IUP classes are taught on a CCAC campus. CCAC is also exploring collaborative programs with other four-year institutions. For more information go to ccac.edu/articulation/

More information is available by contacting the Admissions office, the Registration and Advisement office or the Transfer office at any of the four campuses.

Career Programs

For students who plan to enter full-time employment directly after graduation, CCAC's career programs provide clinical, cooperative education and apprenticeship experiences as well as classroom instruction. Credits earned in many of these programs are transferable to four-year institutions. To see the programs offered at CCAC, refer to the "Program Explanation" section in this catalog.

Honors Program

The CCAC Honors Program unites academically outstanding students and faculty in the pursuit of academic excellence and fosters the development of scholarship, communication and leadership skills in the students. Students earn Honors credits through Honors-designated courses and/or Honors-by-contract with a faculty mentor in a regular course in which they complete an enrichment project of their own design, following guidelines set by their mentor.

Honors students further enhance their academic experience through participation in Honors cultural activities and by attending regional and national Honors conferences. Other benefits include notation of Honors course credits on academic transcripts, Honors scholarship money in the form of in-county tuition reimbursement for Honors courses (if students are not fully funded from another source), the opportunity to compete for four all-tuition Leadership in Honors Scholarships for returning Honors students and wearing Honors cords at graduation. Honors students earning 12 or more Honors credits are awarded an Honors degree and wear an Honors medallion at graduation.

Honors Program (continued)

To qualify for the Honors Program, applicants must be enrolled in an associate degree program and be eligible for college-level *English Composition 1 (ENG-101)* and *Algebra Fundamentals (MAT-090)* or above, either by placing directly into them through the CCAC placement tests or by completing required developmental courses in English, Developmental Studies, and mathematics. In addition, applicants must meet eligibility criteria based on their status: Current CCAC or transfer students must have nine credits of college-level coursework and an institutional GPA of 3.50 or higher (transfer students must submit a postsecondary transcript with their application). Students with GPAs between a 3.25 and 3.49 may make a special application with a letter of recommendation from a CCAC faculty member and an interview with the campus Honors coordinator. High school students must meet two of the following criteria:

- have a high school GPA of 3.50 or higher;
- be in the top 10 percent of their high school graduating class;
- have an SAT score of 1180 or greater or have an ACT score of 26 or greater; or
- be a member of the National Honor Society (high school applicants must submit a high school transcript with their application).

To remain in good standing in the program, Honors students must maintain an institutional GPA of 3.00, earn a minimum of three credits in Honors each academic year and participate in Honors activities. For more information go to ccac.edu/honors/

Dual Enrollment

The Dual Enrollment program at CCAC provides high school students with the opportunity to earn college credit while still in high school. Students can jump-start their college career and experience the college classroom.

Students wishing to take advantage of the Dual Enrollment program must have the approval of their high school and their parents. Dual Enrollment students must take CCAC college placement tests if they plan to enroll in either an English or a mathematics course. Students planning to enroll in a course with English, reading and/or mathematics prerequisites are also required to take placement tests. A transcript of the student's high school grades must accompany the application. Applications for Dual Enrollment are available in the Admissions offices or on the CCAC website, at ccac.edu/dual-concurrent-enrollment/

Act 48

CCAC is an approved provider for credit level Act 48 courses in the Commonwealth of Pennsylvania. Educators wishing to take CCAC courses for Act 48 should check their course selection with their school district. Educators who are not currently teaching for a specific school district should contact the school district in which they live for recommendation on Act 48 coursework. When registering at CCAC, the educators should identify their interest in Act 48. CCAC will code their registration for reporting to the Commonwealth at the end of the term. Act 48 students can review course offerings at ccac.edu/48/

Cooperative Education Program

The Cooperative Education program enables students in specific majors to gain academic credit for work experience by applying classroom instruction directly to related work activities. Through cooperative education, students gain experience in the latest techniques, procedures and equipment used in business, industry and the public sector.

Close coordination and supervision by the college insures that the co-op program becomes a viable learning opportunity. Academic credit awarded depends on the number of hours worked, the number of credits needed and the academic major.

To qualify for the Cooperative Education program students must have completed at least 30 credits with at least 12 credits in their major field, maintained at least a 2.50 GPA and attend the college the semester before beginning the program. Additional departmental requirements may apply. No student may enroll in cooperative education programs without formal faculty approval. Interested students should register on the CCAC Job Placement Central Job Bank at www.collegecentral.com/ccac/ and apply for admission at least one term before enrolling in the program.

Students approved need to register and pay for Cooperative Education credits. Internships, not for credit, are also available. Interested students can contact the director of Job Placement and Career Services on their campus to initiate the process. For more information go to ccac.edu/Cooperative_Education_Guidelines.aspx

Independent Study

Independent study allows students to explore academic topics not available in existing CCAC or Pittsburgh Council of Higher Education (PCHE) curricula. Independent study is an enrichment experience designed to meet the individual academic interests of students. Independent study cannot be used to take/replace any existing course currently offered by CCAC and listed in the current college catalog. Independent study must be a free elective that cannot be substituted for any required course. Permission by the Dean of Academic Affairs is required for the faculty to enter into an independent study contract with the student. An independent study contract describing the course of study and assessment/evaluation procedures must be filed with the Academic Dean by the end of the first week of classes. The student must register for the independent study course.

Independent study courses are identified by the 300 series of course numbers. Only six credits of independent study may be applied toward an associate degree and three credits of independent study toward a certificate or diploma. Students are advised that while independent study courses count toward their program degrees or certificate completion at CCAC, often these independent study courses may not be accepted as credit for transfer to other institutions of higher education.

Community Education

Community Education programs offer wide-ranging and accessible courses for personal and professional enrichment and problem solving at home and at work. Students may enroll individually or through businesses, community groups or professional organizations. Classes are offered at convenient times, on weekdays and weekends, at a variety of Allegheny County locations. For more information go to ccac.edu/community-education/

Workforce Development

A variety of workforce development training solutions are offered through the college to strengthen regional workforce investment through the growth of skilled labor training, business development and grant writing efforts.

Through CCAC's Workforce Development division, current employees who need to maintain or upgrade their knowledge base can access individual learning opportunities at a variety of locations, with multiple courses available online. Corporations, local agencies and non-profit organizations can gain customized, cost-effective training sessions offered on-site in that organization's facility.

Attorneys, accountants, real estate agents, human resource specialists and insurance professionals can access required professional continuing education credits through the college, an accredited course provider. Regional safety providers, from EMTs to firefighters and others, can be trained or recertified through a large variety of available programs. Local and regional healthcare organizations can access staff training and preparation for board exams at their locations.

The Community College of Allegheny County's Workforce Development, through a grant from the US Department of Labor Trade Adjustment Assistance Community College and Career Training (TAACCCT) grant, is offering training programs in Advanced Manufacturing to build a Mechatronics Career Pathway. In addition, the R.K.Mellon/Renewable Energy Grant is a Workforce Development initiative dedicated to growing the college's involvement in the region as the green/energy training education provider of choice growing partnerships with local unions as well as regional leaders in the conservation movement. Go to ccac.edu/workforce/ for more information about Workforce Development

Community Services (Community Training & Development)

Community Services seminars, workshops and courses are offered to meet the needs of individuals and groups in the community. Some offerings are designed to increase the skills of municipal employees and the effectiveness of board members of nonprofit and/or public agencies. Others teach skills to persons who are physically, cognitively and emotionally challenged and to those who assist persons with challenges. Still other offerings are designed for adults re-entering the workplace or for senior citizens. The college cooperates with other educational institutions and other organizations in Allegheny County as it designs and offers these programs. For more information about Community Services go to ccac.edu/Human_Service_Programs.aspx

Online Learning

Online Learning Programs and Guidelines

Online Learning refers to the delivery of classroom instruction using nontraditional formats and methods. It allows a student to craft a class schedule that fits one's life and is a wonderful alternative for those who need flexibility due to job and family responsibilities. Instruction is provided through Internet courses, telecourses and hybrid courses. All courses are offered for credit and applicable to academic requirements for an associate degree and some certificate programs. Course credits are transferable should the student choose to pursue a bachelor's degree. Students wishing to transfer should also work with a CCAC counselor. Tests are taken online or at a proctored testing site. Students are expected to meet all deadlines as set by the course instructor and academic calendar.

Online Learning courses require students to plan carefully and make necessary adjustments in order to succeed in this learning environment. Click the "Online Learning" link on ccac.edu for course descriptions, technology requirements, testing, guidelines and other valuable information. Successful Online Learning students are self-motivated, work well on their own or in groups and are able to meet deadlines.

Here is the profile of the successful Online Learning student:

- has discussed Online Learning with an academic advisor;
- is computer and Internet literate (familiar with the mouse, email, downloading, email attachments, browsers and word processing);
- works independently;
- has good planning and organizational skills;
- is comfortable meeting deadlines;
- has had all course prerequisites; and
- meets all technical requirements for the course.

Students should take the online self-test to determine if Online Learning courses are a good choice for them. For more information go to ccac.edu/Self_Test.aspx

Types of Online Learning

Internet Courses: Generally, all teaching and learning takes place via the Internet. Students interact with the instructor and classmates through a course website. Learning activities

and assignments are completed according to the instructions and schedule posted by the instructor. Some instructors require students to take their exams at CCAC testing sites or with an approved proctor. Please check with the instructor for this information.

Students taking Internet courses must have access to a computer with an Internet connection. Students must also be computer literate and be comfortable using software, email and performing other activities on the Internet. Some courses have specific technical requirements or indicate that students must own specific software packages to take the course. Students should inquire about what is needed before registering for the course. For more information about Online Learning go to ccac.edu/online/

Hybrid Courses: Hybrid courses combine traditional classroom instruction with online collaboration and learning. Students attend class at a CCAC campus or college center on a regular but less frequent schedule (60 percent minimum of standard class time plus final exam time plus class breaks if the class exceeds 100 minutes at one time). The balance of course time is dedicated to self-directed and scheduled online collaboration and learning activities such as email, threaded discussion and chat.

Telecourses: Telecourses are video-based courses delivered via DVDs (video cassette tapes are available on request). Telecourses are complete and integrated instructional systems that generally include DVDs, a textbook, a study guide and other instructional materials.

Students must have access to DVD player. Communicating with the instructor is essential; therefore, students must have a telephone number and permanent address where they can be reached.

Online Learning Testing

Please note: Taking course exams with a proctor at either the CCAC testing site or a non-CCAC testing site is a requirement of some Online Learning classes. Other Online Learning classes may require students to take exams online. For more information go to ccac.edu/Proctoring_Information.aspx

Program Explanation

Programs at the Community College of Allegheny County provide instruction in general education and specialized knowledge.

Basic Skills

Effective college learning requires competency in reading, writing, speaking, listening, mathematics, reasoning and study skills. Computer literacy is recommended as well. Part of each program at the college develops these skills.

General Education

Sometimes called distribution requirements, each Community College of Allegheny County program contains a number of courses that introduce the student to a common core of knowledge.

Specialized Knowledge

Called the program core and electives in the college program, a number of courses provide knowledge and skills for the student's particular educational goal, whether the student decides to continue education at a four-year school, to seek employment after graduation or to pursue both goals.

This distribution of required college courses determines whether the program selected leads to an Associate of Arts or Associate of Science degree.

Degrees Awarded

The Community College of Allegheny County offers the Associate of Arts, Associate of Science and Associate of Applied Science degrees. Both the Associate of Arts and Associate of Science degrees can prepare the student to continue education at another college. Students should work with a CCAC counselor and the transfer institution when selecting a degree path at the college.

Associate of Arts degrees require more than twice as many courses in social science, English and mathematics as the Associate of Science degree. Generally, this means that the student is building a broader base of knowledge and intends to pursue more specialized instruction after transferring to a four-year college.

Associate of Science/Associate of Applied Science degrees require many more courses in the area of specialized knowledge. Generally, the student intends to work in a chosen field immediately after graduation or enter a field of study that requires specialized preparation before beginning studies at a four-year college.

Certificates/Diplomas

Certificates and diplomas provide intensive training in a specialized field. Credit values of the certificates and diplomas vary, but many can be finished in one year if a student attends full-time. Credits earned in the certificate and diploma programs often can be used in earning an associate degree in the same field. Certificate and diploma programs improve chances for early employment and allow the student to continue studies as a part-time student to complete the degree requirement while working.

Elements of a Degree Program

The individual courses required for any degree program are listed in the program section of this catalog.

Core Courses

These courses come from the program core requirements, general education requirements and other disciplines. Generally, they should be completed in sequence so the student will be prepared for advanced courses.

Restricted Electives

These courses may be made up of both program core courses and general education courses. On occasion, the specific program will include courses from other disciplines which are meant to complement program core courses. They are classified as electives because the student will have a choice of two or more courses or two or more groups of courses from which to select. If a student is planning transfer to a four-year college or university, it is important that the student consult with a counselor and the other college's catalog.

General Electives

Programs may require a minimum number of general elective credits. The student may select these courses by referring to the section of the catalog called "Description of Courses."

Degree Requirements for Graduation

All three of the associate degrees (AA, AS and AAS) require that the student earn a minimum of 60 credits, satisfy all the stated requirements of their program and have a cumulative GPA of 2.00 or higher. (See *Limitations on Sources of Credits for Graduation*.)

Electives to Meet Degree Requirements

All college programs require the student to enroll in courses that are called electives. Electives broaden a college education and deepen the student's understanding of a specific area of activity while fulfilling the specifics of a program. Electives should be chosen with the help of an academic advisor or a counselor.

Credit course offered by the college can be considered an elective, subject to the following restrictions:

- A course can count toward graduation only when the student has satisfied the prerequisites for that course.
- A course can only count once toward graduation and must satisfy some elective with the student's program.
- Electives may consist of courses transferred from another accredited college or university or advanced standing credits earned through USAFI, CLEP or Advanced Placement Tests (AP) of the College Entrance Examination Board or other nationally recognized examinations approved by the college. For more information go to ccac.edu/Advanced-Placement/

Program Requirements

Each student at the college is required to declare a program of study. All degree and certificate programs are published in the college catalog and on the college website. If a student is not interested in a specific program of study, the following program should be declared.

If...

Student is unsure of program selection or wishes to obtain a generalized degree

Student is taking classes at CCAC specifically to transfer to their home college or university

Student is taking course(s) for personal enrichment and is not pursuing a degree or certificate program

Select program...

“089-GENERAL-STUDY-AS”

“001-NON-CCAC-STUD”

“800-NON-DEGREE”

A student will declare a program when completing the Application for Admission to CCAC. When a program is declared, the student will be responsible for meeting the requirements outlined by the catalog at the time of application or change of program. The advisor and student will plan the academic program based on the requirements of that catalog. It is recommended that the student meet regularly with the advisor to review progress towards the degree or certificate. If a student is receiving financial aid, the Financial Aid staff will confirm that the selected program is eligible for financial aid. Additionally, a student on financial aid will be required to make satisfactory academic progress in the selected program within a specified time frame to remain eligible for financial aid. Program requirements for limited enrollment programs will be enforced as of the catalog term when the student is accepted into the program.

A student may change his/her program of study in consultation with an academic advisor. If changed before the end of the add-period for the term, the new program

will be effective for the current term. Otherwise, the new program will be effective for the following term.

Academic programs may be updated at any time by the department to meet changing industry practices, licensing requirements or technology changes. If a student returns to the college after a break in attendance (one full year or more), the student must change his/her program to follow the current requirements. A continuing student can follow the requirements in place at the time of their declaration of the program.

If the college discontinues a program completely, students currently assigned to the program will be allowed to complete the requirements of the degree or certificate. This option will remain in force for continually enrolled students for the duration of time expected for the program (normally two years for an associate degree or one year for a certificate).

Any student who does not attend CCAC for two years will be required to reapply to the college.

Basic Skills and General Education Core Associate of Arts		Minimum Credits	Basic Skills & General Education Core Associate of Science		Minimum Credits
English Composition		6	English Composition		6
English Electives		6	Humanities		3
Humanities		6	Mathematics		3
Mathematics		3	Science		3
Science		3	Social Science		3
Mathematics or Science		3	Computer Skills ¹		
Social Science		3	Program Core and Electives		42
Computer Skills ¹					
Program Core and Electives		21	Total Minimum Credits Required²		60
Total Minimum Credits Required²		60			

¹The Community College of Allegheny County recommends that all graduates be computer literate in their field of study. Academic advisors and program faculty can outline the various options for developing computer literacy.

²Specific courses and credits required in each program are outlined on the appropriate program page. All courses should be chosen in consultation with an academic advisor and students can consult the “Course Descriptions—Course Description Explanations” section for the catalog for courses that satisfy each category.

Learning Experience

Instructor

Education at the Community College of Allegheny County begins with the instructor in the classroom or online. Rules and procedures for developing a productive academic partnership with the instructor are detailed in the “Academic Rules and Regulations” section of the catalog.

CCAC has a talented and creative faculty interested in teaching students who desire to learn. Of the 244 full-time faculty, approximately 82 percent have a master’s degree or higher in their field. Many others have additional certifications and licenses in specialty areas and continue to develop their professional skills through workshops, seminars, college coursework and related work place experiences. The college’s talented adjunct faculty, selected from qualified, local professionals, display high levels of expertise in the subjects they teach.

Courses & Schedules

Each term the classes being offered are listed in the credit course magazine published three times per year and on ccac.edu. Course descriptions are listed in the catalog and through program pages on the CCAC website and through “Search for Sections” on CCAC Central. Descriptions include course alpha codes and numbers (the course identifier), titles, credits and class hours and any pre- or corequisite instruction required. The credit schedule assigns each class a section identifying specific campus or center location, dates, times, room and instructor for the class. Because students have different learning styles and learn best when a variety of teaching methods are used to present information in the classroom, CCAC delivers instruction in a variety of ways. For more information go to ccac.edu/Course_Information_and_Schedules.aspx



For most of the courses listed in the catalog, teaching techniques include lectures, labs, discussion, student and media presentations, self-paced or computer-assisted instruction, online instruction and field trips. These techniques are noted in the course descriptions.

SDS-102 Academic & Personal Development

Any first-time*, full-time, associate degree-seeking student who places into all three developmental areas (including ESL) regardless of the level, must take *SDS-102 Academic and Personal Development* in the first semester.

*First-time is defined as attending CCAC for the first time.

The developmental areas are within English, English as a Second Language and mathematics, as well as Developmental Studies.

SDS-102, Academic and Personal Development, is a course in the techniques for becoming a successful student. Coping skills and strategies for a positive college experience are emphasized. Topics include stress and time management, academic survival skills, interpersonal relationships and community and campus resources.

Through the discussion of these topics, students will identify services and service providers that will assist in their development as college students. In other words, students will learn how to connect to the CCAC community. Students will also gain a greater understanding of themselves, identify strengths and work at improving weaknesses. Students will begin to identify behavioral characteristics of “ideal successful” college students and apply such behaviors in their daily routines.

Lecture Classes

For lecture classes, the college awards one college credit for every 15 hours in class in a term. In a 16-week fall or spring term, a three-credit course meets three hours a week. Meetings are prorated for shorter sessions.

Laboratory Classes

Some classes, especially those in the sciences and technologies, provide laboratory experiences and demonstrations. In laboratory classes there is a high degree of “hands-on” experience to help students learn course material. Labs are listed in the course descriptions.

Credits assigned to laboratory classes vary. The college awards one credit for every 30 to 45 class hours in a term. In a 16-week fall or spring term, a one-credit laboratory meets two to three hours a week.

Studio & Activity Classes

Some classes, especially those in the arts and physical education, provide students the time, setting and materials to practice a skill under the guidance of a professional. Activity classes are described in the catalog. Credits assigned to these studio or activity experiences vary. The college awards one credit for every 30 to 45 class hours in a term. In a 16-week fall or spring term, a one-credit class meets two to three hours a week. This schedule may vary during the term depending upon the nature of the activity.

Information Technology Services

Students have access to a variety of network and online services to support their learning at CCAC. Once students are accepted to the College, they will be provided with a network account which provides access to the CCAC network from any campus PC, a student academic email account and access to student web page publishing.

The ITS ServiceDesk provides technology support for students to promote learning and student success. Students may contact the ServiceDesk by phone or email for technology information or technical assistance. Go to ccac.edu/ITS__Students.aspx for hours of operation and contact information

Other online services available to students include CCAC Central e-Services for registration, payment, grades and transcript information; Blackboard for accessing course documents on the web; online bookstore; Appointment Central for scheduling advising and other appointments; and Online Dean for getting answers to questions; and online tutoring services. More information about technology services go to ccac.edu/online-services/

Open Laboratories

The college provides computer facilities, learning assistance centers and in some cases, mathematics, reading and writing laboratories at each campus. Open laboratories do not provide organized instruction but add to classroom instruction. Depending upon the availability of facilities, open laboratory hours can be arranged to fit individual student schedules. These activities, which may be required, receive no college credit.

Clinical, Externship, Fieldwork or Practicum Experiences

Many programs at the college require students to have hands-on work experience. These practical experiences are usually scheduled during the fall and spring terms although some programs also require summer assignments. All clinical, externship, fieldwork and practicum experiences are offered at college-approved sites. For these clinical and practicum experiences, the college awards one credit for every 60 hours in a term. In a 16-week fall or spring term, a one-credit clinical or practicum experience may require four hours each week. Scheduling may not be regular and hours may be less or more than a 16-week term.

All Health Career programs as well as many programs in the Education, Social & Behavioral and Human Services programs and Computer Information Technology programs at CCAC also provide students with the opportunity to gain experience in a health care or appropriate program-related facility as early as the first term in a program. The college has cooperative arrangements with most local health care facilities where students practice skills learned in the classroom and laboratory, under the direction of professionals. For more information go to ccac.edu/Cooperative_Education_Guidelines.aspx

Student Success & Learning Support

Student Success Initiatives

The Community College of Allegheny County is committed to helping more students reach their goals. CCAC promotes student success through various initiatives such as Roadmap, Learning Assistance Centers, Early Intervention, the Accelerated Learning Program, Tutoring and Student Lingo. If contacted by CCAC staff as part of these initiatives, students should follow the recommendations of CCAC staff, whether that means meeting with an advisor, following up with tutoring or registering for *SDS-102 Academic and Personal Development*. CCAC wants you to succeed at all levels.

Roadmap to Your Destination

Roadmap is a clear pathway to graduation, detailing the steps to completion in logical sequence and directing students to engage in specific tasks at key times. It focuses on what most students need to do to stay on track by offering two goal-driven paths—Career and Transfer. Support services vary for the two routes, and Roadmap clearly illustrates what to do at each milestone. For more information go to ccac.edu/learning/

Learning Commons

The Learning Commons, grant funded facilities, are study areas where students can work independently, get help with assignments, interact with faculty, or engage in peer and computer-assisted learning. All CCAC students have access to the Learning Commons to work on reading, writing, and study skills that can improve learning outcomes in any content area. For more information go to ccac.edu/Learning_Commons.aspx

Learning Assistance Centers

The Learning Assistance Centers (LAC) at each campus provide robust services for learning support, to help students build skills and improve their academic performance. Each Learning Assistance Center offers free tutoring services in a wide range of subject areas. Students can make an appointment or simply drop in for help with homework or assignments. The Math Cafés are open for students to drop in for assistance as questions arise. In both the Math Cafes and Learning Commons, instructors and tutors may also schedule group tutoring sessions. Diagnostic learning software is available for students to build math and reading skills, as well as prepare for the CCAC placement test.

CCAC also provides students 10 hours of free online tutoring per semester via chat rooms and message boards. For information on the online tutoring service and on-campus tutoring schedules, go to ccac.edu/Tutoring.aspx.

Student Lingo

StudentLingo is a series of interactive on-demand video workshops, action plans, and valuable resources focused on helping students achieve their academic, personal and career goals. StudentLingo is free for all CCAC students and staff. For more information go to <https://www.studentlingo.com/ccac>

Accelerated Learning Program

The Accelerated Learning Program (ALP) is a corequisite model in which students enroll in the upper-level developmental English course and a college-level English course simultaneously. The courses are scheduled back-to-back on the same days of the week and the same instructor teaches both courses.

Faculty Resource Program (FRP)

As a learning-centered college, CCAC is committed to enhancing the interaction between students and faculty to increase student success and completion. One way of stimulating this engagement is through the Faculty Resource Program (FRP). Students who have earned between nine and 30 college-level credits with at least a 2.0 grade point average are assigned to a faculty member. Through this program students can be provided with information about academic programs, services offered by the college and opportunities to become more engaged with the institution, their program of study and other students.

Supportive Services for Students with Disabilities

The Disability Services offices provide appropriate and reasonable accommodations in accordance with Section 504 of the Rehabilitation Act 1973 and the Americans with Disabilities Act of 1990 (ADA) and the ADA Amendment Act of 2008. Students must request services and provide current documentation of disability. A wide variety of accommodations are available including accessible facilities, academic accessibility and assistive technologies. Students with questions or concerns should contact the Supportive Services office at the campus they attend to request services. All inquiries are kept strictly confidential. For more information go to ccac.edu/Disability_Services.aspx

Student Services

Counseling Services

The Counseling Center offers career development, academic, personal and transfer counseling and referrals.

Stress management, time management, test-taking strategies, choosing a major/career/transfer school and selecting appropriate courses for transfer are just some of the issues that can be addressed. A library of resources is also available at each campus.

The college provides complete counseling services at students' requests to help students grow and discover their individual potential and deal with the stresses of student life. Courses are provided in the areas of career exploration and academic performance. These services are designed to allow students to examine and evaluate the effectiveness of individual educational and career goals and develop an appropriate educational plan.

Financial Aid

Cost Effectiveness

Students who begin their education at CCAC can be assured of getting the most for their education dollar. CCAC students save \$19,000 over public and \$54,000 over private colleges and universities by spending their first two years at CCAC*. Enrolling in one of CCAC's many transfer programs and carrying those credits to a four-year institution can save students tens of thousands of dollars on their baccalaureate degrees.

**Calculated from in-county tuition and fees for attending full-time for one year. Compared with regional colleges and universities, 2013–2014 academic year.*

Combined with the college's comprehensive financial aid programs and local scholarship funds, CCAC's quality education is within the reach of all residents of Allegheny County. Financial aid is available to qualified students who need financial assistance to further their education. Financial assistance is made available to students of CCAC in the form of scholarships, grants, loans and work-study employment.

Students should consult the Financial Aid office on the campus they plan to attend or go to ccac.edu/financial-aid/ for full eligibility guidelines and requirements.

Students may be eligible for financial aid if enrolled in an approved credit program. Students applying for financial aid must fill out the Free Application for Federal Student Aid (FAFSA). Students applying for student loans must complete the FAFSA, submit a "Loan Request Form," participate in student loan entrance counseling, and sign a Master Promissory note. These forms are available at ccac.edu/financial-aid-forms/

Financial aid staff at all campuses are available to assist students in completing financial aid applications. Students are encouraged to apply for financial aid in sufficient time to have funds available for tuition bills.

Priority deadline to be considered on time for financial aid is **May 1** for the fall term and **November 1** for the spring term. Applicants filing after these dates **can** still receive financial aid; however, priority will be given to students whose files are complete by the above deadlines.

All students are encouraged to apply for financial aid, since the requirements for financial aid vary each year and with each program. Financial aid programs can assist students with tuition, fees, books and living expenses, depending upon the type and amount of funding available.

Financial Aid Academic Progress Guidelines

In order to qualify for federal financial aid (Federal Pell Grant, Federal SEOG, Federal Work Study, Federal Stafford Loan, Federal Plus Loan) and/or CCAC funded grants, a student must maintain satisfactory academic progress as established by the college in accordance with federal guidelines. The entire academic record of a student will be considered in the determination of eligibility for financial assistance whether or not any previous aid was received.

For more specific information regarding satisfactory academic progress, withdrawals and refund procedures, visit the "Appendix A" section of this catalog or go to ccac.edu/academic-progress/

International Students Services

CCAC provides support to and ESL placement testing for all students attending CCAC on an F1 visa. Please be advised, additional admissions documentation is required for students applying to the school for an F1 visa. The international student admissions packet can be requested through the International Students office. CCAC's International Students office also provides ESL placement testing for all students (including permanent residents) whose first language is not English. Students may request additional information by calling the International Students office at 412.237.2629. For more information go to ccac.edu/International/

Job Placement & Career Services

Job Placement and Career Services offers and assists students with a four-point career planning path to success.

First, students can discover their career path. Job Placement and Career Services assists students in identifying goals, opportunities and objectives through exploration and education.

Second, Job Placement and Career Services assists students in building the resume and interview skills needed to be successful in today's employment market. Assistance is provided individually and in small groups as well as in manual or web form for independent learning.

Third, students can use Job Placement and Career Services to gain valuable work experience by obtaining co-op, internship and work-study employment. Working in a chosen field prior to graduation is a proven indicator of success in finding employment upon graduation.

Lastly, by serving as a liaison between CCAC and the employment community, Job Placement and Career Services can assist students in finding their place in the job market. Job Placement and Career Services staff coordinate on-campus job fairs, information sessions and recruiting events, host an Employer Advisory Board, are active on multiple Departmental Employer Advisory Boards and maintain a CCAC-exclusive job website at www.collegecentral.com/ccac

Students requiring assistance in any aspect of their career planning and job search should contact the Job Placement and Career Services office on the campus most convenient to them.

Registration & Advisement Office *(see p. 25)*

Student Life

Each campus maintains a Student Life office. Skilled student service professionals administer the Student Development program. They provide an extensive array of co- and extracurricular activities to make students' time both enjoyable and enriching. These activities include student government, clubs and cultural and multicultural events. Students may also participate in lifetime fitness, intercollegiate sports, recreation programs or write for the campus newspaper.

Information about clubs and organizations for students is found at ccac.edu/life/ Each campus develops its own clubs based on the interests of the students.

- A variety interest-specific clubs are available at each CCAC campus.
- Program related clubs: Biotech Club, Business Club, Cinema Club, Computer Club, Drama Club, Massage Therapy Club, Nursing Club, Surgical Tech Club
- Student Government Organization (at each campus)
- Student Newspaper (at each campus)

In addition to clubs, students who qualify can become members of Phi Theta Kappa and Psi Beta honor societies.

The Student Engagement Transcript is a free service offered by Student Life to document and verify participation in athletics, student clubs and organizations, campus events and community service. Official copies of the Student Engagement Transcript can be added to a resume and academic transcript. To access the Student Engagement Transcript application go to <https://webapps.ccac.edu/EngagementTranscript/>

For more information concerning these programs or other programs contact the Student Life office. For more information go to ccac.edu/life/

Transfer Services

Many students transfer to four-year colleges or universities throughout the United States. Students should meet with a counselor as soon as they have identified the college they plan to attend after CCAC and the major they intend to pursue. Counselors assist students by helping select courses that are transferable to four-year colleges and universities.

Transfer Services (continued)

Since most CCAC students transfer to schools within this region, CCAC has articulation agreements with a variety of institutions to ensure the transferability of CCAC courses. For more information, please go to ccac.edu/articulation/

Transfer services also include early contact with colleges and universities within the tri-state area. Each CCAC campus hosts college and university fairs where representatives from four-year colleges and universities visit CCAC to provide information relative to the admissions process, transfer of CCAC coursework and scholarship availability. Transfer services are housed in the counseling offices of each CCAC campus.

Transcript Requests

CCAC's Registration and Advisement office provides official and unofficial transcripts upon a student's written request. The privacy of the student transcript is protected by FERPA (the Family Educational Rights and Privacy Act) and as such it can only be released with the consent of the student. (Students must also be in good financial standing with the college.) Unofficial transcripts can be viewed and printed through the college website at ccac.edu CCAC Central e-Services.

Official transcripts can be requested through CCAC Central e-Services. There is a \$4.00 fee for each official transcript request.

Veterans Services Center

Federal and State approving agencies have authorized CCAC to administer veterans education benefits for CCAC students. The Veterans Services Center offerings include, but are not limited to:

- providing information on VA benefits specific to a student's situation;
- referring students to the appropriate campus or community resources;
- helping students navigate the campus and all the various departments; and
- connecting new students with other student veterans at CCAC.

Veterans wishing to utilize their benefits should complete the appropriate forms with CCAC Veterans Services Center either in person or online. Veterans are required to fill out a new certification request form each term they wish to utilize their benefits.

VA benefits counseling is available at each campus, with a full-time staff dedicating to serving veteran students at Allegheny Campus.

Veterans must meet the College Academic Progress Policy in order to continue receiving VA educational benefits. (See the "Academic Rules and Regulations" section of this catalog) Veterans are encouraged to apply early for admissions, financial aid and their VA benefits.

Certification request forms are available in the Veterans Services Center, 212 Jones Hall (and online at ccac.edu/Veterans/) For more information please call 412.237.6503 or email VeteransServices@ccac.edu.

Vocational Programs with Learning Supports

The Vocational Education department at North Campus offers training programs to equip adults with cognitive disabilities with the skills in occupational areas to obtain and maintain service-related jobs in the western Pennsylvania region. These include:

- Environmental Services/Janitorial
- Food Service
- Indoor/Outdoor Building Maintenance*
- Resident Aide
- Nursing Assistant*

** offered at both North and South Campus*

Students receive classroom training and hands-on skills in practical work experience environments. Teachers work closely with the students in the classroom and provide them with on-site support at work experience sites. Personal skill development is emphasized relating to dress, grooming, attitude, attendance and getting along with fellow workers.

Students need to have the ability to maintain a learned routine and follow verbal or written directions. In addition, comprehensive employment skills are taught, which include resume development, job search linkage, application preparation, interviewing skills and preparation for State Competency Exam if required in the program of study.

Graduates of these programs will find realistic employment that matches their skills. Find more information got to Community Training & Development at ccac.edu/Vocational_Education_Training_for_People_Who_Need_Learning_Support.aspx

Admissions & Enrollment

Applying for Admission

Students may apply to the Community College of Allegheny County through an online application at ccac.edu. If necessary, paper applications can be obtained at the campuses and in the credit magazine. Those completed applications should be returned to the Admissions office at the campus student plans to attend. The Community College of Allegheny County has an open admission policy. ACT and SAT scores are not required, but should be submitted if the student has taken them.

To become a CCAC student, a person should have a high school diploma or the Pennsylvania General Education Development (GED) certificate or should be over 18 years of age with reasonable equivalent experience.

Students are required to submit high school transcripts. Full-time*, degree-seeking students and students planning to enroll in courses with English, reading and/or mathematics prerequisites are required to take placement tests. Scores on the placement tests help the student and academic advisor determine whether, at the time of registration, the student has the skills necessary to succeed in specific college classes. To help students in this effort, college faculty have assessed the level of difficulty of classes they teach and determined what the appropriate minimum test score should be to successfully begin the class.

*Part-time degree-seeking students must complete their placement tests once they have achieved 12 credits.

GED Certification

- GED Testing is now exclusively computer-based and administered at authorized GED Testing Centers only. No legitimate GED Test is offered via the Internet.
- For information about registration, payment, scheduling, and testing locations, please visit GED.com
- If you took the GED test in Pennsylvania prior to December 31, 2013 and did not pass, you may be allowed to combine partial scores from your test to qualify for the Commonwealth Secondary School Diploma.
- To determine if your prior scores qualify, go to: ccac.edu/GED-information/ GED Test Scores FAQ and follow the instructions there.
- More detailed GED program policy and procedures information is available at ccac.edu/GED-information/

If a student is under 18 years of age and has neither graduated from high school nor received a GED, the student may need to meet with an academic dean to determine appropriate coursework. Current high school students may be eligible for either the dual enrollment or concurrent enrollment program and should discuss either with the Admissions office at any campus or with the student's high school guidance counselor.

Limited Admissions Programs

Admission to the college does not constitute admission to a limited enrollment program. Enrollment in these programs is limited by availability of clinical sites, employment opportunities, accreditation requirements and other factors. If a student indicates a preference for one of these limited admissions programs, the student will be sent complete information on the process. For more information go to ccac.edu/limited-enrollment-specialty-programs/

College Placement Tests

CCAC's college placement tests measure each student's academic skill level in writing, reading, and mathematics. They are designed to help students and the college to determine courses in which they will be most successful. Although students cannot fail these tests, they should try to do their best because the results will determine where they will begin studies at the college

Important Information. Students should review these items before scheduling placement tests:

- Testing is required for all full-time, associate degree-seeking students.
- Testing is required for students planning to enroll in courses with English, reading and/or mathematics prerequisites (see exemptions below).
- Part-time, associate degree-seeking students must complete their placement tests once they have achieved 12 credits.
- These tests are offered in a computerized format.
- Placement tests are free.
- Students should apply to the college before taking placement exams.
- Placement tests are given in writing (vocabulary and usage), mathematics and reading (vocabulary and comprehension).

College Placement Tests (continued)

- Placement tests are offered at regular times throughout the year, with extra testing sessions scheduled before each term. A student may schedule a testing session online via ccac.edu/placement-tests/
- Early testing means early admission and early registration, a better chance to get the most desired classes at the most desired times.
- Students may review sample questions by going to the COMPASS website at www.act.org/compass/sample/index.html
- Students may retake each test once.
- The length of time required to take placement tests varies, depending on how many of the tests a student needs to take. The complete set of tests requires approximately one-and-a-half to two hours.
- All materials the students need will be provided when they come to a test session. Bring photo identification to the test.
- The student's responsibility is to arrive well-rested, calm and on time.
- Test results are available to students shortly after they take the tests.
- Test results will be interpreted for students when they meet with their academic advisor.
- A student may re-test for placement out of a course in which he/she was enrolled after four years.
- Once a student has re-tested after four years and scores into the same course(s) for which he/she was enrolled, there is no further alternative, regardless of the result.
- Along with a student's educational record, test results will determine the student's initial placement in English, mathematics and reading skills classes.
- Testing is available for students whose first language is not English. Call the International Students office at 412.237.2629 for more information.

Schedule Placement Tests

Once you are accepted, and prior to registration for classes, you may schedule your placement test.

- In-person placement testing use appointment Central.
- Remote placement testing is available to applicants outside the geographic region.

For details on how to schedule your test, please go to CCAC's website: ccac.edu/placement-tests/

Placement Tests Exemptions

Students may not need to take all or part of the placement tests if any of the following apply to them:

- They already have a college degree.
- They have already taken college-level English and/or mathematics and received a grade of C or better.
- They are pursuing a certificate or degree program which does not include English, reading or mathematics prerequisites.
- They are taking a class or classes that have no specified skill requirements.
- Their SAT or ACT test scores were above the 50th percentile. In this case, students will be exempt from reading and/or mathematics placement testing. Verbal and mathematics scores are reported separately.

Students need to document any exemptions that apply at the Admissions office when they apply for admission to the college.

Students should remember that the textbooks used in classes are written for students with college-level reading skills. The reading placement test will help students determine whether they need additional help in this area.

Students may not re-test for placement out of a course in which they are enrolled once the class has begun; any change in placement at that point will be at the discretion of the instructor of that course.

Mandatory Student Orientation

Students must complete either the online or the on-campus student orientation before registering for classes. CCAC recommends students do both. New students who attend orientation have consistently been shown to have higher levels of engagement and academic success nationally. Student orientation gives access to key information that students can use to be successful.

The two-tiered student orientation program will help students to become familiar with the campus, understand how to register for classes, learn about financial resources and many more services and activities that are vital to success and graduation. Students can take both the online student orientation as well as the traditional on-campus student orientation in order to get their education and career off to a great start.

Registration & Advisement Office

The Registration and Advisement office is responsible for registering students for classes and for maintaining student academic records. The four campus offices provide ongoing advisement to students in the selection of programs and courses. CCAC encourages students to meet with an academic advisor before enrolling in classes. The advisor will review your program of study and the best course selections for that program. However, certain categories of students are required to meet with an advisor before enrolling. They are:

- All new degree or certificate seeking students (i.e., students who have never taken college coursework).
- Students who have not completed the developmental sequence.
- Students with grade point averages (GPA) below 2.00.
- Students who are changing their program of study.
- Students who will graduate at the end of the term.

The following students may register without seeing an academic advisor, but are always welcome to use this service:

- Visiting students from other colleges who have met the prerequisites to take specific courses. Students should bring an unofficial transcript or grade report at the time of registration.
- Non-degree seeking students (with previous college credit) who wish to take courses for professional or personal improvement.
- Continuing students making satisfactory academic progress.

Academic Advisor

New students must meet with academic advisors to review placement test scores. The purpose of this meeting is to determine the students' educational background, to discuss their educational goals and to plan how the college can help them achieve these goals. Students should review their goals before the meeting takes place so the advisors can answer any questions students may have or refer them to the appropriate person or department.

The academic advisor will:

- explain placement test results and what they mean for future studies at the college. All students are required to complete the skill-building classes indicated by their placement test results. English, mathematics and reading teachers will assess students early in the term and, if appropriate, will recommend that students move to another level of coursework in that discipline. This will happen during the first three weeks of classes and is called a vertical change;

- help students develop an educational plan. If students are unsure, they should tell the academic advisors. The college has many ways to help students make this decision and they all begin with this interview;
- ask about other demands on student's time. Many students work or have other responsibilities while attending the college. Students should tell the advisor about these responsibilities so that together, students and advisor can assess the impact on the student's studies;
- refer students to other services available on campus. The students should be aware of career counseling, supportive, transfer and placement services. A full range of student services and their locations are detailed in the college Student Handbook;
- explain the requirements of the program chosen by the student. Students planning to transfer to a four-year school should also meet with a counselor;
- help the student plan the first term's schedule, helping to ensure enrollment in the right classes;
- work with students who have not completed the developmental sequence;
- allow all eligible returning students with a GPA of 2.00 or higher to register online. Students must meet all the prerequisites for the scheduled courses and be in good financial standing;
- work with the student to change a program of study; and
- explain advanced standing practices.

Web Advising

Students who live more than 50 miles from a CCAC location and are interested in attending CCAC now have the ability to complete the enrollment process and meet with an academic advisor using our WEB Advising program. To determine if you meet the technical requirements for WEB Advising and/or for additional information on the web advising process, go to ccac.edu/Web-Based-Advising/

Advanced Standing

Advanced standing credits may be obtained in the following ways:

Transfer of Credits: If a student has successfully completed courses at another college, he/she may petition to have these courses count toward graduation at CCAC. These courses will not be listed on the student's transcript until one course has been successfully completed at CCAC. Only credits earned in CCAC classrooms or online learning classes are calculated into the CCAC GPA.

Advanced Standing

If a student intends to apply college courses taken elsewhere to a degree at CCAC, the student must request an official transcript from those colleges and apply for advanced standing. These transcripts should be sent to the Admissions office at the campus the student attends. Transcripts become the property of the Community College of Allegheny County and will not be returned. CCAC does not provide copies of transcripts from other secondary and postsecondary institutions.

Credit by Examination (CBE)

Students who feel that they can demonstrate knowledge equivalent to what is taught in a college class may petition the appropriate academic dean for the privilege of taking a special examination for college credit. There is a fee for such exams. Students may not take CBE if they have already taken the courses at CCAC. For detailed procedures see ccac.edu/Advanced-Placement/

CLEP, AP, USAFI and ACE Approved Military or Corporate Training

If students who have met CCAC standards for the College Level Examination Program (CLEP) and/or Advanced Placement Tests (AP) of the College Entrance Examination Board and/or taken courses in the United States Armed Forces Institute (USAFI) or American Council of Education (ACE) approved military training, they may apply to have these tests/courses count toward credit graduation at CCAC.

Portfolio Review through College Credit Fast Track (PLA)

College Credit Fast Track helps current and prospective students earn college credit at one of Pennsylvania's Community Colleges based on prior work or life experience. Through an online state-wide website, CCAC students and applicants can create and submit an e-portfolio, which enables the student to document and compile prior learning for evaluation of credit. Students submit the e-portfolio, which serves to document the evidence that the student has mastered the learning outcomes for a credit course at CCAC through life and work experience. See ccac.edu/CCFastTrack or visit the www.ccfasttrack.org e-portfolio site.

If advanced standing is approved for college credit, it will be entered into our student information system as preliminary, and will be posted to the CCAC transcript once the student has completed at least one course at CCAC.

SOAR (Students Occupationally and Academically Ready)

SOAR (Students Occupationally and Academically Ready) is a set of statewide articulation agreements allowing qualified high school Career and Technical Education students to earn college credit. SOAR is designed to be a career pathway preparing students for high-demand, high-wage careers.

Students who have successfully graduated from a career and technical education high school can earn CCAC credits in certain programs by completing a CCAC admissions application, selecting the CCAC program that corresponds to their high school program, of study, and submitting the following materials:

- secondary competency task list coversheet, the completed secondary competency task list and the statewide articulation agreement cover sheet (these documents can be downloaded from gettingthemthere.com)
- official high school transcript (showing 2.5 or better GPA in technical courses)
- copy of high school diploma
- any earned industry certification
- completed CCAC transfer of credit request form

New SOAR programs are added often. To see a current, complete list of which CCAC courses have been articulated for specific SOAR programs, use CollegeTransfer.net or visit ccac.edu/Perkins_Grant_SOAR_Agreements.aspx

Registration

CCAC has an open registration process, supported by an online registration system. **It is the student's responsibility to keep name, address and email information up to date.**

CCAC staff will review the biographical and academic information on the registration form. It is important to make changes and corrections during each registration. Registration dates and times are posted each term. Students should register as soon as possible ensuring that they get the classes and the schedule that they want. CCAC is supported in part by Allegheny County taxpayers. Student tuition is higher if the student's permanent residence is outside of the county or outside of the state. Students need proof of his/her permanent residence.

Many returning CCAC students may register on the web. For more information, go to ccac.edu/online-services/

Registration (continued)

All classes offered at CCAC are listed in the fall, spring or summer credit schedules. Class offerings are also listed on CCAC Central e-Services or by using “course search.”

- Classes are identified by alpha-numeric codes and section numbers. Alpha-numeric codes identify specific courses, while section numbers identify the time and location of each course.
- Alpha-numeric codes also identify the subject of the course (three letters) and its level of difficulty (three numbers). Courses numbered below 100 are developmental and do not count as college credits. Courses numbered 100–199 are introductory courses. Courses numbered 200–299 are more advanced. A complete list of the alpha codes can be found in the Course Description section of this catalog.

Once the registration process is completed, students will receive an invoice listing the classes reserved and the amount of tuition and fees.

Course Registration Deadline

Students may register for credit classes until the first class meeting and online courses prior to the start of the term. Registration using CCAC Central is available up until one day before the class begins.

For courses that have met (including online courses), students may request the instructor’s documented approval and submit it to the Registration and Advising Office for processing within two business days of signature and before the end of the first week of the term (or first two days of the course term for courses 10 weeks in length or less). Students who are on probation or suspension must also obtain permission from an advisor (probation) or a counselor (suspension).

Cross-registration at Local Colleges & Universities

The Pittsburgh Council on Higher Education (PCHE) is a consortium of all colleges and universities in Allegheny County. One of its services is to provide students with the opportunity to register for classes that would not normally be available at their home institution. Only full-time students can enroll in classes through this cross college/university registration. Enrollment is limited to fall and spring terms only. More information is available from any campus Registration and Advisement office or at ccac.edu/advisement-forms/

Academic Rules & Regulations

Attendance

Attending class, especially the first day of classes is critical to student success. Be certain to attend each class the first day it is scheduled. Go to the room listed on the invoice at the time and on the day the class is scheduled. Instructors begin taking attendance on the first day. This helps them to learn students’ names and to be certain that all students receive the information necessary to succeed in that class. Students should learn the instructor’s name, office number and office hours.

Attendance Policy

Students are expected to attend all classes regularly and on time. Excessive absences* result in poor classroom performance, low grades and possible failure. The attendance policies of individual instructors will be made clear on the first day of class and will appear in the course outline. (Some instructors may calculate attendance and absenteeism into students’ final grade.)

**Instructors will check attendance for the first three weeks of the term (or 20 percent of shorter terms). If students do not attend during that time, they will be dropped from the class, financial aid will be adjusted and tuition and fees will be forfeited. Instructors will also report on attendance at the 60 percent date of the term for financial aid compliance. For more details, see Appendix A in the Appendices, in this catalog.*

In accordance with Title IX of the Education Amendments of 1972, absences due to pregnancy or related conditions, including recovery from childbirth, shall be excused for as long as the absences are determined to be medically necessary. Students will be provided with the opportunity to make up any work missed as a result of such absences, if possible. The college may also offer the student alternatives to making up missed work, such as but not limited to, retaking a semester, taking part in online instruction, or allowing the student additional time in a program to continue at the same pace and finish at a later date. For more information or requests for accommodations, students should inform their instructor(s) and/or contact the Civil Rights Compliance Officer/Title IX Coordinator, at 412.237.4535 or smisra@ccac.edu

Course Outlines

Students will receive a course outline in each class during the first week. This course outline will review the course purpose, detail class activities and list the requirements to meet to successfully complete the course. The course outline will also list the books and materials students will be expected to purchase.

Required Books and Materials

Students can view the textbook assignments in the course search in CCAC Central e-Services, but **students should not purchase books until they meet with the instructor in class**. Instructors select the books they want students to use in their classes and these may vary between sections of the same course. Students should not write in books until they are certain they will remain in the class, since this may affect a refund if they return the books. The guidelines for returning textbooks and materials is detailed on the CCAC website. Read carefully; there are different deadlines for each.

Academic Calendar

The academic year at CCAC includes a fall and spring term. During these terms, there are 15 weeks of instruction and a 16th final exam week (for most campus day courses) in each class for which students are registered. The college centers and many campus evening courses start two weeks later (a 13-week term and a 14th week of exams) and have prorated refund and academic dates. There is a variety of summer term schedules offered, ranging from four to 10 weeks in length. Students should be aware of the length of the term in which they enroll. Classes for which students have registered will be completed when students have taken final examinations. For more information, go to ccac.edu/Academic_Calendars.aspx

One hour of instruction a week over a 16-week term equals one college credit. A good rule of thumb is that students should plan to study two hours a week for every one hour spent in class. For a three credit class, students should plan on six hours of study a week. A full-time student enrolls for a minimum of 12 credits a term. About 40 percent of students at the college attend on a full-time basis.

Grades

Midterm grades will be available on CCAC Central e-Services during the ninth week of the term. Midterm grades are not a permanent record, but are intended to help students assess their progress in each class. These progress reports also provide students with a list of their registered classes.

If students receive a grade in a class they are not attending, students should report at once to the Registration and Advisement office to determine their registration status. Failure to do this could mean that a student will receive a failing grade in a class he/she never attended.

Final grades will be available online shortly after the term is over. This final grade becomes part of the permanent record at the college and will appear on the student's transcript when copies are sent to potential employers or other colleges at the student's request. If there is a problem with a grade, it is important that students contact their instructor immediately. Midterm and final grades are only available on the web. For additional instructions, go to ccac.edu and visit CCAC Central e-Services.

Grade Description

CCAC reports student performance using the following grading system:

- A Superior
- B Above Average
- C Average
- D Below Average
- F Failure

These grades are used to calculate a student's grade point average (GPA). The GPA indicates academic standing at the Community College of Allegheny County.

Calculating Grade Point Average

To calculate a student's grade point average (GPA), CCAC assigns grade points to each of a student's letter grades (A=4, B=3, C=2, D=1, F=0) and these are then multiplied by the credits assigned to the class. Grade points are then added up for all classes completed in a term and divided by the total term credit hours completed. This result is the term GPA. Students can calculate their cumulative GPA by adding up the grade points for all the courses attended and dividing this number by the sum of credit hours completed. These calculations are available on CCAC Central e-Services.

Example:

BIO-110	4 cr.	A/4	16 grade points
ENG-101	3 cr.	B/3	9 grade points
MAT-102	3 cr.	A/4	12 grade points
PSY-101	<u>3 cr.</u>	C/2	<u>6</u> grade points
	13 cr.		43 grade points

Total grade points are divided by the total credits to get the grade point average.

$$43 \text{ GP} / 13 \text{ cr.} = 3.31 \text{ GPA credential}$$

Developmental courses are not calculated into the graduation GPA. Students must earn C grades or better in all developmental courses to register for the next course in the discipline or to use this course as a prerequisite for a course in another discipline.

Interpreting the Grade Report

In addition to grades A through F, other symbols that may appear on the grade record, but are not calculated into GPA are:

I (Incomplete). This means that a student has permission from an instructor to postpone the completion of required coursework for a period not to exceed eight weeks into the following term. If the work is not completed by this deadline, the I will become an F grade. Before an instructor can assign an I grade, the student and the instructor must complete a contract with a schedule for completing the required work. When this work is complete, the instructor will submit a final grade. Incompletes do not appear on the midterm grade report.

M (Military Call to Active Duty). An M grade is posted to the student transcript when a student has elected the withdrawal option Military Call to Active Duty.

L (Audit). This means that a student is attending the class on a nonacademic credit basis. A student must indicate this on the registration form when registering for the class. Students taking a course on an audit basis pay the same tuition and fees as the student taking the course for credit.

P (Passing). A few select college classes have been approved for grading on a pass/fail basis. There are no grade points assigned to a pass course. Failed grades will count in the calculation of a student's GPA.

W (Withdrawal). This means that a student has officially withdrawn from the course. Any actions or pending actions of academic misconduct may prohibit a student from withdrawing from a course. The deadline for an official withdrawal from a course is the ninth week of a 16-week term. Shorter terms have a prorated W date. After this deadline, the instructor must give the student a grade.

(A Blank in the Grade Field). This means that no grade was posted for this class. The student should check with the instructor to determine why.

Changing an Incorrect Grade

Each student should check their final grades at the end of each term by using CCAC Central e-Services. If the student believes a grade is incorrect the student needs to discuss this with the instructor. If the instructor agrees, he/she will submit a change of grade card to the appropriate academic dean for posting. Appeals related to grades always begin with the instructor. The academic dean can explain subsequent steps in the appeals process to the student. All disputed grades must be resolved within the first eight weeks of the next major term.

Repeating Courses

If a student receives a D, F, or W grade in a course, the student can repeat the course. However, a third and final attempt requires permission of the associate dean of Academic Affairs and will be permitted only under compelling circumstances and with the student's written acknowledgment of and agreement to the consequences of not successfully completing the course on the third attempt. As a condition of being granted a third attempt, the student may be required to utilize available academic support options during the third attempt.

In some programs the student may need to repeat a course, regardless of the grade, if it was taken more than 10 years ago. These courses are usually identified within information about the specific program. The last grade received in a course is used to calculate the grade point average. Earlier grades will remain on the transcript with an appropriate notation.

Limited enrollment programs and/or third party funding may have different requirements.

Revised 5.6.14

Changing a Major Program

As a student pursues studies at the CCAC, he/she may want to change the major program. To do this, students should discuss the change with an academic advisor and file a change of major program form with the Registration and Advisement office at the student's campus.

Academic Forgiveness

Students may apply for forgiveness of D and F grades due to an absence of four years from credit study or because they have changed their program of study. The adjusted GPA will be used for determining academic standing to include suspension, probation, good standing, honors and dean's list.

The following conditions apply to both of these situations.

- D and F grades remain on the transcript followed by a # notation but will be removed from the calculation of the cumulative GPA. (X, W, L, I, N and P grades are neutral and do not effect GPA.)
- There is no limit on the number of courses that can be forgiven within this policy.
- Courses included in any credential (AA, AS, AAS, certificate or diploma) will **not** be forgiven; those courses have already been included in the credential.
- After the most recent four-year absence or change of program, the student must earn a minimum of 12 additional credits with a GPA of 2.00 or higher for all courses taken after the absence or after the change of program (*i.e.*, if more than 12 credits have been completed at the time of application for forgiveness, all grades will be used to calculate the minimum 2.00 GPA requirement).
- Once awarded, academic forgiveness cannot be revoked.
- Students will typically apply for academic forgiveness after their first term back at the college. But students may also apply without being currently registered, if applying for graduation.
- Only institutional credit is calculated into GPA. Transferred credit will not change the CCAC GPA.

Auditing Courses

A student who shows reasonable academic ability may audit one course per term. There is no academic credit for audited courses, but a notation of L is entered on the student's transcript. Students must request audit status for that course at the time of registration. Standard rates of tuition and fees apply.

Dean's List

The dean's list is CCAC's way of recognizing academic achievement. It is announced at the end of each term. Students will be on the dean's list if, as a full-time student, when they have a term GPA of 3.50 or higher and received no F grades during the term. Courses below 100 are not included in the calculations of the dean's list GPA. If students are part-time, they will be on the dean's list at the end of each term in which they have accumulated

12 credits with a cumulative GPA of 3.50 or higher and no F grades for that 12-credit interval. The dean's list is circulated to local newspapers and usually appears in the student newspaper.

Good Standing

To remain in good standing, students must maintain a cumulative GPA of 2.00 or higher. Students must be in good standing to graduate. Students in good standing may take 15 or more credits of classes a term. More than 18 credits constitute an excessive class load. To register for more than 18 credits, students will need permission from the academic dean.

Academic Probation/Suspension Policy

After final grades are posted at the end of each semester (fall, spring, summer—all sessions combined), each student's electronic grade record will be identified with the label "PROB.I, PROB.2 or SUSP including date of the action according to the following definitions:

Academic Probation—A student who has attempted a minimum of 12 credit hours with a cumulative grade point average below a 2.00 and is not suspended is placed on academic probation. Refer to the chart below for restrictions based on grade point average.

Probation Policy Chart

Probation I: Students between 1.500 and 1.999

- Maximum of 13 credits
- Must meet with an advisor
- May not include Online Learning courses
- Must repeat any F courses (if applicable to major). It is strongly recommended to also repeat any D courses
- It is strongly recommended that students see a tutor

Probation II: Students below 1.500 and not falling into Academic Suspension

- Maximum of 10 credits
- Must include *SDS-102**
- Must meet with an advisor
- May not include Online Learning courses
- Must repeat any F courses (if applicable to major). It is strongly recommended to also repeat any D courses
- It is strongly recommended that students see a tutor

*If course has **not** been taken already and passed.

All students identified as on "probation" will receive a probation letter signed by the vice president for Student Success and Completion.

- A.If the student has not already registered for a subsequent semester, the identification “academic probation” placed on the student’s electronic grade record will alert the academic advisor of the student’s restriction based on the above chart.
- B.If the student has already registered for a subsequent semester for the appropriate number of credits, no action will be necessary.
- C.If the student has already registered for a subsequent semester for more than the appropriate number of credits, the student will be responsible for adjusting his/her schedule accordingly.

Academic Suspension—A temporary dismissal from the college for two academic semesters for a student whose GPA falls below acceptable levels (below 2.00) of academic progress. (All summer sessions combined equal one semester.)

If students fail to attain the cumulative GPA according to the table below, they will be suspended from the college for poor academic performance for a period of two academic terms after which they must apply for re-admission to the college and see a counselor. (All summer sessions combined equal one term.)

Students who meet the suspension criteria at the end of the fall term, may take eight credits in the spring term, but must file an academic appeal to return for any subsequent terms.

Credits Attempted	GPA
24	1.50 or less
25–48	1.75
49–59	1.90
60+	2.00

Students may petition the Academic Appeals Committee for reinstatement without waiting the usual two terms, if justifications exist. If the appeal is successful, students must meet with a counselor prior to registration.

When returning from a two-term suspension, a student must meet with a counselor and an academic advisor prior to registering for the next term. The student should also be aware of the rules the college has established for removing old course credits and grades from a cumulative GPA. These procedures are described under academic forgiveness. (*See Appendix B, Procedure for Readmission from Academic Suspension.*)

Withdrawal

The following procedures are important to a student’s grade record at the college.

- A student may drop a class during the drop period* of the term and it will not appear on the transcript.
- After the drop period ends until the withdrawal deadline, a student may voluntarily withdraw from a class and a W notation will appear on the student’s grade report and transcript. There is no refund of tuition or fees associated with the Withdrawal process.
- Any actions or pending actions of academic misconduct may prohibit a student from withdrawing from a course. The right to withdraw is denied to any student on whom an Academic Misconduct Report Form is filed. Once the form is filed, the right to withdraw is suspended. If the student files an academic misconduct appeal at the conclusion of the process two possibilities may happen: (1) if the student is exonerated, the right to withdraw applies retroactively; or (2) if the student is found guilty of academic misconduct, the right to withdraw is denied.
- After the withdrawal deadline, the instructor must give the student a grade (A, B, C, D, F or I) for the class. This grade will appear on the grade report and transcript.

**The specific deadline for withdrawals appears in the Academic Calendar at ccac.edu. Students should be aware, however, that credits attempted are used to determine whether they are making satisfactory academic progress and can affect their eligibility to receive financial aid.*

Medical Withdrawal

If a student experiences health problems that require withdrawal from classes, he/she should complete a medical withdrawal form. Forms are available at ccac.edu or at the campus. The student’s physician will need to document the condition that requires a student to leave the college.

Involuntary Administrative Withdrawal

The college reserves the right to cancel the registration of a student at any time for just cause. The cause may include poor academic performance or disruptive behavior. The student has a right to appeal such dismissal through the appropriate procedures. These procedures appear in the Student Handbook. at ccac.edu/Academic_Rules_and_Regulations.aspx

Military Call to Duty Withdrawal

A military student, or the student's spouse, called to active duty during an academic semester has options for completing the semester: (1) taking the grade the student has earned to date in a class(es) provided that more than 75% of class meetings have passed (2) taking an incomplete grade provided more than 50% of the class meetings have passed, completing the course at a later date; or (3) withdrawing from one or more courses with a grade of M at any time. Students must discuss these options with the instructors. (*See Appendix L for details.*)

Graduation

Applying for Graduation

In order to graduate, a student needs to apply at the Registration and Advisement office. This should be done the term prior to the student's final term. The student will complete an application for graduation which will be reviewed to determine whether the student has met all the requirements of his or her program, has a GPA of 2.00 or better and has earned at least 30 of those college level credits at CCAC. Certificate students must earn 50 percent of college-level credits at CCAC.

The college conducts a system-wide commencement at the end of each spring term. Students completing degree requirements the December before or August after the spring commencement are invited to participate.

Graduation in General Studies

Students not meeting the specific requirements of their program, but have met the overall requirements for an associate degree will have the option of graduating with a degree in general studies.

Graduation With Honors

Students graduating with a GPA 3.50 or higher will qualify for honors as follows:

3.50–3.69	Honors
3.70–3.89	High Honors
3.90–4.00	Highest Honors

Requirements for a Second Associate Degree

Students wishing to earn a second associate degree must complete at least 21 additional credits at CCAC beyond the first degree and must meet all the requirements of the second degree.

Completing an Associate Degree After Leaving the College—Reverse Transfer

Within four years after leaving CCAC and after completing a minimum of 30 credits at the college, a student can apply back to the college for graduation. A maximum of 15 credits from an approved and accredited college can be applied toward graduation.

Limitations on Sources of Credits for Graduation

For any degree, the college requires that a minimum of 30 credits* (exclusive of Credit by Examination CBE) be taken at CCAC. For a certificate or diploma, the college requires that a minimum of one-half of the credits required for graduation be taken at CCAC. Advanced standing may apply toward a degree, diploma or certificate. Advanced standing includes transfer credits, credit by exam, CLEP, USAFI, AP and ACE approved military. A maximum of six credits of independent study at CCAC may be applied toward a degree and three credits toward a certificate or diploma.

Limitations on Sources of Credits		
	AA, AS or AAS Degree	Certificate or Diploma
Minimum credits (excluding credits by exam) to be taken at the Community College of Allegheny County	30*	50% of required program total
Maximum credit by examination	30	50% of required program total
Maximum credits transferable back from other institutions by former students of the college to complete degree in absentia	15	
Maximum credits of independent study	6	3

*Students entering CCAC in and after the 14FA–Fall 2014 term can earn the 089 General Studies and 006 Liberal Arts degree with only 21 credits in residence.

Arts & Humanities Programs

Most certificates and degrees in arts and humanities are designed for those students wishing to transfer directly to a similar program at a four-year college or university. Students in the university parallel programs often work with transfer counselors (and the receiving institution) to tailor their Community College of Allegheny County program to the selected four-year institution.

Other arts and humanities programs provide students with more focused studies at the associate's degree level as the students plan to transfer.

Information on specific courses in a selected academic program can be found at ccac.edu CCAC Central e-Services. That



information includes the location, days, times, faculty member and required books and supplies. Note that some courses are only offered during alternate terms. The syllabus (a detailed course description) is available for many courses at <http://webapps.ccac.edu/MasterSyllabi/>

PA TRAC creates a seamless statewide transfer and articulation system by creating foundation courses that can be easily transferred to any participating institution. Students who successfully complete courses from the approved Transfer Credit Framework list can transfer those credits to any of the participating colleges and universities and have them count towards graduation at any of the participating colleges and universities.



For more information, see www.pacollege-transfer.com/PATRAC.

All courses should be chosen with the help of an academic advisor.

- Art (026) (Degree)
- Digital Graphic Design (376.2) (Certificate)
- Ethnic & Diversity Studies (114.2) (Certificate)
- Film Worker (127) (Certificate)
- General Education (085) (Certificate)
- General Studies (AS) (089) (Degree)¹
- Graphic Communications (374.2) (Degree)
- Industrial Design & Art (280) (Degree)
- Liberal Arts & Sciences (AS) (006) (Degree)¹
- Music (018.1) (Degree)
- Theatre (025.2) (Degree)
- Technical Theatre (125) (Diploma)

¹University parallel program

Note: Multimedia Programming, Simulation & Gaming (108) (Degree) and Multimedia Web Programming (104.3) have been moved to the Science, Technology Engineering & Mathematics (STEM) section of the catalog.

STUDENT NOTES

Art (026)

ALLEGHENY, BOYCE, NORTH, SOUTH
Associate of Science

The Art program prepares the student for transfer to a four-year institution with a broad college background demonstrating personal skill and knowledge in art.

Upon completion of this program, graduates may find employment as an art administrator, art educator, studio artist, set designer, museum or gallery assistant, etc.

Upon completion of the program, graduates will:

1. Develop a portfolio suitable for employment, transfer to a four-year institution or artistic development.
2. Develop visual communication skills.
3. Demonstrate technical and perceptual skills.
4. Use principles of design.
5. Use color theory.
6. Use current technology as it applies to the arts.
7. Analyze in order to render 2D forms via line, value and perspective.
8. Use art history to develop visual arts vocabulary and critical thinking skills, in a verbal and written manner.
9. Analyze three-dimensional forms.
10. Analyze visual images and objects.

Degree Requirements**First Semester**

	Credits
ART-103 Art History—Ancient or	3
ART-104 Art History—Modern	3
ART-109 Drawing 1	3
ART-114 Two-dimensional Design	3
ART-148 Color	3
ENG-101 English Composition 1	<u>3</u>
	15

Second Semester

ART-207 Drawing 2	3
ART-223 Three-dimensional Design	3
ENG-102 English Composition 2	3
Art Elective ¹	3
Fine Art Elective ²	<u>3</u>
	15

Third Semester

Art Electives ¹	6
Humanities Elective	3
Mathematics Elective	3–4
Social Science Elective	<u>3</u>
	15–16

Fourth Semester

ART-265 Portfolio	3
SPH-101 Oral Communication	3
Art Electives ¹	9
Science Elective	<u>3–4</u>
	18–19

Minimum Credits to Graduate**63–65**

¹Students should take a minimum of 18 additional credits or six additional courses in studio art and art history, emphasizing the area of the bachelor's degree or related fields of knowledge.

²Students should take a minimum of three credits or one course in dance, music or theatre.

Major Concentrations—drawing/painting, ceramics, three-dimensional media, photography or electronic media. Check campus for media capability.

See the academic advisor and art faculty for specific program requirements among these art electives.

Digital Graphic Design (376.2)

ALLEGHENY

Certificate

This program is a concentration of traditional and digital courses to develop the students' skills in graphic design. The certificate program is ideal for those students seeking professional development or improvement on current skills.

Upon completion of this program, graduates may find employment as a web production designer, a print production artist or as a solo designer.

Upon completion of the program, graduates will be able to:

1. Apply knowledge of elements, principles, phases and theory of art and design.
2. Demonstrate technical skills in vector, raster, page layout and web design applications.
3. Show traditional conceptual and problem-solving skill.
4. Illustrate a design portfolio of projects that are viable in today's market.

Certificate Requirements

First Semester		Credits
ART-109	Drawing 1	3
ART-113	Graphic Communication	3
ART-114	Two-dimensional Design	3
ART-148	Color	3
ART-150	Introduction to Digital Graphic Design	3
		15
Second Semester		
ART-130	Photography 1 or	3
ART-144	Digital Photography	3
ART-165	Digital Publishing	3
ART-168	Digital Imaging	3
ART-170	Web Graphic Design	3
ART-250	Advanced Digital Graphic Design	3
ART-265	Portfolio	3
		18
Minimum Credits to Graduate		33

Ethnic & Diversity Studies (114.2)

ALLEGHENY

Certificate

This program is designed to meet the needs of individuals who must demonstrate proficiency and understanding of differences based on age, race, gender, religions, sexual orientation, national origin or physical or mental ability. Students should choose from among the electives listed base on employment or educational requirements.

Upon completion of this certificate, graduates will:

1. Think and write critically about race, class and ethnicity in social and historical contexts.
2. Analyze multiple categories of social diversity.
3. Describe the scope and magnitude of ethnic and diversity studies from an interdisciplinary approach.
4. Identify different cultures of the world through the study of language, literature, religion and artistic creations or other disciplines.
5. Distinguish among the experiences of a variety of diverse cultures different from their own and provide an analytic framework which facilitates awareness of how cultures vary and shape the human experience.

Certificate Requirements

First Semester		Credits
ETH-101	Ethnic & Diversity Studies	3
ETH-113	Introduction to Black Women & Leadership	3
ETH-114	Achieving Cultural Competence	3
		9
Second Semester		
ETH-112	Understanding Violence in America	3
ETH-123	The Politics of Race, Ethnicity & National Identity	3
	Recommended Elective ¹	3
		9
Minimum Credits to Graduate		18

(Continued)

Ethnic and Diversity Studies (114.2) (Continued)

¹Recommended Electives:

ANT-104	Native Americans of North America	3
ETH-119	Diversity Training/Education in America	3
ETH-121	Current Issues in Ethnic & Diversity Studies	3
ETH-122	Race & Ethnic Relations in a Global Economy	3
ETH-215	African Art/Artifacts in the Cycle of Life	3
ETH-220	History of the Pittsburgh Civil Rights Movement	3
HIS-203	African American History 1 or	3
HIS-205	African American History 2	3
HIS-219	History of Women	3
PSY-106	Psychology of African Americans	3
PSY-109	Psychology of Women	3
SOC-160	Introduction to Women's Studies	3
SOC-211	Racial & Ethnic Minorities	3
	Other electives may be considered upon departmental approval	

Film Worker (127)

SOUTH

Certificate

This program prepares graduates to work on film and television projects as crew. Positions such as construction, scenic artist, set dressing, grip, set lighting technician, sound mixing and editing, video assist, craft services, wardrobe and location scouting will be introduced. Opportunities to visit movie locations and sound stages will be an integral part of the hands-on training.

Upon successful completion of the program, the graduate will:

1. Describe ten film worker positions and their duties.
2. Recognize the differences in each film-worker position, its tools and necessary work ethic.
3. Execute craft services.
4. Work closely with others and under pressure with deadlines.
5. Apply ethics of a film worker and understand protocol.
6. Utilize skills through participation on a film crew.

Certificate Requirements

First Semester Credits

THE-117	Theatre Production 1	3
THE-121	Technical Theatre 1	3
THE-216	Film Worker 1	<u>3</u>
		9

Second Semester

THE-122	Technical Theatre 2	3
THE-226	Film Worker 2	3
THE-403	Cooperative Learning	<u>3</u>
		9

Minimum Credits to Graduate: 18

General Education (085)

ALLEGHENY, BOYCE, NORTH, SOUTH
Certificate

This certificate provides college courses to promote competency in English composition, mathematics, analytical reasoning, cultural diversity and computer literacy. These courses cultivate valuable workplace skills and knowledge of the world essential for careers in the 21st century. This certificate also provides a basic building block for many associate degree programs at the College.

Upon successful completion of this program, the graduate will:

1. Write critically.
2. Speak effectively in a professional environment.
3. Demonstrate college level mathematical skills.
4. Distinguish among the experiences of diverse cultures.
5. Demonstrate computer literacy.

Certificate Requirements

First Semester

	Credits
ENG-101 English Composition 1	3
Computer Information Technology Elective	3-4
Mathematics Elective ¹	3-4
Social Science Elective	3
Speech Elective	3
	15-17

Second Semester

ENG-102 English Composition 2	3
Cultural Competency Elective ²	3
General Electives (2) ³	6
Humanities Elective	3
Science Elective	3-4
	18-19

Minimum Credits to Graduate: 33-36

¹Mathematics courses must be higher than *MAT-090 Fundamentals of Algebra*.

²Cultural competency courses include:

ANT-102 Cultural Anthropology	3
ANT-104 Native Americans—Indians of North America	3
ANT-117 Globalization	3
BUS-245 International Business	3
ECD-202 Children With Special Needs	3
ENG-118 Women as Writers	3
ETH-101 Ethnic & Diversity Studies	3
ETH-111 Historical Development of Black Community in Pittsburgh	3
ETH-112 Understanding Violence in America	3
ETH-113 Introduction to Black Women & Leadership	3
ETH-114 Achieving Cultural Competence	
ETH-119 Diversity Training/Education in America	3
ETH-121 Current Issues in Ethnic & Diversity Studies	3
ETH-122 Race and Ethnic Relations in the Global Economy	3
ETH-123 The Politics of Race, Ethnicity & National Identity	3
ETH-205 Latino Cultural Studies	3
ETH-206 Asian American Studies	3
ETH-215 African Art/Artifacts in the Cycle of Life	3
ETH-220 History of the Pittsburgh Civil Rights Movement	3
HIS-203 African American History 1	3
HIS-205 African American History 2	3
HIS-219 History of Women	3
PHL-111 Religions of the World	3
PSY-106 Psychology of African Americans	3
PSY-109 Psychology of Women	3
PSY-114 Human Sexuality	3
SOC-160 Introduction to Women's Studies	3
SOC-202 Human Aging	3
SOC-208 Urban Sociology	3
SOC-210 Sociology of Sexual Behavior	3
SOC-211 Racial & Ethnic Minorities	3
Foreign Language	3

Other appropriate courses may be approved by campus Associate Dean of Academic Affairs at the campus where the student is enrolled in the program.

³For the General Education Certificate, developmental courses and English as a Second Language (ESL) courses do not satisfy the program core and general electives, including *ENG-100*, *DVS-101* and *DVS-103*, *ESL-100*, and *ESL-101*. Student Development Services (SDS) courses do not satisfy the program core and general elective requirements

General Studies (AS) (089)

ALLEGHENY, BOYCE, NORTH, SOUTH
Associate of Science

This university parallel program provides the freshman and sophomore foundations of a baccalaureate liberal arts degree. Students should select specialized courses within their major field of concentration as identified by their transfer college or university.

Degree Requirements

First Semester		Credits
ENG-101	English Composition 1	3
	Computer Information Technology Elective ¹ or Program Core Humanities Elective	3–4
	Program Core or Elective	3
	Social Science Elective	<u>3</u>
		15–16
Second Semester		
ENG-102	English Composition 2	3
	Mathematics Elective ²	3–4
	Program Core or Elective (2)	6
	Science Elective	<u>3–4</u>
		15–17
Third Semester		
	Program Core Elective (5)	<u>15</u>
		15
Fourth Semester		
	Program Core Elective (5)	<u>15</u>
		15
Minimum Credits to Graduate:		60–63

¹CCAC recommends that all graduates be computer literate in their field of study. Your academic advisor and program faculty can outline the various options for developing computer literacy.

²Mathematics elective must be a college-level course

Graphic Communications (374.2)

ALLEGHENY
Associate of Science

This program will prepare the student to develop an innovative portfolio of conceptual design. The student will adopt the aesthetic and technical skills necessary for entry-level positions in the print or web design field. Graduates may find employment as a production artist, web designer or freelance designer. The student may also elect to transfer to a four-year institution.

Upon completion of the program, graduates will be able to:

1. Apply knowledge of elements, principles, phases, theory and history of art and design.
2. Demonstrate technical skills in vector, raster, page layout and web design applications.
3. Show traditional conceptual and problem-solving skills.
4. Illustrate a design portfolio of projects that are viable in today's market.

Degree Requirements

First Semester		Credits
ART-114	Two-dimensional Design	3
ART-148	Color	3
ART-150	Introduction to Digital Graphic Design	3
ENG-101	English Composition 1	3
MAT-190	Contemporary Mathematics or Mathematics Elective	4
		<u>3–4</u>
		15–16
Second Semester		
ART-109	Drawing 1	3
ART-168	Digital Imaging	3
ART-223	Three-dimensional Design	3
ENG-102	English Composition 2	3
	Science Elective	<u>3–4</u>
		15–16
Third Semester		
ART-113	Graphic Communication	3
ART-129	Printmaking 1	3
ART-130	Photography 1 or	3
ART-144	Digital Photography	3
ART-250	Advanced Digital Graphic Design	3
	Speech Elective	<u>3</u>
		15

(Continued)

Graphic Communications (374.2) (Continued)

Fourth Semester

ART-103	Art History—Ancient or	3
ART-104	Art History—Modern	3
ART-165	Digital Publishing	3
ART-170	Web Graphic Design	3
ART-265	Portfolio	3
	Social Science Elective	<u>3</u>
		15

Minimum Credits to Graduate

60–62

Industrial Design & Art (280)

ALLEGHENY

Associate of Science

This program prepares you to work in industrial design, including package design and new product design with regard to form, color, material and structure. Principles of marketing and presentation are analyzed and engineering processes studied. Problem solving is oriented to many industries.

Graduates of this program work in package and product design, marketing and sales among other areas.

Degree Requirements

First Semester

	Credits	
ART-114	Two-dimensional Design	3
ART-148	Color	3
EGR-100	Engineering Seminar	1
ENG-101	English Composition 1	3
MAT-108	Intermediate Algebra	4
PSY-101	Introduction to Psychology	<u>3</u>
		17

Second Semester

ART-223	Three-dimensional Design	3
ENG-102	English Composition 2	3
PHY-141	Physics 1	4
	General Elective	3
	Technical Elective ¹ (1)	<u>3</u>
		16

Third Semester

ART-103	Art History—Ancient or	3
ART-104	Art History—Modern	3
ART-113	Graphic Communications 1 or	3
PHY-142	Physics 2	4
ART-138	Sculpture 1	3
EDD-101	Engineering Drawing 1	3
	Technical Elective ¹ (1)	<u>3</u>
		15–16

Fourth Semester

EGR-101	Engineering Graphics (<i>if needed, see advisor for course substitution</i>)	3
	Art Elective	3
	Humanities Elective	3
	General Elective	3
	Technical Elective ¹ (1)	<u>3</u>
		15

Minimum Credits to Graduate

63–64

¹For Technical Electives, consult with the Art Department or an academic advisor. Courses may be selected from certain physics, chemistry and mathematics offerings.

Liberal Arts & Sciences (AS) (006)

ALLEGHENY, BOYCE, NORTH, SOUTH
Associate of Science

This university parallel program provides the freshman and sophomore foundations of a baccalaureate sciences degree. Students should select specialized courses within their major field of concentration as identified by their transfer college or university.

Degree Requirements

First Semester		Credits
ENG-101	English Composition 1	3
	Computer Information Technology	
	Elective	3-4
	General Elective	3
	Humanities Elective	3
	Social Science Elective	<u>3</u>
		15-16
Second Semester		
ENG-102	English Composition 2	3
	General Elective	3
	Major Field Electives ¹ (2)	6
	Mathematics Elective	<u>3-4</u>
		15-16
Third Semester		
SPH-101	Oral Communication	3
	Science Elective	3-4
	Major Field Electives ¹ (3)	<u>9</u>
		15-16
Fourth Semester		
	General Electives	6
	Major Field Electives ¹ (3)	<u>9</u>
		15
Minimum Credits to Graduate		60-63

¹Concentration in a major field requires a minimum of 24 credits or eight courses in the area of the bachelor's degree or related field of knowledge. These courses must be selected in consultation with the transfer counselor and/or academic advisor.

Music (018.1)

ALLEGHENY, BOYCE
Associate of Science

The Music program prepares the student for transfer to a four-year institution with a broad college background demonstrating personal skill and knowledge in music.

Upon completion of this program, graduates may find employment in the fields of music performance, music education, music administration, music therapy or music technology.

Upon successful completion of the program, the graduate will:

1. Sight read music written in standard Western music notation.
2. Identify and notate musical patterns presented aurally.
3. Demonstrate artistic self-expression with fluent technical skills in performance.
4. Analyze music from the common practice period of Western music history.
5. Identify the historical context of musical compositions presented aurally.

First Semester

ENG-101	English Composition 1	3
MUS-121	History of Music 1	3
MUS-128	Music Theory and Analysis 1 ¹	3
MUS-137	Musicianship Skills 1 ¹	2
MUS-221	Class Piano 1	3
	Music Ensemble Elective ²	<u>2</u>
		16

Second Semester

ENG-102	English Composition 2	3
MUS-105	Applied Music 1	1
MUS-122	History of Music 2	3
MUS-129	Music Theory and Analysis 2 ³	3
MUS-138	Musicianship Skills 2 ³	2
MUS-222	Class Piano 2	3
	Music Ensemble Elective ²	<u>2</u>
		17

Third Semester

MAT-102	Mathematical Concepts or	3
MAT-108	Intermediate Algebra	4
MUS-106	Applied Music 2	1
MUS-119	Music Technology	3
MUS-228	Music Theory and Analysis 3 ⁴	3
MUS-237	Musicianship Skills 3 ⁴	2
	Music Ensemble Elective ²	2
	Social Science Elective	<u>3</u>
		17-18

(continued)

Music (018.1) (continued)

Fourth Semester

MUS-205	Applied Music 3	1
MUS-229	Music Theory and Analysis 4 ⁵	3
MUS-238	Musicianship Skills 4 ⁵	2
	Humanities Elective	3
	Music Ensemble Elective ²	2
	Science Elective	3-4
		14-15

Minimum Credits to Graduate **64-66**

¹It is recommended that students take *Music Theory and Analysis 1* and *Musicianship Skills 1* concurrently.

²Music Ensemble Electives include the following courses:

MUS-109	College Choir 1
MUS-110	College Choir 2
MUS-113	Show Choir 1
MUS-114	Show Choir 2
MUS-115	Jazz Ensemble 1
MUS-116	Jazz Ensemble 2
MUS-126	Instrumental/Vocal Ensemble 1
MUS-127	Instrumental/Vocal Ensemble 2
MUS-209	College Choir 3
MUS-210	College Choir 4
MUS-213	Show Choir 3
MUS-214	Show Choir 4
MUS 215	Jazz Ensemble 3
MUS-216	Jazz Ensemble 4
MUS-226	Instrumental/Vocal Ensemble 3
MUS-227	Instrumental/Vocal Ensemble 4

³It is recommended that students take *Music Theory and Analysis 2* and *Musicianship Skills 2* concurrently.

⁴It is recommended that students take *Music Theory and Analysis 3* and *Musicianship Skills 3* concurrently.

⁵It is recommended that students take *Music Theory and Analysis 4* and *Musicianship Skills 4* concurrently.

Theatre (025.2)

SOUTH

Associate of Science



This program prepares the student for transfer to a four-year institution with a broad college background and skill and knowledge in theatre or for employment in the field of performance. Students interested in pursuing a shorter program in the technical aspects of theatre should see the Technical Theatre Diploma Program in Applied Arts.

Upon successful completion of the program, the graduate will:

(A) Theatre—Acting

1. Define various theatrical forms and trends from cultural and historical perspectives.
2. Analyze a script in order to create a character on stage.
3. Apply appropriate vocal and physical techniques to acting performances.
4. Evaluate psychological dimensions of character and synthesize them with performances.
5. Analyze a professional theater production for form and content.

(B) Theatre—Technical Track

1. Develop materials necessary to stage manage a production, such as a prompt book or rehearsal schedule.
2. Develop a concept and execute a lighting design.
3. Synthesize elements of design and drama in order to construct scenery appropriate for a production.
4. Communicate effectively with various theater practitioners, such as the director, scene designer and technical director.
5. Construct both hard and soft theatrical flats.

(C) Dance

1. Use correct physical competencies, such as postural alignment, flexibility, kinesthetic awareness and cardiovascular capacity, while moving.
2. Define various dance forms and trends from cultural and historical perspectives.
3. Analyze a professional dance production for form and content.
4. Choreograph a dance with clear thematic development that illustrates the communicative potential of dance.
5. Be a contributing member of an ensemble working with a technical staff to produce a dance concert.

(continued)

Theatre (025.2) (continued)**Degree Requirements**

Students must choose one of the following fields of study:
A, B or C:

(A) Acting**First Semester Credits**

DAN-101	Modern Dance 1	3
ENG-101	English Composition 1	3
THE-101	Introduction to Theatre	3
THE-108	Acting 1	3
THE-121	Technical Theatre 1	3
		<u>15</u>

Second Semester

ENG-102	English Composition 2	3
SPH-101	Oral Communication	3
THE-104	Modern Drama	3
THE-109	Acting 2	3
THE-117	Theatre Production 1	3
	Theatre Elective	3
		<u>18</u>

Third Semester

SPH-102	Voice & Speech	3
THE-154	Introduction to Cinema	3
THE-210	Acting for Television	3
	Mathematics Elective	3-4
	Social Science Elective	3
		<u>15-16</u>

Fourth Semester

THE-119	Introduction to Stage Direction	3
THE-155	Improvisation	3
THE-403/6	Theatre Co-op	3-6
	Science Elective	3-4
	Theatre Elective	3
		<u>15-19</u>

Minimum Credits to Graduate 63-68

(B) Technical Theatre**First Semester**

DAN-101	Modern Dance 1	3
ENG-101	English Composition 1	3
THE-101	Introduction to Theatre	3
THE-108	Acting 1	3
THE-117	Theatre Production 1	3
THE-121	Technical Theatre 1	3
		<u>18</u>

Second Semester

ENG-102	English Composition 2	3
SPH-101	Oral Communication	3
THE-104	Modern Drama	3
THE-118	Theatre Production 2	3
THE-122	Technical Theatre 2	3
		<u>15</u>

Third Semester

THE-154	Introduction to Cinema	3
THE-210	Acting for Television	3
THE-222	Stage Make-up	3
THE-403	Theatre Co-op	3
	Mathematics Elective	3-4
	Social Science Elective	3
		<u>18-19</u>

Fourth Semester

THE-221	Introduction to Lighting Design	3
THE-223	Stage Management	3
	General Elective	3
	Science Elective	3-4
	Theatre Elective	3
		<u>15-16</u>

Minimum Credits to Graduate 66-68

(continued)

Theatre (025.2) (continued) (C) Dance

First Semester

	Credits
DAN-101 Modern Dance 1	3
ENG-101 English Composition 1	3
SPH-101 Oral Communication	3
THE-108 Acting 1	3
THE-121 Technical Theatre 1	<u>3</u>
	15

Second Semester

DAN-102 Modern Dance 2	3
ENG-102 English Composition 2	3
THE-101 Introduction to Theatre	3
Mathematics Elective	3-4
Theatre Elective(s)	<u>4-6</u>
	16-19

Third Semester

DAN-201 Modern Dance 3	3
THE-154 Introduction to Cinema	3
Science Elective	3-4
Theatre Electives (2)	<u>6</u>
	15-16

Fourth Semester

DAN-202 Modern Dance 4	3
THE-104 Modern Drama	3
General Elective	3
Social Science Elective	3
Theatre Elective	<u>3</u>
	15

Minimum Credits to Graduate

61-65

Technical Theatre (125)

SOUTH

Diploma

The Technical Theatre program provides students with an overview of the technical aspects of theater including theatrical terminology, scenic design, stage lighting, set construction, stage rigging and draperies, sound systems, and safety precautions that need to be taken when using hand and power tools and working in a theatre, on a movie set or for a television studio.

Upon completion of the program, graduates can obtain entry-level jobs as theatre set construction crew member or as a technical staff member for theatrical productions.

Upon successful completion of the program, the graduate will:

1. Develop materials necessary to stage manage a production, such as a prompt book or rehearsal schedule.
2. Develop a concept and execute a lighting design.
3. Synthesize elements of design and drama in order to construct scenery appropriate for a production.
4. Communicate effectively with various theater practitioners, such as the director, scene designer and technical director.
5. Construct both hard and soft theatrical flats.

Diploma Requirements

First Semester

	Credits
THE-101 Introduction to Theatre	3
THE-117 Theatre Production 1	3
THE-121 Technical Theatre 1	<u>3</u>
	9

Second Semester

THE-118 Theatre Production 2	3
THE-122 Technical Theatre 2	3
THE-221 Introduction to Lighting Design	<u>3</u>
	9

Minimum Credits to Graduate

18

Business Programs

Certificates and degrees in business prepare students for their first jobs in administration, aviation management, finance, foodservice, hospitality and tourism and legal offices..

CCAC encourages students to apply for both certificates and diplomas (where possible) as they work toward associate's degree requirements. Students should investigate baccalaureate programs as they advance in their chosen careers.

Information on specific courses in a selected academic program can be found at ccac.edu CCAC Central e-Services. That information includes the location, days, times, faculty member and required books and supplies. Note that some courses are only offered during alternate terms. The syllabus (a detailed course description) is available for many courses at <http://webapps.ccac.edu/MasterSyllabi/>



PA TRAC creates a seamless transfer and articulation process for students who earn degrees in specific programs and who transfer to PASSHE—Pennsylvania System of Higher Education institutions. CCAC's Business (004.2) is part of this agreement.



For more information, see www.pacollegetransfer.com/ **PA TRAC**

All courses should be chosen with the help of an academic advisor.

- Accounting (105) (Degree)
- Accounting Specialist (340) (Degree)
- Accounting (217) (Certificate)
- Administrative Assistant (785.1) (Degree)
- Aviation Management (378) (Degree)
- Aviation Technology (382.1) (Degree)
- Business (004.2) (Degree)¹
- Business—CCAC & Indiana University of Pennsylvania (097) (Degree)²
- Business Management (385.2) (Degree)
- Business Management (216.1) (Certificate)
- Court Reporter (327.3) (Degree)
- Court Reporting (329.3) (Certificate)
- Culinary Arts (670.1) (Degree)
- E-Commerce (221) (Certificate)
- Foodservice, Lodging & Recreation Management (405.2) (Degree)
- Foodservice Management (407.2) (Certificate)
- Land Administration (491.1) (Certificate)
- Lodging & Recreation Management (406.2) (Certificate)
- Paralegal (604.3) (Degree)
- Paralegal (605.3) (Certificate)
- Private Pilot (718) (Certificate)
- Tourism Management (423.3) (Degree)

¹University parallel program

²Collaborative agreement program

STUDENT NOTES

Accounting (105)

ALLEGHENY, BOYCE, NORTH, SOUTH
Associate of Science

This program prepares the student for transfer to a four-year institution with a broad college background and skill and knowledge in accounting.

Graduates may earn a bachelor's degree in Accounting or a related business field.

Upon successful completion of the program, the graduate will:

1. Explain the role and value of accounting in a business organization.
2. Demonstrate entry-level accounting skills and current knowledge of generally accepted accounting principles.
3. Analyze business transactions and determine their impact on financial statements.
4. Solve accounting problems using analysis and critical thinking.
5. Utilize accounting concepts and techniques to make management decisions.

Degree Requirements

First semester	Credits
ACC-104 Financial Accounting	4
ECO-102 Principles of Macroeconomics	3
ENG-101 English Composition 1	3
Computer Information Technology Elective	3–4
Social Science Elective	<u>3</u>
	16–17
Second Semester	
ACC-203 Managerial Accounting	4
ECO-103 Principles of Microeconomics	3
ENG-102 English Composition 2	3
Business Elective ¹	3
Mathematics Elective ²	<u>3–4</u>
	16–17
Third Semester	
ACC-201 Intermediate Accounting 1	3
MAT-120 Analytical Methods or Equivalent	3–4
SPH-101 Oral Communication	3
English Elective	3
Science Elective	<u>3–4</u>
	15–17

Fourth Semester

ACC-202 Intermediate Accounting 2	3
Business Elective ¹	3
General Elective	3
Humanities Elective	3
Social Science Elective	<u>3</u>
	15

Minimum Credits to Graduate 62–66

¹Students should take a minimum of six credits or two courses in the area of the bachelor's degree or related fields of knowledge. A second Computer Information Technology sciences (CIT) course is recommended.

²In selecting mathematics electives, business calculus and statistics is expected of third-year students. *MAT-195 Business Mathematics* does not fulfill this requirement.

Accounting Specialist (340)

ALLEGHENY, BOYCE, NORTH, SOUTH

Associate of Science

This program prepares the student for an entry-level position in accounting. Accounting firms, banks and the payroll and accounting departments of many businesses hire persons with an associate's degree in Accounting.

This program is designed to develop entry-level accounting skills for immediate employment after graduation.

Students enrolled in this program may earn cooperative education credits. For more information, contact the Accounting faculty.

Upon successful completion of the program, the graduate will:

1. Explain the role and value of accounting in a business organization.
2. Demonstrate entry-level accounting skills and current knowledge of generally accepted accounting principles.
3. Analyze business transactions and determine their impact on financial statements.
4. Solve accounting problems using analysis and critical thinking.
5. Utilize accounting concepts and techniques to make management decisions.

Degree Requirements

First Semester	Credits
ACC-104 Financial Accounting	4
BUS-101 Introduction to Business	3
ENG-101 English Composition 1	3
Computer Information Technology Elective	3–4
Mathematics Elective	<u>3–4</u>
	16–18
Second Semester	
ACC-203 Managerial Accounting	4
BUS-103 Principles of Management	3
ENG-102 English Composition 2	3
Economics Elective	3
Science Elective	<u>3–4</u>
	16–17
Third Semester	
SPH-101 Oral Communication	3
BUS-251 Business Law 1	3
Accounting Electives ¹ (2)	6
Business Elective	<u>3</u>
	15

Fourth Semester

Accounting Electives ¹ (2)	6
Business Elective	3
General Elective	3
Social Science Elective	<u>3</u>
	15

Minimum Credits to Graduate 62–65

¹Accounting Electives

ACC-100 Introduction to Accounting	3
ACC-110 Accounting Applications	3
ACC-120 Computer Applications in Accounting	3
ACC-201 Intermediate Accounting 1	3
ACC-202 Intermediate Accounting 2	3
ACC-204 Cost Accounting	3
ACC-210 Payroll and Tax Accounting	3
ACC-211 Principles of Tax 1	3
ACC-221 Principles of Tax 2	3

Accounting (217)

ALLEGHENY, BOYCE, NORTH, SOUTH
Certificate

The Accounting certificate program is designed for those students with some postsecondary educational background seeking entry-level positions in the accounting field or those already employed in the field seeking to enhance their skills. Cooperative education credits may be available to those who qualify.

Upon successful completion of the program, the graduate will:

1. Explain the role and value of accounting in a business organization.
2. Demonstrate entry-level accounting skills and current knowledge of generally accepted accounting principles.
3. Analyze business transactions and determine their impact on financial statements.
4. Solve accounting problems using analysis and critical thinking.
5. Utilize accounting concepts and techniques to make management decisions.

Certificate Requirements

First Semester

	Credits
ACC-104 Financial Accounting	4
Business Elective	3
Computer Information Technology Elective	<u>3-4</u>
	10-11

Second Semester

ACC-203 Managerial Accounting	4
ACC-120 Computer Applications in Accounting	3
CIT-140 Office Productivity Applications	<u>4</u>
	11

Third Semester

Accounting Electives (3)	9
Business Elective	<u>3</u>
	12

Minimum Credits to Graduate **33-34**

NOTE: *ENG-100* or the equivalent is required for program entry.

Administrative Assistant (785.1)

ALLEGHENY, BOYCE, NORTH, SOUTH
Associate of Applied Science

This program prepares students to be administrative assistants through the effective use of essential business skills, technology skills and office administration skills. Upon completion of the program, graduates may seek employment as a secretary or administrative assistant in a business, medical, legal, educational, governmental or industrial office.

Upon successful completion of the program, the graduate will:

1. Apply conventional office management techniques.
2. Apply essential information technology skills within an office environment.
3. Use various computer applications to create properly formatted business documents.
4. Organize work flow and coordinate office activities.

Degree Requirements

First Semester

	Credits
CIT-100 Computer Fundamentals and Applications	3
CIT-102 Computer Keyboarding	3
ENG-101 English Composition 1	3
PSY-101 Introduction to Psychology	3
Mathematics Elective	<u>3-4</u>
	15-16

Second Semester

BUS-130 Business Communications	3
CIT-140 Office Productivity Applications	4
CIT-141 Word Processing	3
ENG-102 English Composition 2	3
SPH-101 Oral Communication	<u>3</u>
	16

Third Semester

CIT-115 Introduction to Information Technology	3
CIT-142 Desktop Publishing Concepts	3
CIT-607 Office Management Outlook	1
Accounting Elective	<u>3-4</u>
Restricted Electives ¹ (2)	<u>6</u>
	16-17

(continued)

Administrative Assistant (785.1) (Continued)

Fourth Semester

CIT-206	Administrative Technology and Procedures	3
	Restricted Electives ¹ (3)	9
	Science Elective	<u>3-4</u>
		15-16

Minimum Credits to Graduate: 62-65

¹Restricted Electives (five required) Credits

ALH-140	Medical Terminology	3
BUS-103	Principles of Management	3
BUS-108	Principles of Finance	3
BUS-140	Introduction to E-commerce	3
BUS-200	Principles of Supervision	3
BUS-251	Business Law 1	3
MDA-208	Medical Financial Management	3
MDT-101	Medical Transcription 1	3
PAL-101	Legal Research and Writing	3
PAL-105	Family Law	3
PAL-111	Litigation 1	3
PAL-121	Estates and Trusts 1	3

Students considering a career path as a general administrative assistant should take the following restricted electives: *BUS-103*, *BUS-108*, *BUS-140* and *BUS-200*.

Students considering a career path as a legal office administrative assistant should take the following restricted electives: *PAL-101*, *PAL-111*, *PAL-105* and *PAL-121*.

Students considering a career path as a medical office administrative assistant should take the following restricted electives: *ALH-140*, *MDA-208* and *MDT-101*.

Aviation Management (378)

SOUTH

Associate of Science

This program prepares you for a career in aviation marketing, sales, finance personnel, office operation or administration. Employment opportunities exist at private and public airports, with government agencies, airlines, air cargo carriers and fixed base operations (FBO).

Upon successful completion of the program, the graduate will:

1. Demonstrate flight competency and exceed FAA minimum requirements of pilot proficiency in the required aircraft.
2. Identify and analyze adverse meteorological conditions.
3. Demonstrate operating a corporate flight department, evaluating flight operations, negotiating with pilots and developing crew management.
4. Apply safety guidelines and demonstrate fiscal responsibilities.
5. Demonstrate administrative duties that include safety department skills and regulation compliance with risk management evaluation.

Graduates are prepared for work as airport fixed base operators, aviation airport managers, airline operations managers, flight school managers, aircraft manufacturers' representatives, aviation equipment company managers and government agency aviation managers.

An FAA Class III Medical Certificate is required for enrollment in this program.

Degree Requirements

First Semester		Credits
ACC-104	Financial Accounting	4
AVT-101	Private Pilot Theory	3
BUS-101	Introduction to Business	3
ENG-101	English Composition 1	3
	Mathematics Elective	<u>3-4</u>
		16-17

Second Semester

ACC-203	Managerial Accounting	4
AVT-103	Air Traffic Control System	3
BUS-103	Principles of Management	3
CIT-140	Office Productivity Applications	4
ENG-102	English Composition 2	<u>3</u>
		17

(continued)

Aviation Management (378) (Continued)

Third Semester

AVT-105	Flight—Private or	3
BUS-104	Principles of Marketing	3
BUS-108	Principles of Finance	3
BUS-212	Principles of Selling or	3
	Marketing Elective	3
	Science Elective	3–4
	Social Science Elective	3
		15–16

Fourth Semester

AVT-110	Aviation Meteorology	3
BUS-130	Business Communications	3
BUS-201	Human Resource Management	3
BUS-251	Business Law 1	3
	Humanities Elective	3
		15

Minimum Credits to Graduate **63–65**

Aviation Technology (382.1)

SOUTH

Associate of Science

This program trains you to meet the requirements for a Federal Aviation Administration (FAA) Commercial Pilot Single/Multi-engine Land License with an Instrument rating.

Upon successful completion of the program, the graduate will:

1. Demonstrate flight competency and exceed FAA minimum requirements of pilot proficiency in the required aircraft.
2. Identify, analyze and operate in adverse meteorological conditions.
3. Synthesize and apply new and existing technologies in the field of aviation.
4. Apply crew resource management skills and demonstrate professional appearance.
5. Define professional, ethical and social responsibilities of aviation professionals as they relate to the regional and national community.

A minimum of a second-class medical is required for program entry. Flight instruction for the student is through a college-approved, FAA and Veterans Administration certified FAR141 fixed base operator. All flight-training fees are in addition to college tuition and fees.

Upon completion of this program, graduates may find employment as a corporate/charter pilot, freight pilot, flight instructor or an aerial/geographic mapping pilot. Preliminary training for military pilot is also provided. In some areas, additional schooling may be required and students can transfer to a four-year college.

Degree Requirements

First Semester		Credits
AVT-101	Private Pilot Theory	3
AVT-103	Air Traffic Control Systems	3
AVT-105	Flight/Private	3
ENG-101	English Composition 1	3
MAT-114	Mathematics for the Technologies 1	4
		16
Second Semester		
AVT-110	Aviation Meteorology	3
AVT-111	Flight Theory/Instrument	3
AVT-115	Flight/Instrument	3
AVT-116	Navigation	3
ENG-102	English Composition 2	3
		15

(continued)

Aviation Technology (382.1) (Continued)

Third Semester

AVT-201	Aircraft Systems	3
AVT-205	Flight/Commercial 1	4
AVT-211	Flight Theory/Commercial	4
PHY-113	Technical Physics 1	3
	Social Science Elective	<u>3</u>
		17

Fourth Semester

AVT-215	Flight/Commercial 2	4
AVT-216	Flight Safety	3
AVT-217	Legal Environment of Aviation	3
AVT-225	Multi-engine Flight	1
SET-105	Technical Computing	3
	Humanities Elective	<u>3</u>
		17

Minimum Credits to Graduate **65**

Business (004.2)

ALLEGHENY, BOYCE, NORTH, SOUTH
Associate of Science



This university parallel program provides the freshman and sophomore foundations of a baccalaureate business degree. Students should select specialized courses with their major field of concentration as identified by their transfer college or university.

Upon successful completion of the program, the graduate will:

1. Demonstrate business concepts in the areas of marketing, management, finance, accounting and the external business environments.
2. Explain major concepts and elements of the global environment.
3. Solve business problems through analysis and critical thinking.
4. Demonstrate competency in oral and written communications such as standard business communications, memos, programs and reports.
5. Discriminate between valid and invalid sources of information as a means of reporting on current trends in business.

Graduates may earn a bachelor's degree and prepare for graduate training in many business fields.

Degree Requirements

First Semester	Credits
ACC-104 Financial Accounting	4
ENG-101 English Composition 1	3
Computer Information Technology	
Elective	3-4
Major Field Elective ¹	3
Mathematics Elective ²	<u>3-4</u>
	16-18
Second Semester	
ACC-203 Managerial Accounting	4
ECO-102 Principles of Macroeconomics	3
ENG-102 English Composition 2	3
Major Field Elective ¹	3-4
Social Science Elective	<u>3</u>
	16-17
Third Semester	
ECO-103 Principles of Microeconomics	3
SPH-101 Oral Communication	3
Major Field Electives ¹ (2)	6-8
Social Science Elective	<u>3</u>
	15-17

(continued)

Business (004.2) (Continued)

Fourth Semester

Humanities Elective	3
Major Field Elective ¹ (1-2)	3-6
Mathematics Elective ²	3-4
Science/Lab Elective ³	3-4 13-17

Minimum Credits to Graduate 60-69

¹Major Field Electives: Non-TAOC participating institutions students must complete a minimum of 18 credit or six courses in the area of the bachelor's degree or related field of knowledge. Electives should be selected in consultation with a transfer counselor.

Students transferring to a TAOC participating-institution must complete the following courses as Major Field Electives.

BUS-103	Principles of Management	3
BUS-104	Principles of Marketing	3
BUS-251	Business Law 1	3
	Humanities elective	3
	Science elective with a lab	4 16

²Required Mathematics electives for students transferring to a TAOC participating-institution:

MAT-165	Probability and Statistics or	4
MAT-161	Elementary Statistics	3
MAT-201	Calculus 1 or	4
MAT-220	Business Calculus	4 7-8

Required Mathematics electives for students who **are not** intending to transfer to a TAOC participating-institution:

MAT-120	Analytical Methods or Departmental approved mathematics course.	3
MAT-108	Intermediate Algebra or	4
MAT-165	Probability and Statistics or	4
MAT-220	Business Calculus	4 7

MAT-195, Business Mathematics **will not satisfy** the mathematics requirements in Business (004.2).

³It is recommended for students who are unsure where they are transferring to take a four credit lab science class.

Business-CCAC & Indiana University of PA (097)

ALL CCAC CAMPUSES AND IUP

Associate of Science (CCAC)

Bachelor of Science (IUP)

(See below for Bachelor Degree Tracks available) Students in this instructional program will be considered jointly enrolled in both institutions, once they qualify for admission and will continue as joint institutional students until they complete the program. This program is limited to CCAC students who are candidates for the Associate of Science degree in the University Parallel Business Program.

A: Bachelor of Science – IUP Accounting

B: Bachelor of Science – IUP General Management

C: Bachelor of Science – IUP Marketing

D: Bachelor of Science – IUP double major in General Management and Human Resource Management

E: Bachelor of Science – IUP, double major in General Management and Marketing

Suggested CCAC Course Sequence

Freshman, First Semester		Credits
ACC-104	Financial Accounting	4
ECO-102	Principles of Macroeconomics	3
ENG-101	English Composition 1	3
ART-106	Art Appreciation or	3
MUS-101	Introduction to Music or	3
THE-101	Introduction to Theatre	3
CIT-100	Introduction to Computers or	3
CIT-140	Office Productivity Applications	4 16-17

Freshman, Second Semester

ACC-203	Managerial Accounting	4
ECO-103	Principles of Microeconomics	3
ENG-102	English Composition II	3
ANT-101	Introduction to Anthropology or	3
ANT-102	Cultural Anthropology or	3
GEO-101	World Geography	3
PHL-101	Introduction to Philosophy or	3
PHL-103	Logic or	3
PHL-111	Religions of the World or	3
PHL-155	Ethics	3 16

(continued)

Business–CCAC & Indiana University of PA (097)

Sophomore, First Semester

BUS-103	Principles of Management	3
BUS-251	Business Law	3
MAT-165	Probability and Statistics or	4
BUS-122	Business Statistics	3
PSY-101	Introduction to Psychology	3
SPH-101	Oral Communications	3
	Free Elective	2

17-18

Sophomore, Second Semester

BUS-104	Principles of Marketing	3
ENG-115	General Literature or	3
ENG-209	World Literature to 1650 or	3
ENG-210	World Lit from 1650 to Present	3
HIS-101	History of Western Civilization 1 or	3
HIS-102	History of Western Civilization 2 or	3
HIS-104	United States History 1 or	3
HIS-105	United States History 2 or	3
HIS-213	Twentieth Century World History	3
MAT 220	Business Calculus	4
	Natural Science without Lab ¹	3

16

Junior, First Semester

HPE-171	Health and Wellness or	3
BUS-110	Personal Finance	3
	Natural Science with Lab	4

7

Junior, Second Semester

BUS-240	Small Business Management	3
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TOTAL CCAC CREDITS

75 -77

¹BIO-117 *Introduction to Nutrition* may not be used as a non-lab science

(A) Bachelor of Science Accounting

IUP courses are offered on a rolling basis and the starting sequence may differ depending on the semester of enrollment All IUP Courses taught at Boyce Campus.

IUP Courses Suggested Sequence

Junior, First Semester (Please review additional CCAC requirements also)

QBUS 215	Business Statistics	3
ACCT 304	Intermediate Accounting I	3

6

Junior, Second Semester (Please review additional CCAC requirements also)

ACCT 305	Intermediate Accounting II	3
ACCT 311	Cost Accounting	3
FIN 310	Fundamentals of Finance	3
	Economics/Management/ Marketing Elective	3

12

Senior, First Semester

ACCT 401	Advanced Accounting	3
ACCT 421	Federal Tax I	3
BCOM 321	Business and Interpersonal Comm.	3
IFMG 300	Info. Systems: Theory and Practice	3
MGMT 330	Production and Operations	3

15

Senior, Second Semester

ACCT 431	Auditing	3
MGMT 495	Business Policy	3
	Accounting Electives (2)	6

12

IUP Total Credits

45

CCAC Credits

75-77

Total CCAC and IUP Credits

120-122

(B) Bachelor of Science General Management

IUP courses are offered on a rolling basis and the starting sequence may differ depending on the semester of enrollment All IUP Courses taught at Boyce Campus.

IUP Courses Suggested Sequence

Junior, First Semester (Please review additional CCAC requirements also)

MGMT300	Human Resource Management	3
MGMT 330	Production and Operations Mgmt	3
QBUS 215	Business Statistics	3

9

Junior, Second Semester (Please review additional CCAC requirements also)

MGMT 311	Human Behavior in Organizations	3
MGMT 434	Quality Management	3
MGMT 451	International Management	3
	MGMT Elective	3

12

Senior, First Semester

BCOM 321	Business and Interpersonal Comm.	3
ECON 330	Labor Economics	3
FIN 310	Fundamentals of Finance	3
IFMG 300	Info. Systems: Theory and Practice	3

12

Business–CCAC & Indiana University of PA (097) (continued)

B: Bachelor of Science General Management (continued)

Senior, Second Semester

MGMT 428 Seminar in Management	3
MGMT 495 Business Policy	3
MGMT/MKTG Electives (2)	6
	12

IUP Total Credits	45
CCAC Credits	75-77

Total CCAC and IUP Credits	120-122
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(C) Bachelor of Science Marketing

IUP courses are offered on a rolling basis and the starting sequence may differ depending on the semester of enrollment All IUP Courses taught at Boyce Campus.

IUP Courses Suggested Sequence

Junior, First Semester **Credits**
(Please review additional CCAC requirements also)

MGMT 330 Production and Operations Mgmt.	3
MKTG 321 Consumer Behavior	3
QBUS 215 Business Statistics	3
	9

Junior, Second Semester
(Please review additional CCAC requirements also)

MKTG 421 Marketing Research	3
MKTG 430 International Marketing	3
MKTG 431 Business to Business Marketing	3
MKTG/MGMT Elective	3
	12

Senior, First Semester

BCOM 321 Business and Interpersonal Comm.	3
FIN 310 Fundamentals of Finance	3
IFMG 300 Info. Systems: Theory and Practice	3
MKTG 435 Professional Selling and Sales MGMT.	3
	12

Senior, Second Semester

MKTG 450 Marketing Strategy	3
MGMT 495 Business Policy	3
MKTG Elective	3
MKTG/MGMT Elective	3
	12

IUP Credits	45
CCAC Credits	75-77

Total Minimum Credits to Graduate	120-122
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(D) Bachelor of Science General Management & Human Resource Management (Double Major)

IUP courses are offered on a rolling basis and the starting sequence may differ depending on the semester of enrollment All IUP Courses taught at Boyce Campus.

IUP Courses Suggested Sequence
Junior, First Semester **Credits**
(Please review additional CCAC requirements also)

MGMT 300 Human Resource Management	3
MGMT 330 Production and Operations Mgmt.	3
QBUS 215 Business Statistics	3
	9

Junior, Second Semester
(Please review additional CCAC requirements also)

MGMT 401 Management Dev. and Training	3
MGMT 400 Compensation Management	3
MGMT 434 Quality Management	3
MGMT 451 International Management	3
	12

Senior, First Semester

IFMG 300 Info. Systems: Theory and Practice	3
BCOM 321 Business and Interpersonal Comm.	3
ECON 330 Labor Economics	3
FIN 310 Fundamentals of Finance	3
	12

Senior, Second Semester

MGMT 428 Seminar in Management	3
MGMT 311 Human Behavior in Organizations	3
MGMT 405 Organizational Staffing	3
MGMT 495 Business Policy	3
	12

IUP Credits	45
CCAC Credits	75-77

Total CCAC and IUP Credits	120-122
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(continued)

Business–CCAC & Indiana University of PA (097) (continued)

(E) Bachelor of Science in General Management & Marketing (double major)

IUP courses are offered on a rolling basis and the starting sequence may differ depending on the semester of enrollment All IUP Courses taught at Boyce Campus

Junior, First Semester	Credits
MGMT 300 Human Resource Management	3
MGMT 330 Production and Operations Mgmt.	3
QBUS 215 Business Statistics	$\frac{3}{9}$
Junior, Second Semester	
MGMT 311 Human Behavior in Organizations	3
MGMT 451 International Management	3
MKTG 321 Consumer Behavior	3
MKTG 421 Marketing Research	$\frac{3}{12}$
Senior, First Semester	
IFMG 300 Info. Systems: Theory and Practice	3
BCOM 321 Business and Interpersonal Comm	3
ECON 330 Labor Economics	3
MGMT 434 Quality Mgmt	3
MKTG 430 International Marketing	$\frac{3}{15}$
Senior, Second Semester	
FIN 310 Fundamentals of Finance	3
MGMT 428 Seminar in Management	3
MKTG 431 Business to Business Marketing	3
MKTG 435 Professional Selling and Sales Mgmt	$\frac{3}{12}$
Senior, Third Semester	
MGMT 495 Business Policy	3
MKTG 450 Marketing Strategy	3
MGMT Elective	3
MKTG Elective	$\frac{3}{12}$
Minimum IUP Credits	60
CCAC Credits	75 -77
Total Minimum Credits to Graduate	135-137

Business Management (385.2)

ALLEGHENY, BOYCE, NORTH, SOUTH
Associate of Science

This program prepares the student for an entry-level position dealing with business principles, procedures and problems. Graduates may qualify for a training program in business and industry, government or nonprofit organizations. Graduates may find jobs in several functional areas including, but not limited to, marketing, finance, human resource management or administrative areas of business.

This program is also appropriate for employees in entry-level management positions who seek to enhance their job skills by developing in-depth knowledge and managerial skills in planning, motivating, organizing and controlling resources. Students enrolled in this program may earn three pass-fail cooperative credits.

Upon successful completion of the program, the graduate will:

1. Demonstrate business concepts in the areas of marketing, management, finance, accounting and the external business environments.
2. Explain major concepts and elements of the global environment.
3. Solve business problems through analysis and critical thinking.
4. Demonstrate competency in oral and written communications such as standard business communications, memos, programs and reports.
5. Discriminate between valid and invalid sources of information as a means of reporting on current trends in business.

Students must choose one of the following fields of study, **A, B, C or D.**

(continued)

Business Management (385.2) (Continued)

(A) General Option

Degree Requirements

First Semester

ACC-104	Financial Accounting	4
BUS-101	Introduction to Business	3
ENG-101	English Composition 1	3
	Computer Technology Elective ¹	3-4
	Social Science Elective ²	<u>3-4</u>
		16-18

Second Semester

ACC-203	Managerial Accounting	4
BUS-103	Principles of Management	3
ECO-102	Principles of Macroeconomics	3
ENG-102	English Composition 2	3
	Mathematics Elective	<u>3-4</u>
		16-17

Third Semester

BUS-104	Principles of Marketing	3
SPH-101	Oral Communication	3
	Business Course	3
	Restricted Elective ³	3-4
	Science Elective	<u>3-4</u>
		15-17

Fourth Semester

BUS-251	Business Law 1	3
	Business Course	3
	Business Electives	3
	General Electives	<u>6</u>
		15

Minimum Credits to Graduate **62-67**

¹Any 3 or 4 credit CIT course can be used.

²PSY-101, *Introduction to Psychology*, highly recommended.

³Restricted Electives (Choose one of the following)

ACC-110	Accounting Applications
ACC-120	Computer Applications in Accounting
BUS-130	Business Communications
CIT-140	Office Productivity Applications

(B) Corporate Option

Degree Requirements

First Semester

ACC-104	Financial Accounting	4
BUS-101	Introduction to Business	3
ENG-101	English Composition 1	3
	Computer Technology Elective ¹	3-4
	Social Science Elective ²	<u>3-4</u>
		16-18

Second Semester

ACC-203	Managerial Accounting	4
BUS-103	Principles of Management	3
ECO-102	Principles of Macroeconomics	3
ENG-102	English Composition 2	3
	Mathematics Elective	<u>3-4</u>
		16-17

Third Semester

BUS-104	Principles of Marketing	3
SPH-101	Oral Communication	3
	Restricted Elective ³	3-4
	Science Elective	3-4
	Specialized Elective ⁴	<u>3</u>
		15-17

Fourth Semester

BUS-251	Business Law 1	3
	General Elective	3
	Specialized Electives ⁴	<u>2</u>
		15

Minimum Credits to Graduate **62-67**

¹Any 3 or 4 credit CIT course can be used.

²PSY-101, *Introduction to Psychology*, highly recommended.

³Restricted Electives (Choose one of the following)

ACC-110	Accounting Applications
ACC-120	Computer Applications in Accounting
BUS-130	Business Communications
CIT-140	Office Productivity Applications

⁴Specialized Electives (Choose four of the following)

BUS-108	Principles of Finance
BUS-201	Human Resource Management
BUS-221	Production Management
BUS-245	International Business
ECO-103	Principles of Microeconomics

(continued)

Business Management (385.2) (Continued)

(C) Marketing Option

Degree Requirements

First Semester

ACC-104	Financial Accounting	4
BUS-101	Introduction to Business	3
ENG-101	English Composition 1	3
	Computer Technology Elective ¹	3-4
	Social Science Elective ²	<u>3-4</u>
		16-18

Second Semester

ACC-203	Managerial Accounting	4
BUS-103	Principles of Management	3
ECO-102	Principles of Macroeconomics	3
ENG-102	English Composition 2	3
	Mathematics Elective	<u>3-4</u>
		16-17

Third Semester

BUS-104	Principles of Marketing	3
SPH-101	Oral Communication	3
	Restricted Elective ³	3-4
	Science Elective	3-4
	Specialized Electives ⁴	<u>3</u>
		15-17

Fourth Semester

BUS-251	Business Law 1	3
	General Elective	3
	Specialized Electives ⁴	<u>2</u>
		15

Minimum Credits to Graduate **62-67**

¹Any 3 or 4 credit CIT course can be used

²PSY-101, *Introduction to Psychology*, highly recommended

³Restricted Electives (Choose one of the following)

ACC-110	Accounting Applications
ACC-120	Computer Applications in Accounting
BUS-130	Business Communications
CIT-140	Office Productivity Applications

⁴Specialized Electives (Choose four of the following)

BUS-117	Public Relations
BUS-143	Internet Marketing
BUS-210	Principles of Retailing
BUS-211	Principles of Advertising
BUS-212	Principles of Selling

(D) Small Business Option

Degree Requirements

First Semester

ACC-104	Financial Accounting	4
BUS-101	Introduction to Business	3
ENG-101	English Composition 1	3
	Computer Technology Elective ¹	3-4
	Social Science Elective ²	<u>3-4</u>
		16-18

Second Semester

ACC-203	Managerial Accounting	4
BUS-103	Principles of Management	3
ECO-102	Principles of Macroeconomics	3
ENG-102	English Composition 2	3
	Mathematics Elective	<u>3-4</u>
		16-17

Third Semester

BUS-104	Principles of Marketing	3
SPH-101	Oral Communication	3
	Restricted Elective ³	3-4
	Science Elective	3-4
	Specialized Elective ⁴	<u>3</u>
		15-17

Fourth Semester

BUS-251	Business Law 1	3
	General Elective	3
	Specialized Electives ⁴	<u>2</u>
		15

Minimum Credits to Graduate **62-67**

¹Any 3 or 4 credit CIT course can be used

²PSY-101, *Introduction to Psychology*, highly recommended

³Restricted Electives (Choose one of the following)

ACC-110	Accounting Applications
ACC-120	Computer Applications in Accounting
BUS-130	Business Communications
CIT-140	Office Productivity Applications

⁴Specialized Electives (Choose four of the following)

ACC-110	Accounting Applications or
ACC-120	Computer Applications in Accounting
BUS-200	Principles of Supervision
BUS-210	Principles of Retailing
BUS-212	Principles of Selling
BUS-240	Small Business Management 1

Business Management (216.1)

ALLEGHENY, BOYCE, NORTH, SOUTH

Certificate

This certificate program is designed for students who are currently employed and seeking to enhance their skills or students with some postsecondary educational background who are preparing for an entry-level position in business or industry. Cooperative education credits may be available to those who qualify.

Upon successful completion of the program, the graduate will:

1. Demonstrate business concepts in the areas of marketing, management, finance, accounting and the external business environments.
2. Explain major concepts and elements of the global environment.
3. Solve business problems through analysis and critical thinking.
4. Demonstrate competency in oral and written communications such as standard business communications, memos, programs and reports.
5. Discriminate between valid and invalid sources of information as a means of reporting on current trends in business.

Certificate Requirements

First Semester		Credits
ACC-104	Financial Accounting	4
BUS-101	Introduction to Business	3
BUS-103	Principles of Management	3
ECO-102	Principles of Macroeconomics	3
	Restricted Elective ¹	<u>3-4</u>
		16-17

Second Semester

ACC-203	Managerial Accounting	4
BUS-104	Principles of Marketing	3
BUS-251	Business Law 1	3
	Business Electives	<u>6</u>
		16

Minimum Credits to Graduate **32-33**

¹ Restricted Electives		
	Business Elective	3
	Computer Information Technology Elective	3-4

Court Reporter (327.3)

ALLEGHENY

Associate of Science

The Court Reporter program is designed to prepare students for verbatim court reporting. Included is instruction in: machine shorthand; transcription; legal and court procedures; medical and legal terminology; and computer aided transcription.

Graduates qualify for many jobs. Shorthand reporters work wherever a true record of the proceedings is needed such as in the courts, governmental agencies, Congress, state legislatures, the United Nations, freelance agencies and industry. In addition, career opportunities are available in broadcast captioning and CART (Computer assisted realtime translation). Students must begin this program in the fall term as program courses are offered once a year.

Upon successful completion of the program, the graduate will:

1. Demonstrate machine shorthand competency and meet the NCRA Requirement of 95% accuracy in shorthand proficiency through successful completion of three, five minute tests with 95% accuracy at each of the following speeds: 225 words per minute testimony (two-voice), 200 words per minute jury charge and 180 words per minute literary.
2. Apply realtime writing skills to an internship experience wherein a 40-page error free transcript will be produced.
3. Define professional, ethical and social responsibilities of court reporting professionals as they relate to the judicial and broadcast captioning community.
4. Apply new and existing technologies in the field of court reporting.

Degree Requirements

First Semester		Credits
CRT-100	Court Reporting Orientation	1
CRT-101	Court Reporting 1	4
CRT-103	Machine Shorthand Theory	4
ENG-101	English Composition 1	3
MAT-195	Business Mathematics	<u>3</u>
		15

(Continued)

Court Reporter (327.3) (Continued)**Second Semester**

CRT-102	Court Reporting 2	3
CRT-104	Speedbuilding	3
CRT-111	Court Transcription 1	3
CRT-205	Machine Shorthand Companion	3
ENG-102	English Composition 2	3
	Humanities Elective	3
		18

Summer

CRT-106	Question and Answer 1	3
CRT-107	Jury Charge 1	3
CRT-108	Literary 1	3
		9

Third Semester

ALH-140	Medical Terminology	3
CRT-206	Question and Answer 2	3
CRT-207	Jury Charge 2	3
CRT-208	Literary 2	3
CRT-211	Court Transcription 2	3
	Science Elective	3
		18

Fourth Semester

BUS-251	Business Law 1	3
CRT-216	Question and Answer 3	3
CRT-217	Jury Charge 3	3
CRT-218	Literary 3	3
	Social Science Elective	3
		15

Summer

CRT-226	Question and Answer 4	3
CRT-227	Jury Charge 4	3
CRT-228	Literary 4	3
CRT-252	Court Reporting Internship	3
		12

Minimum Credits to Graduate 87

Court Reporting (329.3)

ALLEGHENY

Certificate

This program is designed to prepare students with prior college training or related work experience for verbatim court reporting. Included is instruction in machine shorthand and transcription, legal and court procedures and computer-aided transcription (CAT). Students who complete the certificate program qualify for many jobs. Shorthand reporters work wherever a true record of the proceedings is needed such as in the courts, governmental agencies, Congress, state legislatures, the United Nations, free-lance agencies and industry. Students must begin this program in the fall term as program courses are offered once a year.

Upon successful completion of the program, the graduate will:

1. Demonstrate machine shorthand competency and meet the NCRA Requirement of 95% accuracy in shorthand proficiency through successful completion of three, five minute tests with 95% accuracy at each of the following speeds: 225 words per minute testimony (two-voice), 200 words per minute jury charge, and 180 words per minute literary.
2. Apply realtime writing skills to an internship experience wherein a 40-page error free transcript will be produced.
3. Define professional, ethical and social responsibilities of court reporting professionals as they relate to the judicial and broadcast captioning community
4. Apply new and existing technologies in the field of court reporting.

Certificate Requirements**First Semester**

		Credits
CRT-100	Court Reporting Orientation	1
CRT-101	Court Reporting 1	4
CRT-103	Machine Shorthand Theory	4
		9

Second Semester

CRT-102	Court Reporting 2	3
CRT-104	Speedbuilding	3
CRT-111	Court Transcription 1	3
CRT-205	Machine Shorthand Companion	3
		12

(Continued)

Court Reporting (329.3)(continued) Culinary Arts (670.1)

Summer

CRT-106	Question and Answer 1	3
CRT-107	Jury Charge 1	3
CRT-108	Literary 1	<u>3</u>
		9

Third Semester

ALH-140	Medical Terminology	3
CRT-206	Question and Answer 2	3
CRT-207	Jury Charge 2	3
CRT-208	Literary 2	3
CRT-211	Court Transcription 2	<u>3</u>
		15

Fourth Semester

BUS-251	Business Law 1	3
CRT-216	Question and Answer 3	3
CRT-217	Jury Charge 3	3
CRT-218	Literary 3	<u>3</u>
		12

Summer

CRT-226	Question and Answer 4	3
CRT-227	Jury Charge 4	3
CRT-228	Literary 4	3
CRT-252	Courtroom Internship	<u>3</u>
		12

Minimum Credits to Graduate

69

ALLEGHENY

Associate of Applied Science

This culinary arts non-apprenticeship curriculum is planned to meet the increasing employment needs in the 21st century for trained chefs and culinary experts. The program includes classroom and food laboratory experiences and requires students to complete an externship with a minimum of 300 hours. This program accommodates both part- and full-time students. Students are expected to be well-groomed in compliance with standards of sanitation. Uniforms will be required for all lab classes. Only students officially enrolled in the program may take CLR courses.

Degree Requirements

First Semester

		Credits
CLR-100	Introduction to Foodservice	3
CLR-110	Applied Foodservice Sanitation and Safety	3
CLR-117	Applied Science of Culinary Arts Theory	3
CLR-201	Baking 1	3
ENG-101	English Composition 1	<u>3</u>
		15

Second Semester

CLR-102	Food and Beverage Service	3
CLR-118	Applied Science of Culinary Arts Practice	3
CLR-202	Foodservice Specialities Garde-Manger 1	3
CLR-210	Baking 2	3
ENG-102	English Composition 2 or	3
ENG-103	Technical Communications	3
MAT-195	Business Mathematics	<u>3</u>
		18

Summer

CLR-119	Elements of Nutrition	3
CLR-211	Menu Design	<u>3</u>
		6

Third Semester

CLR-105	Supervision and Training	3
CLR-203	Foodservice Specialities Garde-Manger 2	3
CLR-220	Applied Foodservice Production	3
PSY-101	Introduction to Psychology	3
SPH-101	Oral Communication	<u>3</u>
		15

(Continued)

Culinary Arts (670.1) (continued)

Fourth Semester

BIO-100	Life Science	3
CLR-205	Purchasing Procedures	3
CLR-228	Advanced Food Preparation	3
CLR-230	Culinary Arts Externship 1	4
		13

Minimum Credits to Graduate 67

E-commerce (221)

ALLEGHENY

Certificate

This certificate is designed to introduce students to the world of e-commerce and related business principles. This includes the fundamentals of business processes such as marketing and accounting as well as basic computer programming such as java and web development associated with Internet technology. Students learn the theories and concepts of e-commerce and are taught to utilize methods and techniques peculiar to that area.

Upon successful completion of the program, the graduate will:

1. Apply the basic principles of e-commerce to a business entity
2. Create web pages to support e-commerce activities.
3. Develop an Internet marketing plan.
4. Apply fundamental accounting cycle principles.
5. Select business solutions needed for the implementation of e-commerce activities.

Certificate Requirements

First Semester	Credits
BUS-104 Principles of Marketing	3
BUS-140 Introduction to E-commerce	3
CIT-111 Introduction to Programming: Java	4
	10

Second Semester

ACC-100 Introduction to Accounting	3
BUS-143 Internet Marketing	3
CIT-125 Web Development	3
	9

Minimum Credits to Graduate 19

Foodservice, Lodging & Recreation Management (405.2)

BOYCE

Associate of Science

This is a program designed to prepare graduates for entry or advancement in the foodservice, lodging or recreation management industry.

Upon successful completion of the program, the graduate will:

1. Apply the skills for employment as a manager of various hospitality operations including spas, foodservice facilities, lodging facilities, campgrounds, healthcare, casinos, cruise ships, bed and breakfasts, stadiums, amusement parks, catering and school food service.
2. Communicate, select, train, manage and motivate employees.
3. Plan, arrange, organize and evaluate operations of foodservice, lodging and recreation management events.
4. Utilize industry terminology, employ financial controls and legal aspects of the foodservice, lodging and recreation management industry.
5. Employ professional, ethical behavior, utilizing effective communication and interpersonal skills.

Degree Requirements

First Semester		Credits
ENG-101	English Composition 1	3
FLR-101	Introduction to Foodservice, Lodging and Recreation Management	3
FLR-102	Foodservice 1	3
FLR-108	Safety and Sanitation	3
MAT-195	Business Mathematics	<u>3</u>
		15
Second Semester		
CIT-100	Computer Fundamentals and Applications	3
ENG-102	English Composition 2	3
FLR-109	Foodservice Management	3
FLR-110	Hospitality Control Systems	3
FLR-225	Quantity Foods Production	<u>4</u>
		16
Summer		
FLR-155	Hospitality Seminar 1	<u>3</u>
		3

Third Semester

BIO-117	Introduction Nutrition or	3
BIO-140	Food Microbiology	3
FLR-106	Introduction to Casino Gaming	3
FLR-201	Front Office Operations	3
FLR-203	Hospitality Sales and Marketing	3
SPH-101	Oral Communication	<u>3</u>
		15

Fourth Semester

ACC-100	Introduction to Accounting	3
FLR-103	Housekeeping and Maintenance Operations	3
FLR-105	Human Resources and Ethical Practices	3
FLR-120	Hospitality Law	3
	Social Science Elective	<u>3</u>
		15

Summer

FLR-255	Hospitality Seminar 2	<u>3</u>
		3

Minimum Credits to Graduate

67

Foodservice Management (407.2)

BOYCE
Certificate

This certificate program offers specialized foodservice management courses that enable the student to enter the growing hospitality industry. The certificate is also ideal for hospitality professionals from other disciplines seeking to transition into foodservice positions. While employed, certificate graduates may earn the associate's degree on a part-time basis.

Upon successful completion of the program, graduates will:

1. Apply the skills for employment in foodservice in lodging facilities, chain and independent restaurants and other hospitality outlets.
2. Examine the issues and challenges of the foodservice industry and outline strategies that contribute to a successful foodservice operation.
3. Manage the areas of menu planning, purchasing, receiving, storage, production and control systems.
4. Build an appreciation for the aesthetic qualities of food.
5. Employ professional, ethical behavior, utilizing effective communication and interpersonal skills.

Certificate Requirements

First Semester

		Credits
FLR-101	Introduction to Foodservice, Lodging and Recreation Management	3
FLR-102	Foodservice 1	3
FLR-106	Introduction to Casino Gaming	3
FLR-108	Food Safety and Sanitation	3
FLR-203	Hospitality Sales and Marketing	3
		15

Second Semester

FLR-105	Human Resources and Ethical Practices	3
FLR-109	Foodservice Management	3
FLR-110	Hospitality Control Systems	3
FLR-120	Hospitality Law	3
FLR-225	Quantity Foods Production	4
		16

Summer

FLR-155	Hospitality Seminar 1	3
		3

Minimum Credits to Graduate 34

Land Administration (491.1)

NORTH, SOUTH
Certificate

Minimum of an Associate's degree required

This certificate is designed for students who have previously completed an associate's degree and who have special interest in pursuing a career in the fast growing natural gas and oil industry. Land Administration employees protect an oil and gas company's assets which include oil and gas leases, pipeline rights-of-way and natural gas and/or oil wells. The various tasks involved in safeguarding these assets include analyzing and enforcing the terms of oil and gas leases, right-of-way agreements and contracts, reviewing title opinions, calculating royalty and ownership interests and monitoring free and discounted gas consumers.

Upon successful completion of the program, the graduate will:

1. Identify the classifications, basic components, defenses, damages, interests and termination elements of legal contracts, development contracts and partnership agreements.
2. Explain the basic concepts of the types of real property conveyances and ownership and interpret title opinions to create chain of titles for gas and oil owners.
3. Describe the limits of authority for corporations, trusts, partnerships and agencies in real property transactions and distribution of royalty payments.
4. Calculate various types of interest and royalty rates based on title interpretation, plats, and lease provisions.
5. Employ accurate terminology of the field and utilize professionalism in all forms of communication.

Upon completion of the program, graduates may seek employment as land administrators in either one of the three major groups within the industry: land records, division orders or contracts. Additionally, graduates may seek employment as landmen, abstractors, in-house reviewers or contractors.

(continued)

Land Administration (491.1) (Continued)

Certificate Requirements:

Minimum of an Associate's degree required.

First Semester

BUS-130	Business Communications	3
CIT-155	Excel Spreadsheets	3
LND-101	Introduction to Land Administration ¹	3
LND-102	Real Property for the Oil and Gas Industry ¹	4
		13

Second Semester

LND-103	Oil and Gas Leases ²	3
LND-104	Contract Law for Oil and Gas Industry	3
LND-105	Fundamentals of Title Abstracting ²	4
PAL-121	Estates and Trusts 1	3
		13

Third Semester

LND-403	Land Administration Co-Op Restricted Electives ³	3 3 6
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Minimum Credits to Graduate: 32

¹LND-101 and LND-102 are corequisite courses.

²LND-103 and LND-105 are corequisite courses.

³Restricted Electives:

ACC-215	Fundamentals of Oil and Gas Accounting	3
BUS-212	Principles of Selling	3
LND-201	Geographic Information Systems	3

Lodging & Recreation Management (406.2)

BOYCE

Certificate

This certificate program offers specialized lodging and recreation management courses to enable the student to enter the growing hospitality industry in lodging and recreation management. Most graduates enter the field as trainees or department supervisors. While employed, certificate graduates may earn the associate's degree on a part-time basis.

Upon successful completion of the program, graduates will:

1. Apply the skills for employment in the lodging industry. Employment opportunities include, but are not limited to, front-desk agent, guest-room attendant, guest services and reservation agent and assistant level managers in all departments of lodging facilities.
2. Define and analyze financial statements, cost controls, quantity standards and operational standards in a management capacity in the rapidly growing and diverse industry in lodging, conventions and events and recreation business.
3. Identify how and when to market and advertise products and services for the hospitality industry.
4. Describe and utilize marketing concepts and internal selling programs to motivate employees and increase revenues and productivity in front office operations.
5. Employ professional, ethical behavior, utilizing effective communication and interpersonal skills.

Certificate Requirements

First Semester		Credits
FLR-101	Introduction to Foodservice, Lodging and Recreation Management	3
FLR-102	Foodservice 1	3
FLR-106	Introduction to Casino Gaming	3
FLR-201	Front Office Operations	3
FLR-203	Hospitality Sales and Marketing	3
		15

(continued)

Lodging and Recreation Management (406.2) (continued)

Second Semester

FLR-103	Housekeeping and Maintenance Operations	3
FLR-105	Human Resources and Ethical Practices	3
FLR-110	Hospitality Control Systems	3
FLR-120	Hospitality Law	<u>3</u>
		12

Summer

FLR-155	Hospitality Seminar 1	<u>3</u>
		3

Minimum Credits to Graduate **30**

Paralegal (604.3)

ALLEGHENY, BOYCE

Associate of Science

This program prepares you to work as a legal assistant or paralegal. Paralegals are employed by banks, real estate offices, title companies, brokerage houses, corporations, governmental agencies and lawyers/law firms.

Upon successful completion of this program, the graduate will:

1. Prepare and develop case-related materials for civil and criminal litigation.
2. Locate, identify and interpret legal principles applicable to specific client cases identifying issues generally applicable to various areas of substantive law.
3. Prepare documents utilized in various areas of substantive law and conduct legal research in both traditional and digital environments.
4. Analyze procedural issues which arise in litigation, real estate, probate, criminal and family areas of law.
5. Employ accurate terminology of the field and use a professional tone in all communications.

Degree Requirements

First Semester

	Credits	
CIT-100	Computer Fundamentals and Applications	3
ENG-101	English Composition 1	3
PAL-101	Legal Research and Writing	3
PAL-102	Paralegal Orientation	1
PAL-111	Litigation 1	3
	Mathematics Elective	<u>3-4</u>
		16-17

Second Semester

ENG-102	English Composition 2	3
PAL-112	Litigation 2	3
PAL-135	Employee Benefits	3
POL-103	American Government	3
	Science Elective	<u>3-4</u>
		15-16

Third Semester

CJC-203	Evidence and Procedures	3
PAL-121	Estates and Trusts 1	3
RLE-101	Real Estate Fundamentals	2
RLE-102	Real Estate Practice	2
SPH-101	Oral Communication	3
	Restricted Elective ¹	<u>3</u>
		16

(continued)

Paralegal (604.3) (continued)

Fourth Semester

PAL-122	Estates and Trusts 2	3
PAL-201	Advanced Legal Research and Writing	3
POL-115	The American Constitution	3
	Restricted Electives (2) ¹	<u>6</u>
		15

Minimum Credits to Graduate 62–64

¹ Restricted Electives		
ACC-104	Financial Accounting	4
ALH-140	Medical Terminology	3
BUS-251	Business Law 1	3
CJC-124	Juvenile Justice and Juvenile Delinquency	3
CJC-151	Criminal Justice Law	3
PAL-105	Family Law	3
PAL-205	Consumer Protection Law	3
PAL-209	Environmental Law	3
PAL-403	Co-Op Education	3

Paralegal (605.3)

ALLEGHENY, BOYCE, SOUTH

Certificate

This certificate program is drawn from the degree program, especially designed for persons who desire to improve job skills or who wish to retrain for an entry-level position in the paralegal field. Paralegals are employed by banks, real estate offices, title companies, brokerage houses, corporations, governmental agencies and lawyers/law firms. It is offered primarily for those holding an associate's or bachelor's degree in another field.

Upon successful completion of the program, the graduate will:

1. Prepare and develop case-related materials for civil and criminal litigation.
2. Locate, identify and interpret legal principles applicable to specific client cases identifying issues generally applicable to various areas of substantive law.
3. Prepare documents utilized in various areas of substantive law and conduct legal research in both traditional and digital environments.
4. Analyze procedural issues which arise in litigation, real estate, probate, criminal and family areas of law.
5. Employ accurate terminology of the field and use a professional tone in all communications.

Certificate Requirements

First Semester		Credits
CJC-203	Evidence and Procedures	3
PAL-101	Legal Research and Writing	3
PAL-102	Orientation to Paralegal	1
POL-115	The American Constitution	3
	Restricted Elective ¹	<u>3</u>
		13
Second Semester		
RLE-101	Real Estate Fundamentals	2
RLE-102	Real Estate Practice	2
	Restricted Electives ¹	<u>12</u>
		16
Minimum Credits to Graduate		29

(Continued)

Paralegal (605.3) (Continued)

¹ Restricted Electives

ALH-140	Medical Terminology	3
BUS-251	Business Law 1	3
CJC-124	Juvenile Justice and Juvenile Delinquency	3
PAL-105	Family Law	3
PAL-111	Litigation 1	3
PAL-112	Litigation 2	3
PAL-121	Estates and Trusts 1	3
PAL-122	Estates and Trusts 2	3
PAL-135	Employee Benefits	3
PAL-201	Advanced Legal Research and Writing	3
PAL-205	Consumer Protection Law	3
PAL-209	Environmental Law	3
PAL-403	Co-op Education	3

Private Pilot (718)

SOUTH
Certificate

This certificate program is designed for the student wishing to obtain a Federal Aviation Administration (FAA) Private Pilot Single-Engine Land License with an Instrument rating.

Upon successful completion of the program, the graduate will:

1. Demonstrate flight competency and exceed FAA minimum requirements of pilot proficiency in the required aircraft.
2. Identify and analyze adverse meteorological conditions.

A minimum of a third class medical is required for program entry.

Flight instruction for the student is through a college-approved, FAA and Veterans Administration certified, FAR 141 fixed base operator.

All flight-training fees are in addition to college fees and tuition.

Certificate Requirements

First Semester		Credits
AVT-101	Private Pilot Theory	3
AVT-103	Air Traffic Control Systems	3
AVT-105	Flight/Private	3
		9
Second Semester		
AVT-110	Aviation Meteorology	3
AVT-111	Flight Theory/Instrument	3
AVT-115	Flight/Instrument	3
AVT-116	Navigation	3
		12
Minimum Credits to Graduate		21

Tourism Management (423.3)

NORTH

Associate of Science

This comprehensive course leads to thorough travel and tourism management career preparation, as well as a well-rounded education. The educational philosophy of the Tourism Management program at CCAC centers on providing students with the basic business skills and competencies needed by tomorrow's business leaders. Through specialized courses in computer, destination geography training, travel security and tourism management, students become highly skilled professionals.

Upon successful completion of the program, the graduate will:

1. Cite the concepts, methods and practices of the travel and tourism industry, giving balanced coverage to each component.
2. Analyze and qualify clients, overcome objectives and meet the traveler's needs in a professional manner.
3. Discuss the geographical locations, topography, climate, culture, tourist attractions and points of interests for major geographical locations throughout the world.
4. Differentiate and investigate the legal aspects and responsibilities of the various segments of the travel and tourism industry.
5. Define the leadership, management and social issues facing the tourism and travel industry.

Degree Requirements

First Semester

	Credits
ACC-100 Introduction to Accounting	3
ENG-101 English Composition 1	3
MAT-195 Business Mathematics	3
TRV-101 Introduction to Travel and Tourism	3
TRV-103 Destinations Geography 1: US, Mexico and Canada	3
	15

Second Semester

CIT-100 Computer Fundamentals and Applications	3
ENG-102 English Composition 2	3
TRV-102 Cruises and Tours Marketing and Sales	3
TRV-104 Destinations Geography 2: South America, Central America, Caribbean, Asia and South Pacific Science Elective	3
	3
	15

Third Semester

BUS-103 Principles of Management	3
BUS-104 Principles of Marketing	3
BUS-130 Business Communications	3
CIT-140 Office Productivity Applications	4
GEO-101 World Geography	3
PSY-101 Introduction to Psychology	3
	19

Fourth Semester

BUS-212 Principles of Selling	3
BUS-251 Business Law 1	3
SPH-101 Oral Communication	3
TRV-224 Events, Meetings and Convention Services	3
TRV-403 Tourism Co-op	3
Restricted Elective ¹	3-6
	18-21

Minimum Credits to Graduate

67-70

¹Restricted Electives

BUS-201 Human Resource Management	3
BUS-240 Small Business Management	3
ETH-101 Ethnic and Diversity Studies	3
FLR-101 Introduction to Foodservice, Lodging and Recreation Management	3
PHL-160 Ethics of Business	3
Foreign Language Courses (2)	3-6

STUDENT NOTES

Education, Social & Behavioral Sciences & Human Services Programs

Certificates, diplomas and degrees in education, social and behavioral sciences and human services prepare students for immediate employment in child development, day care facilities, juvenile and adult rehabilitation centers and geriatric facilities and careers in criminal justice and homeland security.

CCAC encourages students to apply for both certificates and diplomas (where possible) as they work toward associate's degree requirements. Students should investigate baccalaureate programs as they advance in their chosen careers.

Information on specific courses in a selected academic program can be found at ccac.edu CCAC Central e-Services. That information includes the location, days, times, faculty member and required books and supplies. Note that some courses are only offered during alternate terms. The syllabus (a detailed course description) is available for many courses at <http://webapps.ccac.edu/MasterSyllabi/>



PA TRAC creates a seamless transfer and articulation process for students who earn degrees in specific programs and who transfer to PASSHE—Pennsylvania System of Higher Education institutions. CCAC's programs in Early Education and Child Development and Psychology are part of this agreement.



For more information, see www.pacollegetransfer.com/PA-TRAC.

All courses should be chosen with the help of an academic advisor.

- American Sign Language—Interpreting (915.1) (Degree)
- American Sign Language (912.3) (Certificate)
- Child Care (655.3) (Diploma)
- Child Development (623.4) (Diploma)
- Children with Special Needs (624.4) (Diploma)
- Criminal Justice & Criminology (600.6) (Degree)
- Drug & Alcohol (414.1) (Diploma)
- Early Childhood Director Core Certificate (654.3) (Diploma)
- Education Programs:
 - Early Education & Child Development (621.5) (Degree)
 - Early Education & Child Development (622.4) (Certificate)
 - Education Paraprofessional (679.3) (Degree)
 - Education Paraprofessional (680.4) Certificate)
 - Teacher Education: Middle & Secondary Level (099.4) (Degree)
 - Teacher Education: Middle Level—Mathematics Specialization-CCAC & IUP Collaborative (091.1) (AA & BS)
 - Teacher Education: Middle Level—Science Specialization-CCAC & IUP Collaborative (092.1)(AA & BS)
 - *also see Health & Physical Education (020.2) Track (D) Teacher Education*
- Fire Science Administration (330.2) (Degree)
- Fire Science Administration (130.1) Certificate)
- Global Studies (103.1) (Certificate)
- Health & Physical Education (020.2) (Degree)
- Homeland Security (615) (Degree)
- Homeland Security (616) (Certificate)
- Labor & Management Studies (210.1) (Certificate)
- Psychology (053.4) (Degree)
- Social Sciences (059.2) (Degree)
- Social Work Foundation (630.4) (Degree)
- Social Work: Fundamentals of Social Work Foundation (658.1) (Certificate)
- Transportation Security Administration (614) (Diploma)
- Women's Studies (106) (Certificate)

STUDENT NOTES

American Sign Language— Interpreting (915.1)

NORTH

Associate of Science

This comprehensive program leads to an interpreting career. The educational philosophy of the Interpreting program at CCAC centers on providing students with the superior language skills and ethical competencies needed by today's interpreters. Through interpreting labs, observations in schools, the community and internship placement students become highly skilled professionals. Students who successfully complete the program will be prepared to sit for the Pennsylvania Educational Interpreter Performance Assessment (EIPA) license or the National Interpreter Certification (NIC). Students holding a bachelor's degree would be permitted to sit for the NIC exam.

Upon successful completion of the program, the graduate will:

1. Interpret a wide variety of content in the K–12 and community settings.
2. Apply interpreting skills to different professional settings including schools, businesses, medical offices, theatrical and community events.
3. Denote the wide variety of clients with special needs who are also D/deaf and how their services may differ.
4. Differentiate and investigate the legal and ethical aspects and responsibilities of the various requirements of interpreters in the varying settings.
5. Define the occupational challenges and legislative issues facing interpreters today.

Prior to the practicum requirement, students must be eligible for clearance through the Federal Criminal History Record (ACT114), Pennsylvania State Police Criminal History Check (ACT34), Pennsylvania Public Welfare Child Abuse History Clearance Act (ACT151) and meet local requirements of the practicum placement site.

Upon completion of this program, the student will be prepared to seek employment as an educational interpreter in the K–12 system or as a community interpreter.

Students may enter the program in three ways:

- (1) complete CCAC's 17 credit American Sign Language certificate program;
- (2) earn a level 2 or higher on the American Sign Language Proficiency Interview (ASLPI) or
- (3) pass a CCAC ASL proficiency exam, administered each summer.

Degree Requirements

First Semester (Fall 1) Credits

ASL-202	Intermediate American Sign Language 2	3
ENG-101	English Composition 1	3
IIP-101	Interpreting Lab 1	4
IIP-105	Introduction to Interpreting	<u>3</u>
		13

Second Semester (Spring 1)

ENG-102	English Composition 2	3
IIP-102	Special Topics Lab 2	4
IIP-106	Linguistics	3
IIP-107	Interpreting Theory	4
		14

Third Semester (Summer 1)

IIP-201	Classroom Interpreting Lab 3	4
SPH-101	Oral Communications	<u>3</u>
		7

Fourth Semester (Fall 2)

IIP-205	Non-classroom Interpreting Lab 4	4
IIP-206	Interpreter Ethics	4
	Science Elective	<u>4</u>
		12

Fifth Semester (Spring 2)

IIP-207	Special Populations Lab 5	4
IIP-250	Practicum	4
PSY-101	Introduction to Psychology	3
	Mathematics Elective ¹	<u>3-4</u>
		14-15

Minimum Credits to Graduate: 60-61

¹Students planning on interpreting for K-6 should register for *MAT-107, Mathematics for Elementary Education*; students planning on interpreting for 7-12 should register for *MAT-108, Intermediate Algebra*; and students planning on interpreting for the community should register for *MAT-195, Business Mathematics*.

American Sign Language (912.3)

NORTH
Certificate

The certificate in American Sign Language (ASL) provides language training and cultural enrichment for people who wish to learn ASL and the uniqueness of Deaf culture. This program will not prepare students to become interpreters but is designed to introduce students to the language and culture. This program is particularly useful for parents of Deaf children and students pursuing careers such as allied health, nursing, early childhood education and teaching, where clients may be Deaf. The program is designed to allow students to complement their degrees with an ASL certificate offered as a part-time program. Fourteen of the ASL credits within the certificate are transferable to the Educational Interpreting associate's degree program.

Upon successful completion of the program, the graduate will:

1. Apply basic language skills to produce ASL in a variety of ways in order to communicate effectively with Deaf adults and children who depend on visual representations of English for communication.
2. Pass the American Sign Language Proficiency Interview (ASLPI) which is based on the following linguistic areas: pronunciation, grammatical accuracy, vocabulary, fluency and comprehension.
3. Use classifiers through directionality, word signs, noun placements and non-manual signals.
4. Produce intermediate receptive comprehension and expressive information.
5. Recognize the diversity of the Deaf culture through theory discussion, guest speakers and local events.

First Semester

		Credits
ASL-101	Elementary American Sign Language 1	4
ASL-104	Visual Gestural Communications	$\frac{3}{7}$

Second Semester

ASL-102	Elementary American Sign Language 2	4
ASL-109	Deaf Culture	$\frac{3}{7}$

Third Semester

ASL-201	Intermediate American Sign Language 1	$\frac{3}{3}$
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Minimum Credits to Graduate 17

Child Care (655.3)

ALLEGHENY, BOYCE, NORTH, SOUTH
Diploma

This program is designed for individuals who desire entry-level positions in the area of child development. By enrolling in specialized courses designed for working with infants, toddlers and preschool-age children, students learn about the physical, emotional, social and cognitive care of infants, toddlers and preschoolers. They learn the job responsibilities of all staff working in the field and identify suitable career opportunities.

Weekly field observations and experiences are required throughout the coursework in this program. Students must be eligible for clearances through the Federal Criminal History Record (Act 114), Pennsylvania State Police Criminal History Check (Act 34) and the Pennsylvania Department of Public Welfare Child Abuse History Check (Act 115) and meet local requirements of the field placement site.

Upon completion of the diploma, students may work as an aide in child care agencies or centers, preschool programs, before and after school programs or private homes. Students who complete the diploma program, find employment in a child development center and meet additional credential requirements are eligible to apply for the nationally awarded Child Development Associate (CDA) credential through the Council for Professional Recognition. Additional CDA credential requirements and application can be found at www.cda.org.

Upon successful completion of the program, the graduate will:

1. Integrate appropriate theories and practices, general and content knowledge and professional and pedagogical knowledge to create and implement developmentally appropriate experiences for children and their families.
2. Employ appropriate discipline terminology and professional tone in written and oral communication in descriptive and applied observation and documentation strategies to positively influence children's growth and development.

(continued)

Child Care (655.3) (continued)

Students can apply the credits earned in this diploma program toward a certificate or associate's degree in Early Education and Child Development. Upon completion of this program, graduates may seek employment as a preschool teacher or as an early childhood educational aide and can work in child care agencies, day care, preschool programs, public and private schools, before and after school programs or private homes.

Diploma Requirements

One Semester	Credits
ECD-101 Introduction to Early Education and Child Development	3
ECD-105 Early Childhood Development: Birth to Age 6	3
ECD-107 Health and Safety of Children	3
Minimum Credits to Graduate	9

Child Development (623.4)

ALLEGHENY, BOYCE, NORTH, SOUTH

Diploma

This program is for individuals who desire only specialized courses designed for working with infants, toddlers, preschoolers and school-age children. Students receive specialized training in the physical, emotional, social and cognitive care of infants, toddlers, preschoolers and school-age children. They learn the job responsibilities of professionals and identify suitable employment situations and career opportunities.

Upon successful completion of the program, the graduate will:

1. Integrate appropriate theories and practices, general and content knowledge and professional and pedagogical knowledge to create and implement developmentally appropriate experiences of children and their families.
2. Employ appropriate discipline terminology and professional tone in written and oral communication in descriptive and applied observation and documentation strategies to positively influence children's growth and development.
3. Work with children of diverse ages and abilities and their families by participating in supervised practicum experiences in multiple types of inclusive child care and educational environments.

Students can apply the credits earned in the diploma program toward a certificate or associate's degree in Early Education and Child Development. Upon completion of this program, graduates may seek employment as a preschool teacher or as an early childhood educational aide and can work in child care agencies, day care, preschool programs, public and private schools, before and after school programs or private homes.

Weekly field observations and experiences are required throughout the coursework in this program. Students must be eligible for clearances through the Federal Criminal History Record (Act 114), Pennsylvania State Police Criminal History Check (Act 34) and the Pennsylvania Department of Public Welfare Child Abuse History Record Check (Act 151) and meet local requirements of the field placement site.

(continued)

Child Development (623.4) (continued)

Diploma Requirements

First Semester

ECD-101	Introduction to Early Education and Child Development	3
ECD-105	Early Childhood Development Birth to 6	3
ECD-135	Practicum: Observation and Assessment	3
		9

Second Semester

ECD-107	Health and Safety of Children	3
ECD-212	Language, Literacy and Literature for Early Childhood	3
	Restricted Elective ¹ (1)	3
		9

Minimum Credits to Graduate: 18

¹Restricted Electives

ECD-113	Middle Childhood and Adolescent Development	3
ECD-202	Children With Special Needs	3
ECD-214	Curriculum for the Early Childhood Classroom	3

Children with Special Needs (624.4)

ALLEGHENY, SOUTH

Diploma

The Children With Special Needs diploma is designed primarily for individuals who are employed and seek specific skills for advancement or for students who work in community agencies that provide parent training, behavioral intervention and other types of support for families having children with special needs. Students gain skills for working with diverse populations through both classroom work and supervised practicum experiences. Individuals can also enroll in this diploma program to gain specialized parenting skills.

Upon successful completion of the program, the graduate will:

1. Integrate appropriate theories and practices, general and content knowledge and professional and pedagogical knowledge to create and implement developmentally appropriate experiences for children and their families.
2. Employ appropriate discipline terminology and professional tone in written and oral communication in descriptive and applied observation and documentation strategies to positively influence children's growth and development.
3. Find community resources to support families and their children's development, learning and well-being.

Students can apply the credits earned in the diploma program toward a certificate or associate's degree in Early Education and Child Development. Weekly field observations and experiences are required throughout the coursework in this program. Students must be eligible for clearances through the Federal Criminal History Record (Act 114), Pennsylvania State Police Criminal History Check (Act 34) and the Pennsylvania Department of Public Welfare Child Abuse History Record Check (Act 151) and meet local requirements of the field placement site.

Upon completion of this program, graduates may seek employment as staff in agencies that provide services for children with special needs such as Easter Seals or as a family day care provider. Graduates may also seek employment as house-parents, group home workers, TSWs (therapeutic support workers), child care workers or as a respite care worker.

(Continued)

Children with Special Needs (624.4) (continued)

Diploma Requirements

First Semester	Credits
ECD-101 Introduction to Early Education and Child Development	3
SOC-101 Introduction to Sociology	3
SOW-130 Community Resources	$\frac{3}{9}$
Second Semester	
ECD-135 Practicum: Preschool or Special Needs	3
ECD-202 Children With Special Needs	3
ECD-210 Clinical Skills With Children or	3
ECD-211 Family Systems	$\frac{3}{9}$
Minimum Credits to Graduate	18

Criminal Justice & Criminology (600.6)

ALLEGHENY, BOYCE, NORTH, SOUTH
Associate of Science

This program prepares you to work in a public or private agency in law enforcement or corrections.

Upon successful completion of the program, the graduate will:

1. Identify each component of the criminal justice system and explain its purpose and function.
2. Recognize the functional operation of the juvenile justice system and identify moral dilemmas in the criminal justice field.
3. Explain the components of a law or statute and apply the United States Bill of Rights to the operation of the criminal justice system.
4. Describe the budgetary process and staffing levels of a criminal justice organization.
5. Describe the variety of methods used in evidence collection and identify the courtroom value of physical and testimonial evidence.

Police officers protect the lives and property of individuals by working in municipal police departments, county sheriff departments and state highway patrol stations. Uniformed police officers have duties such as maintaining regular patrols and responding to calls for service, directing traffic, investigating a burglary and building relationships with the citizens of the community to mobilize them to help fight crime through community policing.

The corrections option prepares students to work as correctional officers or prison guards to maintain security and prevent escapes by individuals who have been arrested and are awaiting trial or who have been convicted of a crime and sentenced to serve time in a jail, reformatory or penitentiary. Graduates work for a local, state or federal agency in corrections and criminology.

The computer forensics option offers specialized and cross-disciplinary knowledge and skills necessary for performing professional duties as computer forensic examiners/technicians, analysts and auditors in law enforcement agencies or private environment security. Students selecting this track will be required to have a prerequisite of *CIT-100 Computer Fundamentals and Applications* and submit to a criminal background check.

(continued)

Criminal Justice & Criminology (600.6) (continued)

Graduates may find employment as probation or parole officers who supervise adults and juveniles who are convicted of crimes but placed on probation instead of being sent to prison or who have been incarcerated and released from prison. Public agencies employ graduates in police departments, county sheriff departments and state highway patrol stations.

The program also enables those already employed to expand and gain advanced training in the field.

Students must choose one of the following fields of study: **A, B or C.**

(A) Law Enforcement

Degree Requirements

First Semester

	Credits
CJC-101 Introduction to Criminal Justice	3
CJC-102 Introduction to Corrections	3
CJC-124 Juvenile Justice and Juvenile Delinquency	3
ENG-101 English Composition 1	3
Social Science Elective ¹	<u>3</u>
	15

Second Semester

CJC-151 Criminal Justice System Law	3
CJC-152 Ethics in Criminal Justice	3
English Elective ¹	3
Science Elective ¹	4
Social Science Elective ¹	<u>3</u>
	16

Third Semester

CJC-201 Fundamentals of Criminal Investigation	3
CJC-203 Evidence and Procedures	3
CJC-206 Police Operations	3
SPH-101 Oral Communication	3
Restricted Elective ¹	<u>3-4</u>
	15-16

Fourth Semester

CJC-204 Criminal Justice System Organization and Administration	3
CJC-205 Introduction to Forensics	3
CJC-207 Introduction to Criminology	3
CJC-214 Criminal Justice Administration Practicum	3
Humanities Elective ¹	3
Mathematics Elective ¹	<u>3-4</u>
	18-19

Minimum Credits to Graduate

64-66

Elective options for (A) Law Enforcement are listed following the requirements for (B) Corrections.

(B) Corrections

Degree Requirements

First Semester

	Credits
CJC-101 Introduction to Criminal Justice	3
CJC-102 Introduction to Corrections	3
CJC-124 Juvenile Justice and Juvenile Delinquency	3
ENG-101 English Composition 1	3
PSY-101 Introduction to Psychology	<u>3</u>
Social Science Elective ¹	15

Second Semester

CJC-151 Criminal Justice System Law	3
CJC-152 Ethics in Criminal Justice	3
ENG-102 English Composition 2	3
Science Elective ¹	4
Social Science Elective ¹	<u>3</u>
	16

Third Semester

CJC-207 Introduction to Criminology	3
SPH-101 Oral Communication	3
Humanities Elective ¹	3
Mathematics Elective ¹	3-4
Restricted Elective ¹	<u>3-4</u>
	15-17

(continued)

Criminal Justice and Criminology (600.6) (B) Corrections (continued)

Fourth Semester

CJC-203	Evidence and Procedures	3
CJC-204	Criminal Justice System Organization and Administration	3
PSY-150	Psychology of Intervention	3
SOC-208	Urban Sociology or	3
SOC-211	Racial and Ethnic Minorities or	3
CJC-211	Treatment of the Offenders: Issues and Strategies (NOTE: Students can only use <i>CJC-211</i> once to fulfill fourth semester requirements.)	3
SOW-106	Interviewing Skills or	3
CJC-211	Treatment of the Offenders: Issues and Strategies or	3
CJC-214	Criminal Justice Practicum	3
		15

Minimum Credits to Graduate 61–63

¹Students intending to transfer to an institution that is participating in the state-wide articulation agreement (TAOC) should select their courses as indicated below. It is recommended that if students are planning to transfer to another specific institution that they meet with a transfer counselor.

The following courses are area-related electives for **(A) Law Enforcement** and **(B) Corrections** tracks.

English Elective:

ENG-102	English Composition 2 or Students transferring to Institutions related to TAOC may substitute:	3
ENG-115	General Literature	3

Humanities Elective:

MUS-101	Introduction to Music or	3
THE-101	Introduction to Theatre or	3
PHL-101	Introduction to Philosophy	3

Students not transferring to institution related to TAOC may also select any Foreign Language class as a Humanities Elective but should consult with a transfer counselor

Mathematics Elective:

MAT-102	Mathematical concepts or	3
MAT-111	College Algebra or	3
MAT-142	Pre-Calculus or	3
MAT-161	Elementary Statistics or	3
MAT-201	Calculus 1	4

Restricted Elective:

(Note: A course can only be used in one category of electives. I.e., a mathematics course can be used for the mathematics elective but cannot then also be used as a restricted elective.)

BIO-110	Introduction to Biological Science or	4
BIO-151	General Biology 1 or	4
BIO-152	General Biology 2 or	4
BIO-161	Anatomy and Physiology 1 or	4
BIO-162	Anatomy and Physiology 2 or	4
CHM-109	Introduction to Chemistry or	4
CHM-151	General Chemistry 1 or	4
CHM-152	General Chemistry 2 or	4
MAT-102	Mathematical concepts or	3
MAT-111	College Algebra or	3
MAT-142	Pre-Calculus or	3
MAT-161	Elementary Statistics or	3
MAT-201	Calculus 1 or	4
PHY-100	Basic Physics or	4
PHY-141	Physics 1 or	4
PHY-142	Physics 2 or	4
POL-103	American Government or	3
PSY-101	Introduction to Psychology or	3
SOC-101	Introduction to Sociology	3

Science Elective:

BIO-110	Introduction to Biological Science or	4
BIO-151	General Biology 1 or	4
BIO-161	Anatomy and Physiology 1 or	4
CHM-109	Introduction to Chemistry or	4
CHM-151	General Chemistry or	4
PHY-100	Basic Physics or	4
PHY-141	Physics 1	4

Social Science Elective:

POL-103	American Government or	3
PSY-101	Introduction to Psychology or	3
SOC-101	Introduction to Sociology	3

(continued)

Criminal Justice and Criminology (600.6) (continued)

(C) Computer Forensics

Degree Requirements

First Semester

		Credits
CIT-115	Introduction to Information to Technology	3
CJC-101	Introduction to Criminal Justice	3
CJC-124	Juvenile Justice and Juvenile Delinquency	3
ENG-101	English Composition 1	3
PSY-101	Introduction to Psychology	3
		15

Second Semester

CIT-180	Computer Forensics 1	3
CIT-181	Principles of Information Security	4
CJC-151	Criminal Justice System Law	3
CJC-152	Ethics in Criminal Justice	3
ENG-102	English Composition 2	3
		16

Third Semester

CIT-280	Computer Forensics 2	4
CIT-281	Project in Computer Forensics	2
CJC-201	Fundamentals of Criminal Investigation	3
CJC-203	Evidence and Procedures	3
CJC-206	Police Operations	3
SOC-101	Introduction to Sociology	3
		18

Fourth Semester

BIO-100	Life Science	3
CJC-204	Criminal Justice System Organization and Administration	3
MAT-102	Mathematical Concepts	3
PHL-101	Introduction to Philosophy or	3
	Foreign Language	3
SPH-101	Oral Communication	3
		15

Minimum Credits to Graduate

64

The Computer Forensics track of the Criminal Justice and Criminology program is not included in the TAOC (Transfer and Articulation Oversight Committee) Agreement. Students planning on transferring to a specific institution not related to TAOC should consult with a transfer counselor.

Drug & Alcohol (414.1)

ALLEGHENY, SOUTH

Diploma

This program prepares the student for an entry-level position as a clinician in a drug and/or alcohol treatment center. Training is in counseling technique, case management, prevention, intervention and rehabilitation.

Upon successful completion of the program, the graduate will:

1. Describe, define and differentiate the various models or paradigms currently used to understand the field of chemical dependency.
2. Examine, define and explain the addiction counseling theories, the philosophy of the theories and techniques for change.
3. Identify and name the various drugs of abuse and the legal drugs that are used to manage withdrawal and maintain patients.
4. Appraise, describe and practice ethics as they pertain to the field of chemical dependency.
5. Demonstrate awareness of communicable diseases that are particularly problematic in this field, especially HIV/AIDS, HBV and HCV.
6. Appraise and explain those aspects of the discipline of law that interface with the field of chemical dependency.

Upon completion of this program, graduates may seek employment in entry-level positions such as interviewers in rehabilitation treatment settings, halfway houses, detox centers, missions, women's shelters, juvenile treatment facilities and methadone maintenance centers.

(continued)

Drug & Alcohol (414.1) (continued)**Diploma Requirements****First Semester** **Credits**

SOC-101	Introduction to Sociology	3
SOC-117	Understanding Chemical Dependency	3
PSY-101	Introduction to Psychology	3
		9

Second Semester

PSY-230	Counseling the Addict	3
SOC-118	Drug and Alcohol Clinical Practicum	3
	Restricted Elective ¹	3
		9

Minimum Credits to Graduate **18**¹Restricted Electives

ETH-101	Ethnic and Diversity Studies	3
ETH-112	Understanding Violence in America	3
ETH-114	Achieving Cultural Competence	3
SOC-212	Social Problems	3
SOW-101	Introduction to Social Work	3
SOW-106	Interviewing Skills	3

Early Childhood Director Core Certificate (654.3)

ALLEGHENY, BOYCE, NORTH, SOUTH

Diploma

This program is designed for individuals who work in early childhood and child development and wish to apply for the Director Credential as identified by the PA Key to increase the knowledge and understanding of the role of the child care and school-age director as defined in Section 3720.34 and 3720.241(c), Commonwealth of Pennsylvania Child Day Care Regulations and to meet the requirements of the Keystone STARS continuous quality assurance program at the STAR 3 level.

Upon successful completion of the program, the graduate will:

1. Integrate appropriate theories and practices, general and content knowledge and professional and pedagogical knowledge to create and implement developmentally appropriate experiences for children and their families.
2. Identify core values and ethical behavior standards of the profession by exercising sensitivity, professionalism, confidentiality and competency when interacting with children, families, co-workers, community representatives and policy agents.
3. Find community resources to support families and their children's development, learning and well-being.
4. Employ appropriate discipline terminology and professional tone in written and oral communication in descriptive and applied observation and documentation strategies to positively influence children's growth and development.

To begin this coursework, students must:

1. Have an associate's or bachelor's degree in early childhood education, child development, special education, elementary education or the human service field.
2. Have an associate's or bachelor's degree in any other field, including 30 hours of early childhood, child development, special education, elementary education or the human service field.
3. Be eligible for clearances from the Pennsylvania State Police Criminal History Check and the Department of Public Welfare Child Abuse History Check. Additionally, if required by a field/practicum site, students will need to obtain the FBI Criminal History Record Check (Act 114).

(continued)

Early Childhood Director Core Certificate (654.3) (continued)

The student must complete three, three-credit courses that are not included in any other associate's or bachelor's degree. The program can be completed in one, two or three semesters. Graduates can be directors of early childhood, child development, infant/toddler or school-age programs.

After completion of these courses, candidates will make separate application to the PA Key and should obtain information to meet additional requirements of candidacy. (www.pakeys.org)

Diploma Requirements

First Semester	Credits
Restricted Elective ¹	3
Second Semester	
Restricted Elective ¹	3
Third Semester	
Restricted Elective ¹	3
Minimum Credits to Graduate:	9
¹ Restricted Electives	
BUS-240 Small Business Management	3
ECD-202 Children With Special Needs	3
ECD-214 Curriculum for the Early Childhood Classroom	3
ECD-218 Child Care Management and Administration	3

Early Education & Child Development (621.5)

ALLEGHENY, BOYCE, NORTH, SOUTH
Associate of Science



This program prepares students for an entry-level position working with infants, children, adolescents and their families in a variety of settings and for transfer to a Pre-K–4 teacher certification program.

Students learn about best practices in direct care and education, diversity when working with children and their families and techniques for working with children who have special needs. Through classes, weekly field observations and practicums, students learn about professionalism, human development, health, mental health, infant and child care agencies, family relationships, laws and regulations governing the welfare of children and their families and community resources available for working with children and their families.

Upon successful completion of the program, the graduate will:

1. Integrate appropriate theories and practices, general and content knowledge and professional and pedagogical knowledge to create and implement developmentally appropriate experiences for children and their families.
2. Work with children of diverse ages and abilities and their families by participating in supervised practicum experiences in multiple types of inclusive child care and educational environments.
3. Identify core values and ethical behavior standards of the profession by exercising sensitivity, professionalism, confidentiality and competency when interacting with children, families, co-workers, community representatives and policy agents.
4. Find community resources to support families and their children's development, learning and well-being.
5. Employ appropriate discipline terminology and professional tone in written and oral communication in descriptive and applied observation and documentation strategies to positively influence children's growth and development.

Students must be eligible for clearances through the Federal Criminal History Record (Act 114), Pennsylvania State Police Criminal History Check (Act 34) and the Pennsylvania Department of Public Welfare Child Abuse History Record Check (Act 151) and meet local requirements of the field placement site.

(continued)

Early Education & Child Development (621.5) (continued)

Career opportunities exist in infant/toddler centers, home-family support roles, early childhood programs, nursery schools, preschool programs, before- and after-school programs, private and public schools, hospitals, therapeutic day care and residential centers, group homes, community living arrangements and private homes.

Upon completion of this program, students may seek employment as a child care practitioner or an early childhood educator.

This program is the career and program-to-program transfer program for Early Education and Child Development. Students who plan to continue on to a teacher certification program should meet with an advisor or transfer counselor to discuss this educational goal. Graduates achieving a minimum of 3.0 GPA may choose to earn a bachelor's degree in Early Childhood Education with Pre-K–4 Teacher Certification. Teacher certification candidates must successfully pass the required PRAXIS exams.

Degree Requirements

First Semester		Credits
ECD-101	Introduction to Early Education and Child Development	3
ECD-105	Early Childhood Development: Birth to Age 6	3
ECD-107	Health and Safety of Children	3
ENG-101	English Composition 1	3
PSY-101	Introduction to Psychology or	3
SOC-101	Introduction to Sociology	3
		15
Second Semester		
ECD-135	Practicum: Observation and Assessment	3
ECD-212	Language, Literacy and Literature in Early Childhood	3
ENG-102	English Composition 2	3
HIS-104	US History 1	3
MAT-107	Mathematics for Elementary Education ¹ or	3
MAT-190	Contemporary Mathematics or	4
MAT-195	Business Mathematics	3
		15–16

Third Semester

ECD-202	Children With Special Needs	3
ECD-211	Family Systems	3
	Humanities Elective ²	3
	Science/Lab Elective	3–4
	Social Science Elective ³	3
		15–16

Fourth Semester

ECD-214	Curriculum for the Early Childhood Classroom	3
ECD-240	Practicum: Pre-K–4	3
ECD/SOW	Restricted Electives ⁴	3
	Mathematics Elective ⁵ or	3–4
	Science Elective	3–4
	Humanities Elective ²	3
		15–16

Minimum Credits to Graduate 60–63

¹Required for TAOC program-to-program transfer. Check with CCAC Counselor regarding transfer process.

²Humanities are restricted as follows:
3 credits of Literature
3 credits of either Art, Music or Theatre

³Recommended for Social Sciences for Program to Program transfer:

ANT-101	Introduction to Anthropology or	3
HIS-101	History of Western Civilization or	3
GEO-101	World Geography	3

⁴Restricted Electives

ECD-113	Middle Childhood and Adolescent Development	3
ECD-210	Clinical Skills With Children	3
ECD-218	Child Care Management and Administration	3
EDU-205	English Language Learners ¹	3
SOW-120	Child Welfare	3
SOW-130	Community Resources	3

⁵Required for program-to-program transfer
MAT-110 Mathematics for Elementary Education 2 3

Early Education & Child Development (622.4)

ALLEGHENY, BOYCE, NORTH, SOUTH
Certificate

This program is primarily for students who work with children and/or their families. It provides theoretical and practical information enabling students to develop job skills for working with infants, toddlers, school-age children and their families. Students learn the developmental needs of children and developmentally appropriate activities for children of various ages. Students receive the training in the physical, social, emotional and psychological needs of children. Information on children with special needs and the impacts on their families are included in the program along with an emphasis on diversity and the professionalism needed for working with children and their families. Students become aware of the effects of social conditions on the development of children and study the laws and regulations pertaining to children and agencies that work with them.

Upon successful completion of the program, the graduate will:

1. Integrate appropriate theories and practices, general and content knowledge and professional and pedagogical knowledge to create and implement developmentally appropriate experiences for children and their families.
2. Work with children of diverse ages and abilities and their families by participating in supervised practicum experiences in multiple types of inclusive child care and educational environments.
3. Identify core values and ethical behavior standards of the profession by exercising sensitivity, professionalism, confidentiality and competency when interacting with children, families, co-workers, community representatives and policy agents.
4. Find community resources to support families and their children's development, learning and well-being.
5. Employ appropriate discipline terminology and professional tone in written and oral communication in descriptive and applied observation and documentation strategies to positively influence children's growth and development.

Students can complete the certificate before pursuing a degree program. Courses in the program are also helpful for parents.

Students must be eligible for clearances through the Federal Criminal History Record (Act 114), Pennsylvania State Police Criminal History Check (Act 34) and the Pennsylvania Department of Public Welfare Child Abuse History Record Check (Act 151) and meet local requirements of the field placement site.

Completion of this program enables students to work in child care centers, family day care homes, schools, agencies serving students with special needs or as in-home child care professionals. Graduates may seek employment as a day care assistant, nanny or as a early childhood educational assistant.

Certificate Requirements

First Semester		Credits
ECD-101	Introduction to Early Education and Child Development	3
ECD-105	Early Childhood Development: Birth to 6	3
ECD-107	Health and Safety of Children	3
ECD-135	Practicum: Observation and Assessment	3
	Restricted Elective ¹ (1)	<u>3</u>
		15
Second Semester		
ECD-202	Children With Special Needs	3
ECD-211	Family Systems	3
ECD-240	Practicum: Pre-K-4	3
	Restricted Elective ¹ (2)	<u>6</u>
		15
Minimum Credits to Graduate		30
¹ Restricted Electives		
ECD-210	Clinical Skills With Children	3
ECD-212	Language, Literacy and Literature in Early Childhood	3
ECD-214	Curriculum for the Early Childhood Classroom	3
ECD-218	Child Care Management and Administration	3
SOW-120	Child Welfare	3
SOW-130	Community Resources	3

Education Paraprofessional (679.3)

ALLEGHENY, BOYCE, NORTH, SOUTH

Associate of Arts

The program prepares individuals to work as a classroom aide or teacher's assistant in an educational setting. Emphasis is placed on mastering reading, writing and mathematical skills along with the techniques for assisting students with special needs. The program enables students to work in public or private schools.

Upon successful completion of the program, the graduate will:

1. Identify current PA teacher certification requirements, including the development of a professional portfolio and demonstrate behaviors appropriate to the profession.
2. Identify, develop and utilize resources, materials and technology for the classroom, including, but not limited to, the Pennsylvania Department of Education resources, (*i.e.*, academic standards).
3. Observe students in their learning environment and empirically document these observations.
4. Classify learning theories and psychological principles in relation to the development of an educational philosophy and pedagogical practices.
5. Discuss, analyze and evaluate past and present issues in education.
6. Describe the role of the classroom teacher in meeting the needs of all students including those with sensory, behavioral, physical, language, cognitive, cultural and learning differences.

Students must be eligible for clearance through the Federal Criminal History Record (Act 114), Pennsylvania State Police Criminal History Check (Act 34) and the Pennsylvania Public Welfare Child Abuse History Clearance Act (Act 151).

Upon completion of this program, graduates may seek employment as a teacher's aide in a regular or special education setting, an educational specialist or an education technician.

Degree Requirements

First Semester		Credits
EDU-125	Foundations of Middle Level and Secondary Education	3
ENG-101	English Composition 1	3
PSY-101	Introduction to Psychology	3
	Restricted Mathematics Elective ¹	3–4
	Restricted Elective ²	<u>3</u>
		15–16

Second Semester

ECD-202	Children With Special Needs	3
ENG-102	English Composition 2	3
PSY-204	Adolescent Psychology	3
	Restricted Humanities Elective ³	3
	Science Elective With Lab ⁴	<u>3–4</u>
		15–16

Third Semester

ECD-135	Practicum: Observation and Assessment	3
EDU-202	Educational and Assistive Technology	3
HIS-104	US History 1	3
PSY-201	Educational Psychology	3
	Mathematics or Science Elective	<u>3–4</u>
		15–16

Fourth Semester

EDU-205	English Language Learners in the Classroom	3
	English Literature Elective	3
	Restricted Elective ²	3
	Restricted Humanities Elective ³	3
	Social Science Elective	<u>3</u>
		15

Minimum Credits to Graduate 60–63

¹ Restricted Mathematics Electives		
MAT-102	Mathematics Concepts	3
MAT-107	Mathematics for Elementary Education	3
MAT-108	Intermediate Algebra	4
MAT-190	Contemporary Mathematics	4

² Restricted Electives		
ECD-107	Health and Safety of Children	3
ECD-113	Middle Childhood and Adolescent Development	3
ECD-210	Clinical Skills With Children	3
ECD-211	Family Systems	3
ECD-212	Language, Literacy and Literature	3
PSY-150	Psychology of Intervention	3

(Continued)

Education Paraprofessional (679.3) (continued)

³Restricted Humanities Electives

ART-103	Art History—Ancient or	3
ART-104	Art History—Modern or	3
ART-106	Art Appreciation	3
MUS-101	Introduction to Music	3
PHL-101	Introduction to Philosophy or	3
PHL-103	Logic or	3
PHL-111	Religions of the World	3
SPH-101	Oral Communication (highly recommended for those interested in teaching grades 7–12)	3
THE-101	Introduction to Theatre	3

⁴Recommended Science With Lab Electives

BIO-110	Introduction to Biological Sciences	4
BIO-151	General Biology 1	4
PHS-101	Earth Science	3
PHY-100	Basic Physics	4

Education Paraprofessional (680.4)

ALLEGHENY, BOYCE, NORTH, SOUTH

Certificate

The program prepares individuals to work as a classroom aide or teacher's assistant in an educational setting. Emphasis is placed on mastering reading, writing and mathematical skills along with techniques for assisting students with special needs. The program enables students to work in public or private schools.

Upon successful completion of the program, the graduate will:

1. Identify current PA teacher certification requirements, including the development of a professional portfolio and demonstrate behaviors appropriate to the profession.
2. Identify, develop and utilize resources, materials and technology for the classroom, including, but not limited to, the Pennsylvania Department of Education resources, (*i.e.*, academic standards).
3. Observe students in their learning environment and empirically document these observations.
4. Classify learning theories and psychological principles in relation to the development of an educational philosophy and pedagogical practices;
5. Discuss, analyze and evaluate past and present issues in education.
6. Describe the role of the classroom teacher in meeting the needs of all students including those with sensory, behavioral, physical, language, cognitive, cultural and learning differences.

Students must be eligible for clearance through the Federal Criminal History Record (Act 114), Pennsylvania State Police Criminal History Check (Act 34) and the Pennsylvania Public Welfare Child Abuse History Clearance Act (Act 151).

Upon completion of this program, graduates may seek employment as a teacher's aide in a regular classroom setting, an educational specialist or a recreational assistant.

Certificate Requirements

First Semester		Credits
EDU-125	Foundations of Middle Level and Secondary Education	3
ENG-101	English Composition 1	3
PSY-101	Introduction to Psychology	3
	Restricted Elective ¹	3
	Restricted Mathematics Elective ²	<u>3–4</u>
		15–16

(Continued)

Education Paraprofessional (680.4) (continued)

Second Semester

ECD-202	Children With Special Needs	3
EDU-202	Educational and Assistive Technology	3
ENG-102	English Composition 2	3
	Restricted Elective ¹	3
	Science Elective With Lab ³	3–4
		15–16

Third Semester

ECD-135	Observation and Assessment: Practicum	3
EDU-205	English Language Learners in the Classroom	3
PSY-204	Adolescent Psychology	3
	Mathematics or Science Elective	3–4
	Restricted Humanities Elective ⁴	3
	Social Science Elective	3
		18–19

Minimum Credits to Graduate 48–51

¹Restricted Electives

ECD-107	Health and Safety of Children	3
ECD-113	Middle Childhood and Adolescent Development	3
ECD-210	Clinical Skills With Children	3
ECD-211	Family Systems	3
ECD-212	Language, Literacy and Literature	3
PSY-150	Psychology of Intervention	3

²Restricted Mathematics Electives

MAT-102	Mathematics Concepts	3
MAT-107	Mathematics for Elementary Education	3
MAT-108	Intermediate Algebra	4
MAT-190	Contemporary Mathematics	4

³Recommended Science With Lab Electives

BIO-110	Introduction to Biological Sciences	4
BIO-151	General Biology 1	4
PHS-101	Earth Science	3
PHY-100	Basic Physics	4

⁴Restricted Humanities Elective

ART-103	Art History—Ancient or	3
ART-104	Art History—Modern or	3
ART-106	Art Appreciation	3
MUS-101	Introduction to Music	3
PHL-101	Introduction to Philosophy or	3
PHL-103	Logic or	3
PHL-111	Religions of the World	3
SPH-101	Oral Communication (highly recommended for those interested in teaching grades 7–12)	3
THE-101	Introduction to Theatre	3

Fire Science Administration (330.2)

BOYCE

Associate of Science

This program, which follows the Fire and Emergency Services Higher Education (FESHE) and the National Fire Academy models, prepares students to meet the challenges of preventing fires and reducing the loss of life and property in today's rapidly changing emergency services delivery system. The courses focus on analytical approaches to fire protection and investigation, personnel management, disaster and fire defense planning, hazardous materials management, fire-protection structure and system design, the role of the fire service within the community and political structure and the phenomena of fire propagation. The program improves the professional qualifications of all students and enhances their educational credentials and advancement prospects within their respective fields.

Upon successful completion of the program, the graduate will:

1. Seek employment as a firefighter in public or private fire or emergency response rescue services, fire safety specialist, industrial safety specialist, underwriter, plan reviewer, code enforcement officer, insurance industry investigator, fire protection engineer or sales representative for safety equipment companies.
2. Identify the requirements of various fire protection environments and operate the equipment related to those environments.
3. Prevent and mitigate hazards by means of identifying fire suppression and warning systems, building inspections and hazard descriptions.
4. Apply safety codes and proper procedures for hauling and storing hazardous materials.
5. Conduct origin and cause investigations of fires.
6. Manage a fire protection organization through effective use of public and private emergency planning and resources.

CCAC may accept State and National certifications in place of courses in the Fire Science Administration (FSA) program.

(Continued)

Fire Science Administration (330.2) (continued)

Degree Requirements

First Semester

		Credits
CIT-100	Computer Fundamentals and Applications	3
ENG-101	English Composition 1	3
FSA-102	Principle of Emergency Services	3
FSA-103	Fundamentals of Fire Prevention and Fire Code Enforcement	3
MAT-108	Intermediate Algebra	4
		16

Second Semester

CHM-109	Introduction to Chemistry	4
ENG-102	English Composition 2	3
FSA-105	Introduction to Fire and Emergency Services Administration	3
FSA-106	Elements of Building Construction	3
PSY-107	Human Relations	3
		16

Third Semester

FSA-107	Fire Behavior and Combustion	3
FSA-201	Fire Protection Systems	3
FSA-203	Firefighting Tactics and Strategy	3
SPH-101	Oral Communication	3
	Restricted Elective ¹	3
		15

Fourth Semester

FSA-205	Principles of Firefighter Safety and Survival	3
FSA-206	Fire Protection Hydraulics and Water Supply	3
FSA-207	Hazardous Materials Chemistry	3
	Restricted Electives ¹	6
		15

Minimum Credits to Graduate

62

¹Restricted Electives

ALH-102	Basic Emergency Management or EMT or First Responder as currently certified by the Pennsylvania Department of Health	3
BUS-201	Human Resource Management	3
CJC-101	Introduction to Criminal Justice	3
FSA-209	Fire Investigation 1	3
FSA-210	Emergency Services Course Delivery	3
FSA-211	Fire Administration	3

Fire Science Administration (130.1)

BOYCE
Certificate

The Fire Science Administration certificate program, which follows the Fire and Emergency Services Higher Education (FESHE) and National Fire Academy models, prepares students to meet the challenges of preventing fires and reducing the loss of life and property in today's rapidly changing emergency services delivery system.

Upon successful completion of the program, the graduate will:

1. Seek employment as an entry-level firefighter, investigator in the insurance industry or in fields such as safety engineering or fire equipment sales.
2. Identify the requirements of various fire protection environments.
3. Prevent and mitigate hazards by means of identifying fire suppression and warning systems, building inspections and hazard descriptions.
4. Apply safety codes and proper procedures for hauling and storing hazardous materials.
5. Conduct origin and cause investigations of fires.

CCAC may accept State and National certifications in place of courses in the Fire Science Administration (FSA) program.

Certificate Requirements

First Semester

		Credits
CHM-109	Introduction to Chemistry	4
FSA-102	Principle of Emergency Services	3
FSA-103	Fundamentals of Fire Prevention and Fire Code Enforcement	3
FSA-107	Fire Behavior and Combustion	3
		13

Second Semester

FSA-105	Introduction to Fire and Emergency Services Administration	3
FSA-106	Elements of Building Construction	3
FSA-201	Fire Protection Systems	3
FSA-203	Firefighting Tactics and Strategy	3
		12

(Continued)

Fire Science Administration (130.1) (continued)

Third Semester

FSA-205	Principles of Firefighter Safety and Survival	3
FSA-206	Fire Protection Hydraulics and Water Supply	3
FSA-207	Hazardous Materials Chemistry	3
FSA-210	Emergency Services Course Delivery or	3
FSA-211	Fire Administration	<u>3</u>
		12

Minimum Credits to Graduate **37**

Global Studies (103.1)

ALLEGHENY

Certificate

This program is designed to provide the student with knowledge of global issues and of the dynamics of the globalization process from which those issues stem. It would be a suitable accompaniment to a wide variety of majors and an enhancement to the credentials of those transferring to a four-year institution. The program is multidisciplinary and flexible, with an appealing aspect of student self-design.

Upon successful completion of the program, the graduate will:

1. Identify, explain and compare major theories in the field of international political economy. Emphasis is placed on liberal, realist and Marxist theory.
2. Describe theories and major actors within the international political system, explain impact of globalization on the international community and make comparisons across different types of political systems.
3. Develop the ability to place events in an appropriate temporal and spatial context within a global scheme of historical evolution.
4. Describe theoretical perspectives of Anthropology/Sociology, study different cultures of the world, discuss impact of globalization on different cultural societies and develop ability to appreciate cultural differences.
5. Develop basic communicative competence in at least one foreign language understanding the role of language in shaping culture and worldview

Certificate Requirements

First Semester		Credits
HIS-102	History of Western Civilization 2	3
POL-206	International Relations	3
	Language Elective ¹	<u>3</u>
		9
Second Semester		
POL-204	Comparative Politics	3
HIS-213	Twentieth Century World History	3
	Restricted Elective ²	<u>3</u>
		9
Minimum Credits to Graduate:		18

(continued)

Global Studies (103.1) (continued)

¹Language Elective Any one in FRE–French, GER–German, ARA–Arabic, ITA–Italian, RUS–Russian, SPA–Spanish or FCL–Chinese or a language approved by transfer counselor.

²Restricted Electives

ANT-117	Globalization	3
GEO-101	World Geography	3
HIS-229	Contemporary United States History	3
PHL-111	Religions of the World	3
SOC-211	Racial and Ethnic Minorities	3

Health & Physical Education (020.2)

ALLEGHENY, BOYCE, NORTH, SOUTH

Associate of Science

The Health and Physical Education program prepares students for transfer to four-year institutions with a broad college background and skill and knowledge in one of the following areas: fitness, sports and lifetime recreation; exercise and sports science; sports management; or health and physical education teacher preparation.

Students work with a transfer counselor to design a program of studies to meet the requirements for their chosen four-year institution.

Upon successful completion of the program, the graduate will:

1. Explain within the health and physical education discipline, kinesiology, functional anatomy, exercise physiology, health/wellness, injury prevention and treatment.
2. Apply skill in risk factor and health status identification, fitness appraisal and exercise prescription.
3. Incorporate suitable and innovative activities related to improving an individual's functional capacity and overall well-being.
4. Choose a health and physical education program of studies that successfully matriculates with a university program in a related major.
5. Utilize skills in health and physical education to gain professional certifications, employment in the field and/or personal health.

Students may earn a bachelor's degree in Fitness, Sports and Lifetime Recreation; Exercise and Sport Science; Sports Management; or Health and Physical Education Teacher preparation as well as other related majors. Graduates prepare for study in the professions, including exercise physiology, sports medicine, health club management, cardiac rehabilitation, athletic administration, sports management and health and physical education teachers.

(Continued)

Health & Physical Education (020.2) (Continued) (B) Exercise and Sports Science

Students must choose one of the following fields of study, A, B, C or D:

Degree Requirements

(A) Fitness, Sports and Lifetime Fitness

First Semester Credits

BIO-151	General Biology 1	4
ENG-101	English Composition 1	3
HPE-171	Personal and Community Health and Wellness	3
HPE-172	Foundations of Physical Education	3
	Computer Information Technology Elective	<u>3</u>
		16

Second Semester

BIO-152	General Biology 2	4
ENG-102	English Composition 2	3
HPE-177	First Aid/Athletic Injuries	3
PSY-101	Introduction to Psychology	3
	General Elective	<u>3</u>
		16

Third Semester

HPE-174	Coaching and Officiating Sports	3
HPE-193	Fieldwork in Health and Physical Education	3
HPE-201	Applied Anatomy and Kinesiology	3
	General Elective	3-6
	Mathematics Elective	<u>3</u>
		15-18

Fourth Semester

HPE-175	Camp Counseling and Administration	3
HPE-176	Recreation and Group Activities	3
HPE-207	Fundamentals of Exercise Physiology	3
	General Elective	3
	Humanities Elective	<u>3</u>
		15

Minimum Credits to Graduate 62-65

First Semester

BIO-151	General Biology 1	4
ENG-101	English Composition 1	3
HPE-171	Personal and Community Health and Wellness	3
HPE-172	Foundations of Physical Education	3
	Computer Information Technology Elective	<u>3</u>
		16

Second Semester

BIO-152	General Biology 2	4
ENG-102	English Composition 2	3
HPE-177	First Aid/Athletic Injuries	3
PSY-101	Introduction to Psychology	3
	General Elective	<u>3</u>
		16

Third Semester

BIO-117	Introduction to Nutrition or	3
DIT-106	Fundamentals of Nutrition	3
HPE-201	Applied Anatomy/Kinesiology	3
HPE-205	Organization and Management of Adult Fitness Programs	3
	General Elective	3
	Mathematics Elective	<u>3-4</u>
		15-16

Fourth Semester

HPE-207	Fundamentals of Exercise Physiology	3
HPE-225	Fundamentals of Fitness Theory, Programming and Assessment	3
	General Electives	6-7
	Humanities Elective	<u>3</u>
		15-16

Minimum Credits to Graduate 62-64

(Continued)

Health & Physical Education (020.2) (D) Teacher Education (Continued)

(C) Sports Management

First Semester Credits

BIO-151	General Biology 1	4
ENG-101	English Composition 1	3
HPE-171	Personal and Community Health and Wellness	3
HPE-172	Foundations of Physical Education Computer Information Technology Elective	3 3 <u>3</u>
		16

Second Semester

BIO-152	General Biology 2	4
ENG-102	English Composition 2	3
HPE-177	First Aid/Athletic Injuries	3
PSY-101	Introduction to Psychology General Elective	3 <u>3</u>
		16

Third Semester

HPE-201	Applied Anatomy and Kinesiology	3
HPE-205	Organization and Management of Adult Fitness Programs General Elective Mathematics Elective	3 6 <u>3-4</u>
		15-16

Fourth Semester

HPE-207	Fundamentals of Exercise Physiology	3
HPE-225	Fundamentals of Fitness Theory, Programming and Assessment Business Electives Humanities Electives	3 6 <u>3</u>
		15

Minimum Credits to Graduate 62-63

First Semester

BIO-151	General Biology 1	4
ENG-101	English Composition 1	3
HPE-171	Personal and Community Health and Wellness	3
HPE-172	Foundations of Physical Education Computer Information Technology Elective	3 3 <u>3</u>
		16

Second Semester

BIO-152	General Biology 2	4
ENG-102	English Composition 2	3
HPE-177	First Aid/Athletic Injuries	3
PSY-101	Introduction to Psychology General Elective	3 <u>3</u>
		16

Third Semester

HPE-201	Applied Anatomy and Kinesiology General Electives Mathematics Elective Psychology Elective	3 6 3-4 <u>3</u>
		15-16

Fourth Semester

HPE-207	Fundamentals of Exercise Physiology General Electives Humanities Elective	3 9-10 <u>3</u>
		15-16

Minimum Credits to Graduate

62-64

The selection of the program core courses depends on the program option and the college or university that the student plans to transfer. Substitution for program core and electives must be pre-approved by discipline Dean. However, for Track D, the psychology elective selection must **not** include *PSY-201, Educational Psychology*.

Core electives should be carefully planned to meet the 60 credit degree requirements of CCAC and the requirements of individual transfer institutions.

Homeland Security (615)

ALLEGHENY, BOYCE, NORTH, SOUTH
Associate of Science

This program is designed to prepare students for positions in homeland security. Risk management, systems integration, threat dynamics and the legal, political and ethical issues associated with homeland security are explored. The criminal justice system, perspectives on terrorism, cyber security and continuity of operations are also examined. Graduates of this program may seek employment as homeland security professionals in various occupations including border, airport and seaport security as well as employment in the intelligence field, technology security and disaster or emergency response.

Upon successful completion of the program, the graduate will:

1. Explain the broad range of federal policies and procedures enacted since the events of 9/11 and identify the major security problems linked to terrorism.
2. Summarize the organizations involved in homeland security, how they are organized, how they inter-relate and their specific roles.
3. Explain risk assessment principles in a real world environment.
4. Identify homeland security grant programs and develop a formal homeland security grant proposal.
5. Identify the various templates, tools and formats to evaluate an operation and prepare a Continuity of Operation Plan.

Degree Requirements

First Semester	Credits
CIT-115 Introduction to Information Technology	3
CJC-101 Introduction to Criminal Justice ¹	3
ENG-101 English Composition	3
HLS-101 Orientation to Homeland Security and Emergency Preparedness, Planning and Response	3
HLS-102 Perspectives on Terrorism	<u>3</u>
	15

Second Semester

CIT-181 Principles of Information Security	4
ENG-102 English Composition 2	3
PSY-101 Introduction to Psychology	3
Criminal Justice and Criminology Elective	3
Mathematics Elective	<u>3-4</u>
	16-17

Third Semester

FSA-102 Principles of Emergency Services ²	3
HLS-103 Introduction to Physical Security and Deterrents to Terrorism	3
HLS-203 Emergency Medical Services and Health Services Orientation ³	3
SPH-101 Oral Communications or Philosophy Elective	3
Science Elective	<u>3-4</u>
	15-16

Fourth Semester

HLS-205 Introduction to Homeland Security Grant Writing and Grants Management	3
HLS-206 Continuity of Operation Planning	3
HLS-207 Homeland Security and Emergency Management	3
General Elective	3
Social Science Elective	<u>3</u>
	15

Minimum Credits to Graduate: 61-63

¹CJC-101: CCAC will award credit for this course with the "Police Academy Training Certificate."

²FSA-102: CCAC will award credit for this course with the "Pennsylvania Firefighter 1 Certificate."

³HLS-203: CCAC will award credit for this course with the "Pennsylvania Emergency Medical Technician Certificate"

All documents must be presented to the Registration and Advisement office for this credit to be posted to the CCAC transcript and included in this program.

Homeland Security (616)

ALLEGHENY, BOYCE, NORTH, SOUTH

Certificate

This program is designed to prepare students for positions in homeland security. Risk management, systems integration, threat dynamics and the legal, political and ethical issues associated with homeland security are explored. The criminal justice system, perspectives on terrorism, cyber security and continuity of operations are also examined. Graduates of this program may seek employment as homeland security professionals in various occupations including border, airport and seaport security as well as employment in the intelligence field, technology security and disaster or emergency response.

Upon successful completion of the program, the graduate will:

1. Identify the major security problems linked to terrorism.
2. Explain risk assessment principles in a real world environment.
3. Identify homeland security grant programs.
4. Develop a formal homeland security grant proposal.
5. Identify the various templates, tools and formats to evaluate an operation and prepare a Continuity of Operation Plan.

Certificate Requirements

First Semester

		Credits
CIT-115	Introduction to Information Technology	3
HLS-101	Orientation to Homeland Security and Emergency Preparedness, Planning and Response	3
HLS-102	Perspectives on Terrorism	3
HLS-103	Introduction to Physical Security and Deterrents to Terrorism	3
		12

Second Semester

CIT-181	Principles of Information Security	4
HLS-205	Introduction to Homeland Security Grant Writing and Grants Management	3
HLS-206	Continuity of Operation Planning	3
		10

Minimum Credits to Graduate 22

Labor & Management Studies (210.1)

ALLEGHENY

Certificate

The Labor and Management Studies (LMS) Certificate program is a limited enrollment, workforce program for incumbent workers. This certificate will provide a structured environment where Pittsburgh regional economic issues are discussed from a balanced labor and management perspective. Through course work, independent study and practical application, this program will enhance an awareness of the labor and management relationship to regional economic development, provide a forum for both labor and management to address critical issues and develop a broad perspective of those issues and challenges facing both in the greater Pittsburgh region.

Participants in this program are present or future practitioners in labor and/or management positions such as human resources, supervision, stewards or union officers in a variety of trades and occupations who will be admitted to the program upon submission and approval of the program application.

Program courses are offered once a year and students will progress through this program as part of a cohort. To meet the certificate requirements, students must plan to complete one summer session.

Upon successful completion of the program, the graduate will:

1. Articulate fundamental issues shaping regional economic growth.
2. Compare and contrast the varying perspectives that labor and management bring to key regional issues.
3. Outline the richness and complexity of labor management history, present relations and future challenges in the context of regional development.
4. Apply learned skills including dialogue and conflict resolution and consensus building.
5. Relate local economic issues to the challenges of the larger global economy.

(continued)

Labor & Management Studies (210.1) (continued)

Certificate Requirements

First Semester	Credits
LMS-101 Introduction to Labor and Management Studies	3
Second Semester	
LMS-103 Critical Issues in Pittsburgh Regional Labor and Management Relations	3
Summer	
LMS-105 Labor and Management Research/Portfolio Development and Application ¹	3
Third Semester	
LMS-107 Human Capital in Regional Economic Development	3
Fourth Semester	
LMS-109 Pittsburgh Labor and Management in the Global Economy	<u>3</u>
Minimum Credits to Graduate:	15

¹LMS-105 is offered as a web-enhanced course.

Psychology (053.4)

ALLEGHENY, BOYCE, NORTH, SOUTH
Associate of Arts



This program prepares the student for transfer to a four-year institution with a broad college background and significant coursework in psychology and the disciplines that support it.

Graduates work for a bachelor's degree or advanced degree in Psychology or related fields. The program also provides a strong and diverse preparation in the liberal arts and sciences for those desiring a broad educational background for transfer to a variety of programs at four-year institutions.

Upon successful completion of the program, the graduate will:

1. Describe and explain the major concepts, theoretical perspectives, empirical findings and historical trends in psychology.
2. Explain and apply basic research methods in psychology, including research design, data analysis and interpretation.
3. Use critical and creative thinking, skeptical inquiry, and when possible, the scientific approach to solve problems related to behavior and mental processes.
4. List and apply psychological principles to personal, social and organization issues.
5. Weigh evidence, tolerate ambiguity, act ethically and reflect other values that are the underpinning of psychology as a discipline.

First Semester	Credits
ENG-101 English Composition 1	3
PSY-101 Introduction to Psychology ¹	3
Computer Information Technology Elective ²	3-4
History Elective	3
Mathematics Elective (MAT-108 Intermediate Algebra, or equivalent)	<u>3-4</u>
	15-17

Second Semester

BIO-151 General Biology 1 ³	4
ENG-102 English Composition 2	3
PSY-202 Social Psychology or Psychology Life Span/Developmental Elective ⁴	3
Philosophy Elective ⁵	3
Speech Elective	<u>3</u>
	16

(continued)

Psychology (053.4) (continued)

Third Semester

PSY-208	Abnormal Psychology ¹	3
PSY-270	Statistics for the Behavioral and Social Sciences ¹	4
	English Elective	3
	Science Elective ⁶	<u>3-4</u>
		13-14

Fourth Semester

PSY-290	Research Methods and Applications ¹	4
	Humanities Elective	3
	Restricted Elective ⁷	3
	Social Sciences Elective	<u>6</u>
		16

Minimum Credits to Graduate: 60–63

The following list of courses and electives are required for the PA Statewide Articulation Agreement in Psychology. Students intending to transfer to a PA Trac college or university should consult a transfer counselor early in their program.

¹Psychology:

PSY-101	Introduction to Psychology	3
PSY-202	Social Psychology or One (1) Life Span Course ⁴	3
PSY-208	Abnormal Psychology	3
PSY-270	Statistics for the Behavioral and Social Sciences	4
PSY-290	Research Methods and Applications	4

²Computer and Information Technology Elective:

CIT-100	Computer Fundamentals and Applications or	3
CIT-140	Office Productivity Applications	4

³Science Course:

BIO-151	General Biology 1	4
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⁴Psychology Life Span/ Developmental Elective (choose one course)

PSY-108	Human Growth and Development	3
PSY-113	Psychology of Death and Dying	3
PSY-204	Adolescent Psychology	3
PSY-210	Child Psychology	3
PSY-214	Psychology of Adulthood	3

⁵Philosophy Elective:

PHL-155	Ethics	3
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⁶Science Elective: Students should select lab courses from Biology, Chemistry, Physics or Astronomy.

⁷Restricted Elective: Students should select from the following: Art, Dance, Foreign Language, Geography, Health and Physical Education, Literature, Music or Theatre.

Social Sciences (059.2)

ALLEGHENY, BOYCE, NORTH, SOUTH

Associate of Arts

This program prepares the student for transfer to a four-year institution with a broad college background and skill and knowledge in the social sciences. Students can pursue an overall general degree or develop a concentration in sociology/anthropology, history or political science.

Upon successful completion of the program, the graduate will:

1. Demonstrate basic knowledge of public and constitutional law and the political institutions and processes of the government of the United States.
2. Discuss and analyze the dynamics of politics and power in political systems in the modern world.
3. Historical Context. Demonstrate knowledge of American and world history sufficiently to be able to (1) read, comprehend, recall and discuss historical interpretation and data; and (2) place events and the interpretation of those events in an appropriate temporal and spatial context, including a meaningful chronological order and within a larger scheme of historical evolution and appreciation of historical epoch.
4. Differentiate among the fundamental theoretical perspectives of sociology and/or anthropology.
5. Define social structures in the form of the social institutions (*i.e.*, religion, government, economy and media) and other critical structures such as stratification as well as social forces such as conformity and discrimination.

Graduates may earn a bachelor's degree in Geography, History or Political Science and prepare for study in the professions, including education and the law.

Degree Requirements

First Semester		Credits
ENG-101	English Composition 1	3
HIS-101	History of Western Civilization 1 or	3
HIS-104	US History 1	3
SOC-101	Introduction to Sociology	3
	Computer Information Technology Elective	3-4
	Humanities Elective ¹	<u>3</u>
		15-16

(continued)

Social Sciences (059.2) (continued)

Second Semester

ANT-101	Introduction to Anthropology	3
ENG-102	English Composition 2	3
POL-101	Introduction to Political Science or	3
POL-103	American Government	3
	Humanities Elective ¹	3
	Mathematics Elective	3-4
		15-16

Third Semester

	English Elective	3
	Humanities Elective ¹ or	3
	Social Science Elective ²	3
	Natural Science Elective	3-4
	Restricted Electives in Concentration	6
		15-16

Fourth Semester

	English Elective	3-4
	Mathematics/Science Elective	3-4
	Restricted Electives in Concentration	6
	Social Science Elective ²	3
		15-16

Minimum Credits to Graduate 60-64

¹Humanities electives recommended are ethics, logic and speech.

²Social science electives include alpha codes *ANT*, *CJC*, *ECO*, *GEO*, *HIS*, *POL*, *PSY* and *SOC*.

Social Science Concentrations

General Social Science

Student to select four courses with the alpha codes of *ANT*, *CJC*, *ECO*, *GEO*, *HIS*, *POL*, *PSY* and *SOC*.

Anthropology and Sociology

Student to select four courses with the alpha codes of *ANT* and *SOC*.

History

Student to select four courses with the alpha codes of *HIS* and *GEO*.

Political Science

Student to select four courses with the alpha codes of *ECO* and *POL*.

Social Work Foundation (630.4)

ALLEGHENY, NORTH, SOUTH

Associate of Science



This program prepares you to work in community and social service agencies.

Graduates work as paraprofessionals in group homes, drug and alcohol treatment centers and other social service agencies. However, it is highly recommended that CCAC students obtain their associate degree and transfer to an accredited Bachelor of Social Work (BSW) program. CCAC has developed partnerships with many accredited BSW programs; therefore students should explore opportunities to continue their education.

Upon successful completion of the program, the graduate will:

1. Employ social work terminology appropriately.
2. I identify the core values of the social work profession.
3. Define the major elements of the social work profession.
4. Examine the main theoretical perspectives of social work.
5. Assess diversity and its relevance to the social work practice.
6. Utilize technology including web-based resources, for the purpose of education, advocacy, research and practice
7. Apply critical thinking skills within the context of professional social work practice.

Social Work Core Competencies

CCAC social work faculty is committed to providing students with the opportunity to learn and fundamentally apply the following ten core competencies:

1. Professional identify
2. Ethical practice
3. Critical thinking
4. Diversity in practice
5. Human rights and justice research-based practice
6. Research and practice
7. Human behavior
8. Policy practice
9. Practice context
10. Encouragement, assessment, intervention and evaluation of social work practices

(Council of Social Work Education)

(continued)

Social Work Foundation (630.4) (continued)

The 10 core competencies are learned in each social work course and are assessed by the instructor through multiple methods.

Degree Requirements

First Semester

	Credits
ENG-101 English Composition 1	3
PHL-101 Introduction to Philosophy or	3
PHL-155 Ethics	3
POL-101 Introduction to Politics Science or	3
POL-103 American Government (Recommended)	3
SOC-101 Introduction to Sociology	3
SOW-101 Introduction to Social Work	3
	15

Second Semester

BIO-110 Introduction to Biological Sciences	4
ENG-102 English Composition 2	3
MAT-108 Intermediate Algebra	4
PSY-101 Introduction to Psychology	3
SOW-125 Introduction to Social Welfare	3
	17

Third Semester

HIS-104 US History 1 or	3
HIS-105 US History 2	3
SOW-150 Cultural Competence and Diverse Population	3
SPH-101 Oral Communication	3
English Literature Elective (200 Level) or	3
Foreign Language Elective	3
Science Elective with Lab	4
	16

Fourth Semester

MAT-165 Probability and Statistics (recommended if transferring) or	4
Social Science Elective ¹	3
SOW-110 Social Work Service Learning Practicum	3
SOW-210 Human Behavior in the Social Environment	3
Social Work Elective (2) ²	6
	15–16

Minimum Credits to Graduate 63–64

¹Recommended Social Science Electives (3 credits)

ECD-101 Introduction to Early Education and Child Development	3
ECD-202 Children with Special Needs	3
HIS-205 African-American History 3	
HIS-219 History of Women	3
HPE-171 Personal and Community Health and Wellness	3
PSY-108 Human Growth and Development	3
PSY-230 Counseling the Addict	3
SOC-117 Understanding Chemical Dependency	3
SOC-160 Introduction to Women's Studies	3
SOC-201 Sociology of the Family	3
SOC-208 Urban Sociology	3
SOC-211 Racial and Ethnic Minorities	3
SOC-212 Social Problems	3

²Social Work Restricted Electives (6 credits)

SOW-106 Interviewing Skills 3	
SOW-120 Child Welfare 3	
SOW-130 Community Resources 3	

Social Work: Fundamentals of Social Work Foundation (658.1)

ALLEGHENY, NORTH, SOUTH

Certificate

This program is designed for persons with a degree or individuals in human service related professions who have had little or no formal instruction in social work. Students learn social work terminology, core values, ethical principles and standards, theoretical perspectives and generalist social work practice at the introductory level.

Students are able to directly transfer credits to Pennsylvania State System of Higher Education (PASSHE) institutions with statewide program-to-program articulation agreements in social work.

Upon successful completion of the program, the graduate will:

1. Employ social work terminology appropriately.
2. Identify core values of the social work profession.
3. Define the major elements of the social work profession.
4. Examine the main theoretical perspectives of social work.
5. Assess diversity and its relevance to social work practices.

Degree Requirements

First Semester		Credits
SOW-101	Introduction to Social Work	3
SOW-125	Introduction to Social Welfare	3
SOW-150	Cultural Competence and Diverse Populations	$\frac{3}{9}$

Second Semester

SOW-110	Social Work Service Learning Practicum	3
SOW-210	Human Behavior in the Social Environment	3
	Social Work Electives (2) ¹	$\frac{6}{12}$

Minimum Credits to Graduate 21

¹ Social Work Restricted Electives (6 credits)		
SOW-103	Introduction to Case Management	3
SOW-106	Interviewing Skills	3
SOW-120	Child Welfare	3
SOW-130	Community Resources	3

Teacher Education: Middle Level & Secondary (099.4)

ALLEGHENY, BOYCE, NORTH, SOUTH

Associate of Arts

This program prepares the student for transfer to a four-year institution for teacher certification in grades of four to eight or seven to 12. Students are offered a broad college background along with skills and knowledge necessary for Middle Level and Secondary Certification.

Upon successful completion of this program, the graduate will:

1. Identify current PA teacher certification requirements, including the development of a professional portfolio and demonstrate behaviors appropriate to the profession.
2. Utilize resources, materials and technology for the classroom, including, but not limited to, the Pennsylvania Department of Education resources, (*i.e.*, academic standards).
3. Observe students in grades 4 to 12 in their learning environment and empirically document these observations.
4. Classify learning theories and psychological principles in relation to the development of an educational philosophy and pedagogical practices.
5. Analyze past and present topics in education.
6. Describe the role of the classroom teacher in meeting the needs of all students including those with sensory, behavioral, physical, language, cognitive, cultural and learning differences.

Students must be eligible for clearance through the Federal Criminal History Record (Act 114), Pennsylvania State Police Criminal History Check (Act 34), the Pennsylvania Department of Public Welfare Child Abuse History Clearance Act (Act 151) and meet local requirements of the field placement site.

Graduates achieving a minimum of 3.0 GPA are eligible to transfer to a bachelor's degree program in Education, leading to Middle Level or Secondary Teacher certification. Teacher certification candidates must successfully pass the required Preservice Academic Performance Assessment (PAPA) or PRAXIS Core Academics Skills for Educators exams.

(continued)

Teacher Education: Middle Level & Secondary (099.4) (continued)

Degree Requirements

First Semester

	Credits
EDU-125 Foundations of Middle Level and Secondary Education	3
ENG-101 English Composition 1	3
MAT-107 Mathematics for Elementary Education ¹ or	3
MAT-108 Intermediate Algebra ²	4
PSY-101 Introduction to Psychology	3
Restricted Humanities Elective ³	<u>3</u>
	15–16

Second Semester

ECD-113 Middle Childhood and Adolescent Development	3
ECD-202 Children With Special Needs	3
ENG-102 English Composition 2	3
Science With Lab	3–4
Political Science or Economic Elective ¹ or	3
Social Science Elective ²	<u>3</u>
	15–16

Third Semester

EDU-202 Educational and Assistive Technology	3
HIS-104 US History 1	3
MAT-110 Mathematics for Elementary Education 2 ¹ or	3
Mathematics course with a <i>MAT-108</i> prerequisite ²	3–4
PSY-201 Educational Psychology	3
English Literature Elective ⁴	<u>3</u>
	15–16

Fourth Semester

EDU-205 English Language Learners in the Classroom	3
GEO-101 World Geography ¹ or	3
HIS-101 History of Western Civilization 1 ² or	3
HIS-102 History of Western Civilization 2 ²	3
Certification Concentration Elective ⁵	3–4
Restricted Humanities Elective ³	3
Science Elective	<u>3–4</u>
	15–17

Minimum Credits to Graduate **60–65**

Students will choose the selection of these courses based on the transfer university and/or program; please consult a transfer counselor.

¹Recommended courses for Middle Level Specialization:

GEO-101	World Geography
MAT-107	Mathematics for Elementary Education
MAT-110	Mathematics for Elementary Education 2 Political Science or Economics Elective

²Recommended courses for Secondary Level Specialization:

HIS-101	History of Western Civilization 1 or
HIS-102	History of Western Civilization 2
MAT-108	Intermediate Algebra Mathematics elective with MAT-108 prerequisite Social Science Elective

³Restricted Humanities electives—select from:

ART-103	Art History—Ancient or	3
ART-104	Art History—Modern or	3
ART-106	Art Appreciation	3
PHL-101	Introduction to Philosophy or	3
PHL-103	Logic or	3
PHL-111	Religions of the World	3
SPH-101	Oral Communication (highly recommended for those interested in teaching grades 7 to 12)	3

⁴Recommended English Literature Electives:

ENG-115	General Literature	3
ENG-117	Children's Literature	3
ENG-205	American Literature to the Civil War	3

⁵Certification concentration elective: Check with counselor to see course recommendations) mathematics, science, English and social studies.

Teacher Education: Middle Level Mathematics Specialization- CCAC & Indiana University of Pennsylvania Collaborative (091.1)

All CCAC Campuses

Associate of Arts (CCAC)

Bachelor of Science (IUP) classes taught at Allegheny Campus

This collaborative program offers students the opportunity to earn an associate’s degree in Teacher Education: Middle Level and Secondary from CCAC and a bachelor’s degree in Middle-Level Education (Mathematics Specialization) from Indiana University of Pennsylvania (IUP). The collaborative education program prepares undergraduate students to become effective, highly-qualified teachers. Students who complete the program will be certified to teach general subjects in grades 4–6 and mathematics in middle schools in grades 7 and 8.

Upon successful completion of this program, the graduate will:

1. Meet the academic requirements for Pennsylvania certification in Middle Level Education Grades 4–8.
2. Use principles of development, cognition and learning to design and implement a standards-based curriculum.
3. Implement instructional resources, materials and technology for all learners in Grades 4–8, including, but not limited to, academic standards.
4. Demonstrate, through words and actions, attitudes and behaviors appropriate to the profession.
5. Utilize evaluation skills including interpretation of standardized tests and formal and informal assessments sufficient to be able to develop interventions that improve student learning.
6. Analyze past and present issues in middle level education, including the use of research-based strategies.

CCAC classes may be taken at all campuses; IUP classes are offered only at CCAC’s Allegheny Campus. This is a cohort program; students must attend classes full-time during their final two years in the program.

Students interested in the CCAC/IUP Collaborative Middle Level Mathematics Teacher Certification Program should follow the CCAC coursework outline below. Students should apply to the CCAC/IUP collaborative during the fall of their

freshman year. Application forms are available at campus admissions offices or by calling the CCAC/IUP Collaborative Teacher Certification Program office at 412.237.4501.

To maintain good standing and continue in the CCAC/IUP Collaborative Teacher Certification Program, students must successfully complete the prescribed six credits in mathematics and English, as well as EDSP 102 and EDU-202. Students must obtain health screenings and be eligible for clearances through the Federal Criminal History Record (Act 114), the Pennsylvania State Police Criminal History Check (Act 34), the Pennsylvania Public Welfare Child Abuse History Clearance Act (Act 151) and the Arrest or Conviction Report (Act 24).

Students must maintain a 3.0 cumulative grade point average, are required to pass the Preservice Academic Preparation Assessment (PAPA) or Praxis Core Academic Skills for Educators before their junior year and must pass PRAXIS 2 exams prior to student teaching.

Degree Requirements

Freshman, First Semester

		Credits
BIO-110	Introduction to Biological Science	4
ECD-113	Middle Childhood & Adolescent Development	3
ENG-101	English Composition 1	3
HIS-104	United States History 1 or	3
HIS-105	United States History 2	3
MAT-107	Mathematics for Elementary Education	3
		16

Freshman, Second Semester

ECD-202	Children With Special Needs	3
ENG-102	English Composition 2	3
MAT-110	Mathematics for Elementary Education 2	3
POL-103	American Government	3
PHY-100	Basic Physics	4
		16

Sophomore, First Semester

EDU-202	Educational & Assistive Technology	3
EDSP 102	<i>Educational Psychology</i> ²	3
ENG-115	General Literature	3
GEO-101	World Geography	3
MAT-108	Intermediate Algebra ¹	4
		16

(continued)

Teacher Education Middle Level Mathematics Specialization- CCAC & IUP Collaborative (091.1) (continued)

Sophomore, Second Semester

ART-106	Art Appreciation or	3
MUS-101	Introduction to Music or	3
THE-101	Introduction to Theatre	3
ECO-102	Principles of Macroeconomics	3
EDU-205	English Language Learners in the Classroom	3
MAT-135	Discrete Mathematics	3
PHL-101	Introduction to Philosophy or	3
PHL-103	Logic or	3
PHL-111	Religions of the World or	3
PHL-155	Ethics	3
MIDL 310	<i>Instructional Theory and Planning for the Middle Level</i>	<u>3</u>
		18

Junior, First Semester

EDUC 242	<i>Pre-student Teaching Clinical Experience I</i>	1
HPE-171	Personal & Community Health and Wellness	3
MAT-142	Pre-calculus ¹	4
MATH 456	<i>Geometry for Elementary/Middle Level Teachers</i>	3
MIDL 221	<i>Literature for Middle Level</i>	3
MIDL 222	<i>Reading Instruction and Assessment in Grades 4-8</i>	<u>3</u>
		17

Junior, Second Semester

EDSP 477	<i>Assessment of Student Learning: Design and Interpretation of Educational Measures</i>	3
GGY-203	Physical Geology	4
MAT-165	Probability & Statistics ¹	4
MATH 459	<i>Technology in Elementary/Middle-Level Mathematics Instruction</i>	3
MATH 471	<i>Algebra for Elementary/Middle Level Teachers</i>	<u>3</u>
		17

Senior, First Semester

EDUC 342	<i>Pre-student Teaching Clinical Experience II</i>	1
EDUC 442	<i>School Law</i>	1
MIDL 311	<i>Social Studies Instruction and Assessment in Grades 4-8</i>	3
MATH 413	<i>Methods of Teaching Math at the Middle Level</i>	3
MIDL 312	<i>Science Instruction and Assessment in Grades 4-8</i>	3
MIDL 425	<i>Methods of Teaching Language Arts in Grades 4-8</i>	<u>3</u>
		14

Senior, Second Semester

EDUC 421	<i>Student Teaching-General Education in Grades 4-6</i>	5
EDUC 440	<i>Professional Seminar: Teacher As Leader and Researcher Grades 4-8</i>	2
EDUC 441	<i>Student Teaching Math Education in grades 6, 7, or 8</i>	5
		12

Minimum Credits to Graduate (CCAC-AA) 75

Minimum Credits to Graduate (IUP-BS) 51

Minimum Credits to Graduate (Total) 126

¹MAT-108, MAT-142 and MAT-165 transfer to IUP as 3 credits

²3-Letter Alphacodes are CCAC classes; 4-letter Alphacodes are IUP classes

Teacher Education: Middle Level Science Specialization-CCAC & Indiana University of Pennsylvania Collaborative (092.1)

All CCAC Campuses
Associate of Arts (CCAC)
Bachelor of Science (IUP) classes taught at Allegheny Campus

This collaborative program offers students the opportunity to earn an associate’s degree in Teacher Education: Middle Level and Secondary from CCAC and a bachelor’s degree in Middle-Level Education (Science Specialization) from Indiana University of Pennsylvania (IUP). The collaborative education program prepares undergraduate students to become effective, highly-qualified teachers. Students who complete the program will be certified to teach general subjects in grades 4–6 and science in middle schools in grades 7 and 8.

Upon successful completion of this program, the graduate will:

1. Meet the academic requirements for Pennsylvania certification in Middle Level Education Grades 4–8.
2. Use principles of development, cognition and learning to design and implement a standards-based curriculum.
3. Implement instructional resources, materials and technology for all learners in Grades 4–8, including, but not limited to, academic standards.
4. Demonstrate, through words and actions, attitudes and behaviors appropriate to the profession.
5. Utilize evaluation skills including interpretation of standardized tests and formal and informal assessments sufficient to be able to develop interventions that improve student learning.
6. Analyze past and present issues in middle level education, including the use of research-based strategies.

CCAC classes may be taken at all campuses; IUP classes are offered only at CCAC’s Allegheny Campus. This is a cohort program; students must attend classes full-time during their final two years in the program.

Students interested in the CCAC/IUP Collaborative Middle Level Science Teacher Certification Program should follow the CCAC coursework outline below. Students should apply

to the CCAC/IUP collaborative during the fall of their freshman year. Application forms are available at campus admissions offices or by calling the CCAC/IUP Collaborative Teacher Certification Program office at 412.237.4501.

To maintain good standing and continue in the CCAC/IUP Collaborative Teacher Certification Program, students must successfully complete the prescribed six credits in mathematics and English, as well as EDSP 102 and EDU-202. Students must obtain health screenings and be eligible for clearances through the Federal Criminal History Record (Act 114), the Pennsylvania State Police Criminal History Check (Act 34), the Pennsylvania Public Welfare Child Abuse History Clearance Act (Act 151) and the Arrest or Conviction Report (Act 24).

Students must maintain a 3.0 cumulative grade point average, are required to pass the Preservice Academic Preparation Assessment (PAPA) or Praxis Core Academic Skills for Educators before their junior year and must pass PRAXIS 2 exams prior to student teaching.

Degree Requirements

Freshman, First Semester		Credits
BIO-110	Introduction to Biological Science	4
ECD-113	Middle Childhood & Adolescent Development	3
ENG-101	English Composition 1	3
HIS-104	United States History 1 or	3
HIS-105	United States History 2	3
MAT-107	Mathematics for Elementary Education	3
		16
Freshman, Second Semester		
ECD-202	Children with Special Needs	3
ECO-102	Principles of Macroeconomics	3
ENG-102	English Composition 2	3
MAT-110	Mathematics for Elementary Education 2	3
PHS-102	Physical Science	3
		15
Sophomore, First Semester		
ART-106	Art Appreciation or	3
MUS-101	Introduction to Music or	3
THE-101	Introduction to Theatre	3
EDSP 102	<i>Educational Psychology</i> ¹	3
EDU-202	Educational & Assistive Technology	3
ENG-115	General Literature	3
PHY-100	Basic Physics	4
		16

(continued)

Teacher Education Middle Level Science Specialization-CCAC & IUP Collaborative (092.1) (continued)

Sophomore, Second Semester

EDU-205	English Language Learners in the Classroom	3
GEO-101	World Geography	3
MIDL 310	<i>Instructional Theory and Planning for the Middle Level</i>	3
PHL-101	Introduction to Philosophy or	3
PHL-103	Logic or	3
PHL-111	Religions of the World or	3
PHL-155	Ethics	3
POL-103	American Government	3
		15

Junior, First Semester

CHM-109	Introduction to Chemistry	4
EDUC 242	<i>Pre-student Teaching Clinical Experience 1</i>	1
GGY-203	Physical Geology	4
HPE-171	Personal & Community Health and Wellness	3
MIDL 221	<i>Literature for Middle Level</i>	3
MIDL 222	<i>Reading Instruction and Assessment in Grades 4-8</i>	3
		18

Junior, Second Semester

CHM-120	Bio-organic Chemistry	4
EDSP 477	<i>Assessment of Student Learning Design and Interpretation of Educational Measures</i>	3
EDUC 481	<i>Special Topics in Science</i>	3
GGY-201	Introduction to Geology	3
MAT-165	Probability and Statistics ²	4
		17

Senior, First Semester

EDUC 342	<i>Pre-student Teaching Clinical Experience II</i>	1
EDUC 442	<i>School Law</i>	1
MATH 413	<i>Methods of Teaching Math at the Middle Level</i>	3
MIDL 311	<i>Social Studies Instruction and Assessment in Grades 4-8</i>	3
MIDL 312	<i>Science Instruction and Assessment in Grades 4-8</i>	3
MIDL 425	<i>Methods of Teaching Language Arts in Grades 4-8</i>	3
		14

Senior, Second Semester

EDUC 421	<i>Student Teaching-General Education in grades 4-6</i>	5
EDUC 440	<i>Professional Seminar: Teacher As Leader and Researcher Grades 4-8</i>	2
EDUC 441	<i>Student Teaching Science Education in grades 6, 7, or 8</i>	5
		12

Minimum Credits to Graduate (CCAC–Associate) 75

Minimum Credits to Graduate (IUP–Bachelor) 48

Minimum Credits to Graduate (Total) 123

¹3-Letter Alphacodes are CCAC classes; 4-letter Alphacodes are IUP classes

²MAT-165 transfers to IUP as 3 credits

Transportation Security Administration (614)

ALLEGHENY, BOYCE, NORTH, SOUTH
Diploma

The Transportation Security Administration (TSA) coordinates higher education agency-wide and recognizes the untapped potential of a majority of Transportation Security Officers (TSO's) employed at U.S. airports. The TSA believes providing educational opportunities will improve their skill set on the job while helping the TSA meet its goals of improved customer service and skilled employees. This diploma provides the basic skill set for TSA employees.

Upon successful completion of the program, the graduate will:

1. Explain the broad range of federal policies and procedures enacted since the events of 9/11 and identify the major security problems linked to terrorism.
2. Summarize the role and mission of the Transportation Safety Administration.
3. Explain risk assessment principles in a real world environment.
4. Identify the characteristics, ideologies, motives and behaviors of various extremist and terrorist groups that foster and support terrorist criminal activities.
5. Describe intelligence gathering and analysis pertinent to homeland security and other threats facing government and private sectors.
6. Describe the impact of technology on countering threats to transportation systems and border security.

Diploma Requirements

One Semester		Credits
TSA-101	Introduction to Homeland Security	3
TSA-102	Intelligence Analysis and Security Management	3
TSA-103	Transportation and Border Security	3
Minimum Credits to Graduate		9

Women's Studies (106)

ALLEGHENY, BOYCE, NORTH, SOUTH
Certificate

The Women's Studies certificate will enhance awareness of women's issues. Upon completion of this program, graduates may seek to transfer certificate courses to a women's studies degree program at a college or university. Students should choose electives based on educational/employment requirements and transfer of the course(s) to colleges and universities.

Upon successful completion of the program, the graduate will:

1. Identify historical and current social, legal, economic, political and psychological issues in women's lives, locally and globally.
2. Describe women's contribution to, and participation in, culture, politics, society, economy and religion and how the methodologies and theories of feminism have changed these institutions.
3. Connect concepts of power, privilege, oppression and patriarchy within various historical, economic, political and psychological areas.
4. Describe how gender (along with class, race, ethnicity, ability, physical and mental challenges and sexual orientation) combine to form identity.
5. Discuss forms of institutional discrimination and violence against women.

Certificate Requirements

First Semester		Credits
SOC-160	Introduction to Women's Studies	3
ENG-118	Women as Writers ¹	3
HIS-219	History of Women	3
PSY-109	Psychology of Women	3
	Restricted Electives ²	6-9
		18-21
Minimum Credits to Graduate		18

(continued)

Women's Studies (106) **(continued)**

¹Course has a prerequisite that must be completed prior to enrolling in this course.

²Restricted Electives:

ANT-102	Introduction to Cultural Anthropology	3
BIO-120	Human Reproduction/ Sexually Transmitted Diseases	3
ETH-112	Understanding Violence in America	3
PAL-105	Family Law	3
PSY-109	Psychology of Women	3
PSY-114	Human Sexuality	3
SOC-201	Sociology of the Family	3
SOC-210	The Sociology of Sexual Behavior	3
SOC-211	Racial and Ethnic Minorities	3

Health Programs

Certificates and degrees in health prepare students for employment in a wide range of health professions including diagnostic programs, direct treatment and support programs.

The Health programs at CCAC are limited enrollment programs. This means that students cannot enroll in Health courses without having formally applied and been accepted into a program. Application to Health programs is separate from your general CCAC application. For most health programs, enrollment is competitive and limited by availability of clinical sites and program requirements and generally students need to take required science and mathematics coursework before applying.

For more information on applying to a Health program, please email the title of the program(s) you are interested along with your US Postal Mailing address to Allied Health Career Programs Admission Information (alliedhealthinfo@ccac.edu). Applications are not available online.

CCAC encourages students to apply for certificates (where possible) as they work toward an associate's degree requirements. Students should investigate baccalaureate programs as they advance in their chosen careers.

Information on specific courses in a selected academic



program can be found at ccac.edu CCAC Central e-Services. That information includes the course description, requisite courses, location,

days, times, faculty member, etc. Note that some courses are only offered during alternate terms. The syllabus (a detailed course description) is available for many courses at <http://webapps.ccac.edu/MasterSyllabi/>

All courses should be chosen with the help of an academic advisor.

- Central Service Technician (438.1) (Certificate)
- Computed Assisted Tomography (CAT Scanning) (445.1) (Certificate)
- Diagnostic Medical Sonographer (Ultrasound) (554.6) (Degree)
- Dietetic Technician (590.2) (Degree)
- Dietary Manager (591.2) (Certificate)
- Health Information Technology (550.4) (Degree)
- Magnetic Resonance Imaging (MRI Scanning) (446.1) (Certificate)
- Massage Therapy (443.1) (Degree)
- Massage Therapy (403.1) (Certificate)
- Massage Therapist (695.1) (Certificate)
- Medical Assistant (535.1) (Degree)
- Medical Assistant (419.1) (Certificate)
- Medical Insurance Specialist (595.2) (Certificate)
- Medical Laboratory Technician (525.1) (Degree)
- Medical Laboratory Assistant (571) (Certificate)
- Nuclear Medicine Technology (555.2) (Degree)
- Nuclear Medicine Technology (560.1) (Certificate)
- Nursing (575.1) (Degree)
- Occupational Therapy Assistant (587.2) (Degree)
- Operating Room Nursing (634.1) (Certificate)
- Paramedic (533.1) (Degree)
- Paramedic (534.1) (Certificate)
- Pharmacy Technician (518.2) (Degree)
- Pharmacy Technician (418.2) (Certificate)
- Phlebotomist (513.1) (Certificate)
- Physical Therapist Assistant (628.1) (Degree)
- Radiation Therapy Technology (565.1) (Degree)
- Radiation Therapy Technology (566.1) (Certificate)
- Radiologic Technologist (558) (Degree)
- Respiratory Therapy (540.1) (Degree)
- Surgical Technologist (530.2) (Degree)
- Surgical Technology (583.2) (Certificate)

STUDENT NOTES

Central Service Technician (438.2)

BOYCE
Certificate

This program is designed to prepare students for the entry-level position of central service technician with exposure to all facets of central service functioning. Training involves surgical instrumentation, principles of cleaning and processing equipment and instrumentation, methods of sterilization, packaging and storage, maintenance of equipment, case cart systems, inventory control and current trends in central service. Clinical experiences in area hospitals' central service departments are included.

Upon successful completion of the program, the graduate will:

1. Utilize required techniques related to the sterilization process.
2. Identify and describe the function of instruments and equipment.
3. Define and utilize aseptic techniques and principles.
4. Utilize health-care related computer applications.
5. Display behaviors appropriate for a professional health care environment.

Graduates are eligible for national certification through the International Association of Healthcare Central Service Material Management (IAHCSMM).

Certificate Requirements

One Semester	Credits
ALH-106 Basic Life Support	1
CIT-615 Computer Application in Health Care	1
CST-103 Inventory Management for Central Service	3
CST-112 Central Service Clinical	6
SUR-110 Surgical & Central Service Technology 1	<u>5</u>

Minimum Credits to Graduate **16**

Computed Assisted Tomography (CAT Scanning) (445.1)

BOYCE
Certificate

This is a two-semester program designed for certified radiologic technologists, RTR (R) or radiation therapist RTR (T) or nuclear medicine technologists RTR (N) or CNMT to expand skills for specialization in computed tomography scanning (CAT Scanning).

Computerized tomography (CAT or CT) imaging is a field that utilizes scanners to produce images of human anatomy as an aid in the diagnosis of disease and injury.

CT scanning technologists work in hospitals, clinics, health care centers and private imaging radiology departments.

The availability of clinical sites and other factors limit enrollment. Students must make separate application to the program. Applications are available in the campus Admissions offices.

Applicants should have a successful record of achievement in a regionally approved accredited radiologic technology program or radiation therapy technology program or nuclear medicine technology program, be registered in radiography or radiation therapy or nuclear medicine, with the certification examination having been passed at least one year prior to sitting for the advanced level examination in computed tomography.

Graduates are eligible to make application to take the advanced certification examination provided by the American Registry of Radiologic Technologists (ARRT) (CT). All examination requirements are available at www.arrrt.org.

Upon successful completion of the program, the graduate will:

1. Function as a competent, technically proficient entry-level CT technologist who can apply and perform safe patient care radiation protection practices according to industry standards.
2. Utilize safe methods to provide patients with minimized radiation dose levels during imaging procedures.

(continued)

Computed Assisted Tomography (CAT Scanning) (445.1)(continued)

3. Operate computerized imaging scanners safely to meet standardized protocols under the direction of a radiologist.
4. Perform equipment manipulation functions to produce quality computerized CT images.
5. Employ professional characteristics required by the radiologic technology profession.

Certificate Requirements

First Semester	Credits
CAT-201 Computed Tomography Instrument & Equipment Procedures	4
CAT-202 Cross-sectional Anatomy for Computed Tomography Imaging	2
CAT-203 Patient Care/Radiation Safety for Imaging Technologists	$\frac{2}{8}$
Second Semester	
CAT-204 Clinical Applications of Computerized Tomography	$\frac{4}{4}$
Minimum Credits to Graduate	12

Diagnostic Medical Sonographer (Ultrasound) (554.6)

BOYCE

Associate of Science

Diagnostic ultrasound uses high frequency sound waves to image various organs and structures within the body.

The diagnostic medical sonographer is qualified by academic and clinical training to provide patient services using diagnostic ultrasound under the supervision of a qualified doctor of medicine or osteopathy.

The ultrasound profession is subdivided into nine specialties. The specialties offered at CCAC are General Ultrasound, Cardiac Ultrasound and Vascular Ultrasound. Students will select one specialty field of study in which to major.

Graduates enter the job market with skills necessary to function as entry-level diagnostic medical sonographers.

Enrollment is limited by availability of clinical sites and other factors. Students must make separate applications to the ultrasound program. Applicants must have a successful record of achievement in high school science courses, algebra and physics or develop these skills prior to program admission.

Students must also meet pre-program requirements*, which include the successful completion of the following courses with a letter grade of "C" or better:

- ALH-140 Medical Terminology or BIO-123 Medical Biology & Terminology;
- BIO-110 Introduction to Biologic Science or BIO-151 General Biology 1;
- BIO-161 Anatomy & Physiology 1;
- BIO-162 Anatomy & Physiology 2;
- ENG-101 English Composition; and
- MAT-108 Intermediate Algebra
- PHY-100 Basic Physics.

Graduates are eligible to sit for the American Registry in Diagnostic Medical Sonography exam. Success on this exam leads to registration as a diagnostic medical sonographer.

The General, Cardiac and Vascular Ultrasound specialties are accredited by the Commission on Accreditation of Allied Health Education (CAAHEP), 1361 Park Street, Clearwater, FL 33756; 727.210.2350.

(continued)

Diagnostic Medical Sonographer (Ultrasound) (554.6) (Continued)

Upon successful completion of the program, the graduate will:

1. Provide safe patient care essential to sonographic procedures.
2. Apply principles of acoustic physics to image production.
3. Manipulate controlling factors to provide optimum imaging.
4. Obtain measurements and perform necessary calculations when needed to aid in diagnosis.
5. Produce sonograms which accurately depict anatomical structures.
6. Review relevant patient information and present appropriate data to physician.
7. Maintain ethical and professional standards when dealing with consumers and other members of the health-care profession.

(A) General Ultrasound: Abdomen, Obstetrics & Gynecology

Students selecting the General Ultrasound field of study (A) will perform examinations on the abdominal organs, the thyroid gland, as well as other structures. Ultrasound studies in obstetrics and gynecology are included under the General Ultrasound Field of study. Students selecting the General Ultrasound field of study will be eligible to sit for both the Abdominal and Obstetrics/Gynecology specialty boards. General sonographers work in hospital radiology departments, doctors' offices, clinics or mobile services

Degree Requirements	Credits
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Program Pre-Requisite Courses:

ALH-140	Medical Terminology or	3
BIO-123	Medical Biology & Terminology	3
BIO-161	Anatomy & Physiology 1	4
BIO-162	Anatomy & Physiology 2	4
ENG-101	English Composition 1	3
MAT-108	Intermediate Algebra	4
PHY-100	Basic Physics	4
		22

First Semester

DMS-102	Introduction to Clinical Experience: Patient Care & Ethical/Legal Issues	2
DMS-105	Cross-sectional Anatomy for Ultrasonography	4
ENG-102	English Composition 2 Humanities Elective	3 3
		12

Second Semester

DMS-103	Abdominal, Obstetrical & Gynecological Ultrasound	4
DMS-113	Ultrasound Clinical 1/Abdomen/GYN	2
PHY-127	Physics for Health Science/ Ultrasonography	3 3
PSY-101	Introduction to Psychology	3
		12

Summer

DMS-115	Ultrasound Clinical 2/ Abdomen-OB/GYN	4 4
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Third Semester

DMS-203	Advanced Abdomen & Small Parts Ultrasound	5
DMS-210	Ultrasound Instrumentation & Quality Control	3
DMS-223	Ultrasound Clinical 3/Abdomen- OB/GYN	6 14

Fourth Semester

DMS-225	Ultrasound Clinical 4/Abdomen- OB/GYN	6
DMS-227	Advanced OB/GYN Ultrasound	3
DMS-228	Doppler Vascular Sonography	4
		13

Minimum Credits to Graduate: 77

(continued)

Diagnostic Medical Sonographer (Ultrasound) (554.6) (Continued)

(B) Cardiac Ultrasound

Students selecting the Cardiac Ultrasound field of study (B) will perform examinations on the adult heart which includes evaluation of the heart valves, the heart chambers and the heart muscle. Students selecting the Cardiac Ultrasound field of study will be eligible to sit for the adult cardiac specialty boards. Cardiac sonographers work in hospital cardiology departments, doctors' offices, clinics or mobile services. The objective of the Cardiac Ultrasound field of study (B) is to prepare competent entry-level Cardiac sonographers in the cognitive (knowledge), psychomotor (skills) and affective (behavior) learning domains.

Degree Requirements Credits

Program Pre-Requisite Courses:

ALH-140	Medical Terminology or	3
BIO-123	Medical Biology & Terminology	3
BIO-161	Anatomy & Physiology 1	4
BIO-162	Anatomy & Physiology 2	4
ENG-101	English Composition 1	3
MAT-108	Intermediate Algebra	4
PHY-100	Basic Physics	4
		22

First Semester

DMS-102	Introduction to Clinical Experience: Patient Care & Ethical/Legal Issues	2
DMS-105	Cross-sectional Anatomy for Ultrasonography	4
ENG-102	English Composition 2	3
	Humanities Elective	3
		12

Second Semester

DMS-104	Cardiac Ultrasound	4
DMS-114	Ultrasound Clinical 1/Cardiac	2
PHY-127	Physics for Health Science/ Ultrasonography	3
PSY-101	Introduction to Psychology	3
		12

Summer

DMS-116	Ultrasound Clinical 2/Cardiac	4
		4

Third Semester

DMS-204	Advanced Cardiac Ultrasound	5
DMS-210	Ultrasound Instrumentation & Quality Control	3
DMS-224	Ultrasound Clinical 3/Cardiac	6
		14

Fourth Semester

DMS-226	Ultrasound Clinical 4/Cardiac	6
DMS-228	Doppler Vascular Sonography Recommended Elective(s) ¹	4
		=
		10

¹Recommended Elective(s)

DMS-245	Cardiovascular Phlebotomy	1
DMS-246	Cardiovascular EKG	1

Minimum Credits to Graduate

74

(continued)

Diagnostic Medical Sonographer (Ultrasound) (554.6) (Continued)

(C) Vascular Ultrasound

Students selecting the Vascular Ultrasound field of study (C) will perform examinations of the peripheral and cerebral vascular systems, using Doppler technique and conventional ultrasound imaging. Students selecting the Vascular Ultrasound field of study will be eligible to sit for the vascular specialty boards. Vascular sonographers may work in hospital's dedicated vascular departments, general or cardiac ultrasound departments, doctors' offices, clinics or mobile services. The objective of the Vascular Ultrasound field of study (C) is to prepare competent entry-level vascular technologists in the cognitive (knowledge), psychomotor (skills) and affective (behavior) learning domains.

Degree Requirements Credits

Program Pre-Requisite Courses:

ALH-140	Medical Terminology or	3
BIO-123	Medical Biology & Terminology	3
BIO-161	Anatomy & Physiology 1	4
BIO-162	Anatomy & Physiology 2	4
ENG-101	English Composition 1	3
MAT-108	Intermediate Algebra	4
PHY-100	Basic Physics	4
		22

First Semester

DMS-102	Introduction to Clinical Experience: Patient Care & Ethical/Legal Issues	2
DMS-105	Cross-sectional Anatomy for Ultrasonography	4
ENG-102	English Composition 2	3
	Humanities Elective	3
		12

Second Semester

DMS-125	Vascular Ultrasound	4
DMS-135	Ultrasound Clinical 1/Vascular Ultrasound	2
PHY-127	Physics for Health Science/ Ultrasonography	3
PSY-101	Introduction to Psychology	3
		12

Summer

DMS-137	Ultrasound Clinical 2/Vascular Ultrasound	4
		4

Third Semester

DMS-207	Advanced Vascular Ultrasound	5
DMS-210	Ultrasound Instrumentation & Quality Control	3
DMS-235	Ultrasound Clinical 3/Vascular	6
		14

Fourth Semester

DMS-237	Ultrasound Clinical 4/Vascular	6
DMS-239	Abdominal/OB-GYN/Cardiac Ultrasound	4
	Recommended Elective(s) ¹	=
		10

¹Recommended Elective(s)

DMS-245	Cardiovascular Phlebotomy	1
DMS-246	Cardiovascular EKG	1

Minimum Credits to Graduate: 74

Dietetic Technician (590.2)

ALLEGHENY

Associate of Science

The Dietetic Technician program provides education in the field of dietetics, nutrition and management. The program prepares students for management positions in food service establishments, restaurants, nursing homes and hospitals. In addition, students are prepared to work with dietitians, nutritionists, in hospitals, nursing homes or providing nutrition education in community settings and in home health agencies.

The degree program is approved by the Accreditation Council of Education in Nutrition and Dietetics (ACEND) of the Academy of Nutrition and Dietetics (AND) and the Association of Nutrition and Foodservice Professionals (ANFP).

Graduates of this program are eligible to take the registration exam given by the Accreditation Council of Education in Nutrition and Dietetics (ACEND) of the Academy of Nutrition and Dietetics (AND) to become a Dietetic Technician Registered (DTR) and the credentialing exam from the Association of Nutrition and Foodservice Professionals (ANFP) to become a Certified Dietary Manager (CDM).

Admission is limited by the availability of clinical sites and other factors. Students must make separate application to this program.

Applicants must be eligible for college-level courses and have a C or better in one year of high school algebra and chemistry or the equivalent.

This program is accredited by the Accreditation Council of Education in Nutrition and Dietetics of the Academy of Nutrition and Dietetics, 120 South Riverside Plaza, Suite 2000, Chicago, IL 60606; 312.899.0400 ext. 5400, www.eatright.org/cade.

Upon successful completion of the program, the graduate will:

1. Apply the principles of problem solving and critical thinking in the practice of dietetics.
2. Apply basic scientific and mathematical concepts related to the practice of dietetics.
3. Employ written and oral communication skills appropriate for the practice of dietetics.
4. Recognize the socio-historical background of diverse populations and provide the appropriate nutrition intervention.
5. Utilize current technologies in the practice of dietetics.

Program Goals:

1. Provide a curriculum of sequential course work that gradually and consistently builds student knowledge in dietetics and coordinates classroom learning with appropriate practical experience.
2. Prepare students with the skills to sit for the registration examination for dietetic technicians and employment in the profession.
3. Establish and maintain a symbiotic relationship with dietetic professionals and health care institutions in the community.

Degree Requirements

First Semester		Credits
BIO-103	Introduction to Human Biology	3
DIT-102	Dietetic/Food Service Orientation	3
DIT-103	Nutrition Assessment	2
DIT-104	Foods	3
DIT-105	Foods Lab	1
DIT-106	Fundamentals of Nutrition	3
		15
Second Semester		
ALH-140	Medical Terminology	3
DIT-110	Foodservice Production & Purchasing	3
DIT-114	Medical Nutrition Therapy	4
DIT-125	Food Protection Certification	2
MAT-108	Intermediate Algebra	4
		16
Third Semester		
CHM-120	Bio-organic Chemistry	4
CIT-100	Computer Fundamentals & Applications	3
DIT-210	Human Resource Management for Dietetics	3
ENG-101	English Composition 1	3
SPH-101	Oral Communication	3
		16

(continued)

**Dietetic Technician (590.2)
(continued)**

Fourth Semester

DIT-208	Community Nutrition	4
DIT-209	Dietetic Supervised Practice 2	4
DIT-212	Foodservice Systems	3
DIT-214	Dietetic Seminar	1
ENG-102	English Composition 2	3
PSY-101	Introduction to Psychology	3
		18

Summer

DIT-113	Dietetic Practice Seminar	2
DIT-201	Dietetic Supervised Practice 1	5
		7

Minimum Credits to Graduate **72**

Dietary Manager (591.2)

ALLEGHENY
Certificate

This two-semester, one-summer session program prepares individuals for employment in health care, institutional foodservice and community nutrition programs.

Graduates of this program are eligible for membership in the Association of Nutrition and Foodservice Professionals (ANFP) and to take the credentials examination to become a Certified Dietary Manager (CDM).

Admission is limited by the availability of clinical sites and other factors. Students must make separate application to this program.

Admission to the college and completion of developmental level courses is required.

Articulation to the Dietetic Technician associate's degree program is possible for all students having completed the Dietary Manager certificate program.

This program is accredited by the Association of Nutrition and Foodservice Professionals, 406 Surrey Woods Drive, St. Charles, IL 60174; 800.323.1908, www.dmaonline.org.

Upon successful completion of the program, the graduate will:

1. Employ written and oral communication skills in order to convey clear and organized information to employees.
2. Use digital technology to complete management functions, such as communication, purchasing and employee payroll.
3. Identify problems, explore solutions and prioritize/revise solutions in foodservice management.
4. Recognize the socio-historical background of diverse patient and employee populations.
5. Quantify resources and monitor expenditures to comply with available budgets.

(continued)

Dietary Manager (591.2) (continued)

Program Goals:

1. Provide a curriculum of sequential course work that gradually and consistently builds student knowledge in dietetics and coordinates classroom learning with appropriate practical experience.
2. Prepare students with the skills to sit for the certification examination for dietary managers and employment in the profession.
3. Establish and maintain a symbiotic relationship with dietetic professionals and health care institutions in the community.

Certificate Requirements

First Semester

	Credits
DIT-102 Dietetic/Foodservice Orientation	3
DIT-103 Nutrition Assessment	2
DIT-104 Foods	3
DIT-105 Foods Lab	1
DIT-106 Fundamentals of Nutrition	3
DIT-210 Human Resource Management for Dietetics	3
	15

Second Semester

ALH-140 Medical Terminology	3
DIT-110 Foodservice Production & Purchasing	3
DIT-114 Medical Nutrition Therapy	4
DIT-125 Food Protection Certification	2
	12

Summer

DIT-113 Dietetic Practice Seminar	2
DIT-201 Dietetic Supervised Practice 1	5
	7

Minimum Credits to Graduate 34

Health Information Technology (550.4)

ALLEGHENY

Associate of Science

This program provides education in the development, maintenance and use of patient health information for medical care, health planning, quality improvement, medical research, professional education and financial reimbursement.

Employment opportunities exist in hospitals, ambulatory care centers, long-term care, behavioral health care facilities and physician practices.

Graduates of this program are eligible to take the national examination of the American Health Information Management Association (AHIMA) to qualify as a registered health information technician (RHIT).

Admission is limited by the availability of clinical sites. Students must make separate application to this program.

Applicants must be eligible for college-level courses with a C or better in *BIO-110 Introduction to Biological Science*.

This program is accredited by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM), 233 N. Michigan Avenue, 21st Floor, Chicago, IL 60601; 312.233.1100, www.cahiim.org.

Upon successful completion of the program, the graduate will:

1. Apply technical proficiency in the entry-level competencies for health information technicians.
2. Identify and demonstrate the professional attitudes and ethical behaviors consistent with the Code of Ethics of the American Health Information Management Association.
3. Use effective written and oral communication skills appropriate for interpersonal and group environments.
4. Employ critical thinking and problem-solving skills in professional practice.
5. Meet eligibility requirements to sit for the national credentialing exam of the American Health Information Management Association to qualify as a Registered Health Information Technician.

(continued)

Health Information Technology (550.4) (continued)

Degree Requirements

First Semester		Credits
ALH-140	Medical Terminology	3
BIO-161	Anatomy & Physiology 1	4
CIT-100	Computer Fundamentals & Applications	3
MDR-100	Introduction to Health Data Content & Structure	4
	Mathematics Elective	<u>3-4</u>
		17-18
Second Semester		
ALH-125	Pharmacology or	3
BIO-107	Pharmacology	3
BIO-162	Anatomy & Physiology 2	4
CIT-140	Office Productivity Applications	4
MDR-103	Healthcare Statistics	2
MDR-206	Legal Aspects of Health Information	2
PSY-101	Introduction to Psychology	<u>3</u>
		18
Third Semester		
BIO-241	Pathophysiology	4
ENG-101	English Composition 1	3
MDR-102	Inpatient Clinical Coding & Secondary Records	4
MDR-202	Health Information Technology Directed Practice 1	3
MDR-207	Clinical Quality Improvement, Regulatory Agencies & Specialty Facilities	<u>3</u>
		17
Fourth Semester		
ENG-102	English Composition 2	3
MDR-203	Health Information Technology Directed Practice 2	3
MDR-208	Health Information Management	3
MDR-210	Ambulatory Care Clinical Coding & Reimbursement Systems	3
SPH-101	Oral Communication	<u>3</u>
		15
Minimum Credits to Graduate		67-68

Magnetic Resonance Imaging (MRI Scanning) (446.1)

BOYCE
Certificate

This is a two-semester program designed for certified radiologic technologists, RTR (R) or radiation therapist RTR (T) or nuclear medicine technologists RTR (N) or CNMT to expand skills for specialization in magnetic resonance imaging (MRI Scanning).

Magnetic resonance imaging (MRI) is a field that utilizes scanners to produce images of human anatomy as an aid in the diagnosis of disease and injury.

MRI scanning technologists work in hospitals, clinics, health care centers and private imaging radiology departments.

The availability of clinical sites and other factors limit enrollment. Students must make separate application to the program. Applications are available in the campus Admissions offices.

Applicants should have a successful record of achievement in a regionally approved accredited radiologic technology program or radiation therapy technology program or nuclear medicine technology program, be registered in radiography or radiation therapy or nuclear medicine, with the certification examination having been passed at least one year prior to sitting for the advanced level examination in magnetic resonance imaging.

Graduates are eligible to make application to take the advanced certification examination provided by the American Registry of Radiologic Technologists (ARRT) (MR). All examination requirements are available at www.arrrt.org

(continued)

Magnetic Resonance Imaging (MRI Scanning) (446.1) (continued)

Upon successful completion of the program, the graduate will:

1. Function as a competent, technically proficient entry-level MR technologist who can apply and perform safe patient care magnetic imaging protection practices according to industry standards.
2. Utilize safe screening methods of a patient's medical history prior to performing a magnetized medical scanning procedure.
3. Operate magnetic resonance imaging scanners safely to meet standardized protocols under the direction of a radiologist.
4. Perform equipment manipulation functions to produce quality magnetic MRI images.
5. Employ professional characteristics required by the radiologic technology profession.

Certificate Requirements

First Semester

	Credits
MRI-201 Magnetic Resonance Imaging Instrumentation & Equipment	4
MRI-202 Cross-sectional Anatomy for Magnetic Resonance Imaging	2
MRI-203 Patient Care & Magnetic Safety	2
	8

Second Semester

MRI-204 Clinical Applications of Magnetic Resonance Imaging	4
	4

Minimum Credits to Graduate

12

Massage Therapy (443.1)

BOYCE

Associate of Science

This program is designed to prepare students for a career in therapeutic massage. Graduates of the associate of science degree program are eligible to apply for licensure as a massage therapist in Pennsylvania.

Licensed massage therapists may work as independent contractors or employees in a variety of health-related settings including pain management clinics, wellness retreat centers, hospice facilities, orthopedic centers and physical therapy and chiropractic offices. Licensed therapists may also be employed in athletic clubs, resorts, spas, yoga centers, golf courses, beauty salons, dance studios and on cruise ships.

Students must make separate applications to the program and meet all pre-program requirements including completion of *BIO-110 Introduction to Biological Sciences* or *BIO-151 General Biology 1*.

Applicants must be eligible for all college level courses.

Upon successful completion of the program, the graduate will:

1. Plan and organize an effective massage and bodywork session.
2. Perform massage and bodywork for therapeutic benefit by way of seated (chair) massage, full body (table) massage or floor (mat) massage.
3. Develop professional and ethical relationships with clients and interdisciplinary health care teams.
4. Evaluate forms of business ownership useful for an independent massage therapy practice, business or employment situation.
5. Identify and implement strategies for personal health, wellness and on-going professional development.

Completion of the program qualifies the graduate to sit for the National Certification Examination for Therapeutic Massage and Bodywork (NCETMB), the National Examination for Therapeutic Massage (NCETM), the Massage and Bodywork Licensing Exam (MBLEx) and/or the National Examination for State Licensing (NESL).

Because certification and licensing requirements vary from state to state, students who plan to relocate after graduation are encouraged to verify these requirements in states other than Pennsylvania.

(continued)

Massage Therapy (443.1) (continued)

Degree Requirements

First Semester		Credits
ALH-109	Infection Control	2
ALH-140	Medical Terminology	3
BIO-161	Anatomy & Physiology 1	4
ENG-101	English Composition 1	3
MAS-101	Massage Therapy Principles & Procedures 1	4
		16
Second Semester		
BIO-162	Anatomy & Physiology 2	4
CIT-100	Computer Fundamentals & Applications	3
ENG-102	English Composition 2	3
MAS-102	Advanced Clinical Massage Techniques	4
PSY-101	Introduction to Psychology	3
		17
Third Semester		
HPE-171	Personal & Community Health & Wellness or	3
HPE-201	Applied Anatomy & Kinesiology	3
MAS-201	Massage Therapy Principles & Procedures 3	5
MAS-211	Clinical Applications of Massage 1	2
MAT-195	Business Mathematics	3
SPH-101	Oral Communication	3
		16
Fourth Semester		
BUS-101	Introduction to Business or	3
BUS-117	Public Relations	3
MAS-202	Massage Therapy Principles & Procedures 4	5
MAS-212	Clinical Applications of Massage 2	2
PHL-205	Medical Ethics & Law	3
		13
Minimum Credits to Graduate		62

Massage Therapy (403.1)

BOYCE
Certificate

This program is designed to prepare an individual with previous college experience for a health career as a massage therapist. Graduates will complete a course of study that exceeds 600 clock hours of curriculum content including but not limited to anatomy; physiology; kinesiology; human immunodeficiency virus and related risks; medical diseases; pathology; massage therapy and bodywork assessment theory and practice of sanitation, safety and hygiene; professional ethics, communication skills, business practices and law related to a massage therapy business. Successful completion of cardiopulmonary resuscitation and first aid training is required.

Enrollment is limited by lab size and other factors. Students must make separate application to the program. Applicants should have a successful record of achievement in high school science courses or develop these skills prior to program admission. Students must also meet pre-program requirements, which include the successful completion of *BIO-151 General Biology 1* **or** *BIO-110 Introduction to Biological Science*.

Upon completion of this program, graduates are eligible to take either the Massage and Bodywork Licensing Exam (MBLEx) offered by the Federation of State Massage Therapy Boards (FSMTB) or one of the national certification exams offered by the National Certification Board for Therapeutic Massage and Bodywork (NCBTMB).

A felony conviction may affect a graduate's ability to take the licensure examination or obtain state licensure. A majority of the states require a license to practice massage therapy.

Upon successful completion of the program, the graduate will:

1. Meet the requirements for a certificate in massage therapy exhibiting entry level competencies as a massage therapist, be prepared to pass the Massage Therapy Licensure from either the Massage and Bodywork Licensing Exam (MBLEx) offered by the Federation of State Massage Therapy Boards (FSMTB) or one of the national certification exams offered by the National Certification Board for Therapeutic Massage and Bodywork (NCBTMB) and gain employment.

(continued)

Massage Therapy (403.1) (continued)

2. Display professional behaviors that are congruent with the core values, standards and ethics of the massage therapy profession.
3. Demonstrate respect for cultural diversity, lifestyle values and choices of others.
4. Communicate effectively with clients, family members and other health care providers.
5. Utilize reflective judgment and problem solving skills and demonstrate participation in professional development opportunities to promote health and wellness.

Certificate Requirements

Prospective students must demonstrate a proficiency in the following courses:

ALH-140	Medical Terminology or	3
BIO-115	Human Biology in Health & Diseases or	5
BIO-123	Medical Biology & Terminology or	3
BIO-160	Introduction to Human Pathology or	4
BIO-175	Microbiology or	4
BIO-241	Pathophysiology	4
BIO-161	Anatomy & Physiology 1	4
BIO-162	Anatomy & Physiology 2	4
ENG-101	English Composition or	3
SPH-101	Oral Communication	3
PSY-101	Introduction to Psychology	3
	Mathematics Elective (MAT level 100 or higher)	3–4

One Semester

		Credits
ALH-102	Basic Emergency Management or	3
HPE-177	First Aid & Athletic Injuries or	3
PTA-203	Prevention & Treatment of Athletic Injuries	3
MAS-101	Massage Therapy Principles & Procedures 1	4
MAS-205	Intermediate Massage Therapy Theory, Techniques & Practice	5
MAS-214	Advanced Massage Therapy Theory, Techniques & Practice	5

Minimum Credits to Graduate

17

Massage Therapist (695.1)

BOYCE
Certificate

This program is designed to provide entry-level skills for students seeking a career as a massage therapist. The Massage Therapist certificate program is designed for students without any previous health care background. Completion of the program qualifies graduates to apply for a license as a massage therapist in Pennsylvania.

Licensed massage therapists may work as independent contractors or employees in chiropractic offices, resorts, casinos, fitness centers, wellness clinics, day spas, beauty salons and on cruise ships.

Students must make separate applications to the program and meet pre-program requirements including completion of *BIO-110 Introduction to Biological Science* **or** *BIO-151 General Biology 1*.

Applicants must be eligible for all college-level courses.

Upon successful completion of the program, the graduate will:

1. Plan and organize an effective massage and bodywork session.
2. Perform massage and bodywork for therapeutic benefit by way of seated (chair) massage, full body (table) massage or floor (mat) massage.
3. Develop professional and ethical relationships with clients and interdisciplinary health care teams.
4. Evaluate forms of business ownership useful for an independent massage therapy practice, business or employment situation.
5. Identify and implement strategies for personal health, wellness and on-going professional development.

Graduates of the program are eligible to sit for the National Certification Exam for Therapeutic Massage (NCETM) and/or the National Examination for State Licensing (NESL).

Because certification and licensing requirement vary by state, students who plan to relocate after graduation are encourage to verify the educational requirements in states other than Pennsylvania.

(continued)

Massage Therapist (695.1) (continued)

Certificate Requirements

First Semester

		Credits
ALH-109	Infection Control	2
ALH-140	Medical Terminology	3
BIO-161	Anatomy & Physiology 1	4
MAS-101	Massage Therapy Principles & Procedures 1	4
		<u>13</u>

Second Semester

BIO-162	Anatomy & Physiology 2	4
HPE-171	Personal & Community Health & Wellness or	3
HPE-201	Applied Anatomy & Kinesiology	3
MAS-102	Massage Therapy Principles & Procedures 2	4
PHL-205	Medical Ethics & Law	3
		<u>14</u>

Third Semester

BUS-101	Introduction to Business or	3
BUS-117	Public Relations	3
CIT-100	Computer Fundamentals & Applications	3
MAS-201	Massage Therapy Principles & Procedures 3	5
		<u>11</u>

Minimum Credits to Graduate

38

Medical Assistant (535.1)

SOUTH

Associate of Science

This degree program enables students in the certificate program the opportunity to continue their education and to complete the coursework needed for an associate's degree. This program prepares students for entry-level positions as a medical assistant in a physician's office, clinic or other healthcare setting. Medical assistants work with physicians of all specialties performing clinical and administrative duties. They assist with examinations and treatments, perform routine laboratory procedures, maintain medical records, complete insurance forms, arrange for diagnostic procedures, handle correspondence, transcribe notes and perform bookkeeping. Students graduating from this program will demonstrate critical thinking based on knowledge of academic subject matter required for competence in the profession. The program prepares competent entry-level medical assistants in the cognitive (knowledge), psychomotor (skills) and affective (behavior) learning domains using classroom instruction with laboratory experience. The program includes a 160-hour, non-paid clinical externship.

Enrollment is limited by availability of clinical sites and other factors. Students must make separate application to the program. Students must be eligible for second-level developmental courses and have 40 words per minute typing proficiency.

A felony conviction may affect a student's eligibility to enroll in the clinical externship and a graduate's ability to take the national examination which is required to practice as a Medical Assistant.

A student must maintain a 2.0 college-level cumulative GPA to enter and remain in the program.

The Medical Assistant Program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) upon recommendation of the Medical Assisting Education Review Board (MAERB). CAAHEP is located at 1361 Park Street, Clearwater, FL 33756 (727.210.2350) www.caahep.org.

Graduates are eligible to apply for the national examination for the CMA (Certified Medical Assistant) credential.

(continued)

Medical Assistant (535.1) (continued)

Upon successful completion of the program, the graduate will:

1. Perform clinical procedures related to patient examinations and assist the physician throughout the exam.
2. Prepare blood and body fluid specimens for analysis according to industry standards.
3. Communicate effectively orally and in writing.
4. Perform administrative functions related to medical business practices.
5. Display behavior in accordance with regulations, policies, laws and patient rights.

Degree Requirements

First Semester

	Credits
ALH-140 Medical Terminology	3
CIT-100 Computer Fundamentals & Applications	3
MDA-104 Administrative Medical Office Management	4
MDA-105 Clinical Medical Assisting 1	5
MDA-208 Medical Financial Management	3
	18

Second Semester

BIO-103 Introduction to Human Biology	3
MDA-101 Medical Transcription	3
MDA-103 Medical Assisting Seminar	3
MDA-106 Clinical Medical Assisting 2	5
MDA-107 Laboratory Procedures for the Office	3
	17

Summer

MDA-108 Medical Assistant Externship	3
	3

Third Semester

BUS-103 Principles of Management	3
ENG-101 English Composition 1	3
PSY-101 Introduction to Psychology	3
Mathematics Elective	3-4
	12-13

Fourth Semester

ALH-125 Pharmacology or	3
BIO-107 Pharmacology	3
ENG-102 English Composition 2	3
PSY-108 Human Growth & Development	3
SPH-101 Oral Communications	3
	12

Minimum Credits to Graduate 62-63

Medical Assistant (419.1)

SOUTH
Certificate

This certificate program prepares students for entry-level positions as a medical assistant in a physician's office, clinic or other healthcare setting. Medical assistants work with physicians of all specialties performing clinical and administrative duties. They assist with examinations and treatments, perform routine laboratory procedures, maintain medical records, complete insurance forms, arrange for diagnostic procedures, handle correspondence, transcribe notes and perform bookkeeping. Students graduating from this program will demonstrate critical thinking based on knowledge of academic subject matter required for competence in the profession. The program prepares competent entry-level medical assistants in the cognitive (knowledge), psychomotor (skills) and affective (behavior) learning domains using classroom instruction with laboratory experience. The program includes a 160-hour, non-paid clinical externship.

Enrollment is limited by availability of clinical sites and other factors. Students must make separate application to the program. Students must be eligible for second-level developmental courses and have 40 words per minute typing proficiency.

A felony conviction may affect a student's eligibility to enroll in the clinical externship and the graduate's ability to take the national examination which is required to practice as a Medical Assistant.

A student must maintain a 2.0 college-level cumulative GPA to enter and remain in the program.

The Medical Assistant Program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) upon recommendation of the Medical Assisting Education Review Board (MAERB). CAAHEP is located at 1361 Park Street, Clearwater, FL 33756 (727.210.2350) www.caahep.org.

Graduates are eligible to apply for the national examination for the CMA (Certified Medical Assistant) credential.

(continued)

Medical Assistant (419.1) (continued)

Upon successful completion of the program, the graduate will:

1. Perform clinical procedures related to patient examinations and assist the physician throughout the exam.
2. Prepare blood and body fluid specimens for analysis according to industry standards.
3. Communicate effectively orally and in writing.
4. Perform administrative functions related to medical business practices.
5. Display behavior in accordance with regulations, policies, laws and patient rights.

Certificate Requirements

First Semester

	Credits
ALH-140 Medical Terminology	3
CIT-100 Computer Fundamentals & Applications	3
MDA-104 Administrative Medical Office Management	4
MDA-105 Clinical Medical Assisting 1	5
MDA-208 Medical Financial Management	3
	18

Second Semester

MDA-101 Medical Transcription	3
MDA-103 Medical Assisting Seminar	3
MDA-106 Clinical Medical Assisting 2	5
MDA-107 Laboratory Procedures for the Medical Office	3
	14

Summer

MDA-108 Medical Assistant Externship	3
	3

Minimum Credits to Graduate 35

Medical Insurance Specialist (595.2)

ALLEGHENY

Certificate

This program provides training in the area of medical insurance and health care claims processing, as well as CPT and ICD coding and computerized medical billing. This program also serves the needs of health care personnel interested in upgrading their professional skills.

Upon successful completion of the program, the graduate will:

1. Evaluate a patient's insurance coverage, differentiate between health insurance and worker's compensation situations and apply guidelines for claims submission set forth by the appropriate insurance carrier.
2. Collect and analyze documentation from a patient's chart to select and apply appropriate diagnostic and procedural codes to insurance claims.
3. Differentiate between a primary insurance claim and a supplemental claim and apply information appropriately to each insurance situation.
4. Manage new claims submissions, payments received in office, submission of supplemental claims, corrections and appeals of claims in a timely manner.
5. Apply critical thinking skills and problem solving skills to claims denials for successful appeal submission and reimbursement.
6. Identify medicolegal issues and adhere to guidelines, rules, regulations and laws governing them to maintain compliance in the health care practice.

Upon graduation, a medical insurance specialist may seek employment in physician practices, hospitals, insurance companies and billing services. Graduates may apply their credits toward other select certificate or associate's degree programs.

Students must make separate applications to this program. Applicants must be eligible for *ENG-100 Basic Principles of Composition* and have completed *DVS-101 College Reading 2* or *DVS-103 Advanced College Reading and Study Skills* as required.

(continued)

Medical Insurance Specialist (595.2) (continued)

Certificate Requirements

First Semester

	Credits
ALH-140 Medical Terminology	3
CIT-100 Computer Fundamentals & Applications	3
ENG-100 Basic Principles of Composition	3
MIS-100 Introduction to Medical Insurance	<u>4</u>
	13

Second Semester

CIT-140 Office Productivity Applications	4
MIS-102 Medical Coding for Insurance Billing	4
MIS-103 Medical Insurance Seminar	3
MIS-105 Medical Insurance Applications	<u>2</u>
	13

Minimum Credits to Graduate **26**

Medical Laboratory Technician (525.1)

SOUTH

Associate of Science

This program prepares graduates for entry into clinical laboratory work. Employment opportunities exist in hospitals and private laboratories where work is done under the supervision of a pathologist. For more information on careers in the medical laboratory, visit the website of the American Society of Clinical Pathology www.ascp.org.

Graduates are eligible to take the national examination for certification as Medical Laboratory Technicians MLT (ASCP).

Admission is limited by the availability of clinical sites. Students must make separate applications to this program. Applicants must be eligible for college-level courses and should have a science background. *Introduction to Human Biology (BIO-103)* may be taken as a prerequisite or corequisite of *MLT-111*.

Upon successful completion of the program, the graduate will:

1. Perform aseptic technique.
2. Demonstrate proficiency in all laboratory exercises by performance of test procedures with results and control values within acceptable manufacturer's control limits.
3. Perform tests and identify clinically important microbes.
4. Exhibit medical laboratory knowledge, professionalism and ethical behavior.
5. Perform clinical tests under the supervision of qualified facility personnel.

This program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), 5600 N. River Road, Suite 720, Rosemont, IL 60018-5119; 773.714.8880.

(continued)

Medical Laboratory Technician (525.1) (continued)

Degree Requirements

First Semester		Credits
ALH-140	Medical Terminology	3
CHM-109	Introduction to Chemistry ¹	4
ENG-101	English Composition 1	3
MLT-111	Clinical Laboratory Techniques 1	4
MLT-161	Clinical Instrumentation & Clinical Chemistry 1	<u>4</u>
		18
Second Semester		
ENG-102	English Composition 2	3
MLT-112	Clinical Laboratory Techniques 2	4
MLT-151	Clinical Microbiology 1	4
MLT-162	Clinical Chemistry 2	4
PSY-101	Introduction to Psychology	<u>3</u>
		18
Summer		
	Humanities Elective	<u>3</u>
		3
Third Semester		
MLT-152	Clinical Microbiology 2	5
MLT-220	Clinical Hematology	4
MLT-225	Clinical Immunohematology	4
	Mathematics Elective	<u>3-4</u>
		16-17
Fourth Semester		
MLT-250	Clinical Laboratory Seminar	3
MLT-251	Clinical Lab Externship	<u>12</u>
		15
Minimum Credits to Graduate		70-71

¹Successful completion of both CHM-110 and CHM-111 also meet this requirement.

Medical Laboratory Assistant (571)

SOUTH
Certificate

This certificate program prepares students to function as a medical laboratory assistant (or MLA) in a clinical laboratory setting. (In some settings the MLA is also known as clinical assistant, clinical laboratory assistant or specimen processor.) This program also provides opportunities for graduates to career ladder to a medical laboratory technician associate's degree program and/or a medical technologist four-year degree program. The program objectives comply with the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS) guidelines.

Upon successful completion of the program, the graduate will:

1. Prepare blood and body fluid specimens for analysis according to industry standards and to prepare reagents, standards and controls.
2. Enter data into the laboratory computer - Laboratory Information System (LIS).
3. Perform phlebotomy and display safety practices for infection control according to industry standards.
4. Display behaviors and communication skills appropriate for the healthcare environment.

Admission to the MLA program is limited by the availability of clinical sites. A separate application for program admission is required. The student must maintain a cumulative GPA of 2.0 to remain and progress in the program.

Clinical experience is dependent on the number of students, availability of clinical sites, student successful completion of pre-requisite didactic courses and maintenance of a 2.0 GPA.

Certificate Requirements

First Semester (e.g. Summer)	Credits
ALH-140 Medical Terminology	3
ENG-100 Basic Principles of Composition ¹ or	3
ENG-101 English Composition 1	<u>3</u>
	6
Second Semester (e.g. Fall)	
BIO-103 Introduction to Human Biology	3
MLT-111 Clinical Laboratory Techniques 1	<u>4</u>
	7

(continued)

Medical Laboratory Assistant (571) (continued)

Third Semester (e.g. Spring)

MLA-101	Laboratory Specimen Processing 2	4
PHB-101	Clinical Phlebotomy	4
PHB-111	Clinical Phlebotomy Laboratory	1
		9

Fourth Semester (e.g. Summer)

MLA-102	Medical Laboratory Assistant Externship 2 or	4
MLA-404	Medical Laboratory Assistant Co-Op ^{2,3}	4
		4

Minimum Credits to Graduate: 26

¹If student already completed *ENG-100* or tested into *ENG-101*

²New Courses include *MLA-101*, *MLA-102*, and *MLA-404*

³Co-Op course *MLA-404* would be an option for MLA program students who are current employees or new hires of partnering health care agencies.

Nuclear Medicine Technology (555.2)

ALLEGHENY

Associate of Science

Nuclear medicine is an imaging health science that is used to diagnose and treat disease states. Nuclear medicine technologists administer radioactive isotopes attached to radiopharmaceuticals to patients and then image the characteristics and functions of tissues or organs in which the drugs localize. Nuclear medicine differs from other diagnostic imaging technologies because it determines the presence of disease on the basis of metabolic changes rather than changes in organ structure.

Upon successful completion of the program, the graduate will:

1. Make use of the knowledge associated with the general practice of nuclear medicine technology in hospitals and clinics.
2. Differentiate between imaging isotopes and radiopharmaceuticals in performing various imaging procedures.
3. Recognize the importance of ethics, self-evaluation and cooperation in the health field.
4. Qualify to sit for the national examinations leading to certification to become a nuclear medicine technologist.

Admission is limited by the availability of clinical sites and the requirements of national accrediting agencies. Applicants are required to have a letter grade of C or better in high school algebra and chemistry. Students must also meet pre-program requirements, which include the successful completion of *Intermediate Algebra (MAT-108)* and *Basic Physics (PHY-100)*. Applicants must be eligible for all college-level courses. Students must make separate application to the program.

This program is accredited by the Joint Review Committee on Nuclear Medicine Technology (JRCNMT), 2000 W. Danforth Road, Suite 130 #203, Edmond, OK 73003; 405.285.0546, www.jrcnmt.org.

(continued)

Nuclear Medicine Technology (555.2) (continued)

Degree Requirements

First Semester		Credits
ALH-140	Medical Terminology	3
BIO-161	Anatomy & Physiology 1	4
MAT-111	College Algebra	3
NMT-101	Introduction to Nuclear Medicine	2
PHY-125	Applied Nuclear Physics	4
		16
Second Semester		
BIO-162	Anatomy & Physiology 2	4
CHM-151	General Chemistry	4
ENG-101	English Composition 1	3
NMT-102	Clinical Nuclear Medicine Technology 1	3
PHY-126	Radiation Physics & Protection	4
		18
Summer		
NMT-201	Clinical Nuclear Medicine Technology 2	3
NMT-206	Nuclear Medicine Instrumentation	3
		6
Third Semester		
BIO-212	Radiobiology	2
BIO-241	Pathophysiology	4
ENG-102	English Composition 2	3
NMT-202	Nuclear Medicine Clinical Practice 1	3
		12
Fourth Semester		
NMT-203	Nuclear Medicine Laboratory Procedures	2
NMT-204	Nuclear Medicine Clinical Practice 2	4
NMT-207	Nuclear Medicine Seminar	2
PSY-101	Introduction to Psychology	3
	English Elective or	3
	Humanities Elective	3
		14
Summer		
NMT-205	Nuclear Medicine Externship	5
NMT-270	Fundamentals of Molecular Imaging with PET	3
		8
Minimum Credits to Graduate		74
(with a minimum of 1,400 clinical hours)		

Nuclear Medicine Technology (560.1)

ALLEGHENY

Certificate

Nuclear medicine is an imaging health science that is used to diagnose and treat disease states. Nuclear medicine technologists administer radioactive isotopes attached to radiopharmaceuticals to patients and then image the characteristics and functions of tissues or organs in which the drugs localize. Nuclear medicine differs from other diagnostic imaging technologies because it determines the presence of disease on the basis of metabolic changes rather than changes in organ structure.

Applicants are required to have a C or better grade in college chemistry, anatomy and physiology 1 and 2, physics and algebra and a basic computer course.

The 12-month program is designed for students wanting to expand their background by qualifying for the field of nuclear medicine technology. Enrollment is limited by available clinical sites and other factors. Students must make separate applications to this program.

This program is accredited by the Joint Review Committee on Nuclear Medicine Technology (JRCNMT), 2000 W. Danforth Road, Suite 130 #203, Edmond, OK 73003; 405.285.0546, www.jrcnmt.org.

Upon successful completion of the program, the graduate will:

1. Make use of the knowledge associated with the general practice of nuclear medicine technology in hospitals and clinics.
2. Differentiate between imaging isotopes and radiopharmaceuticals in performing various imaging procedures.
3. Recognize the importance of ethics, self-evaluation and cooperation in the health field.
4. Qualify to sit for the national examinations leading to certification to be a nuclear medicine technologist.

(continued)

Nuclear Medicine Technology (560.1) (continued)

Certificate Requirements

First Semester		Credits
ALH-140	Medical Terminology	3
NMT-150	Applied Nuclear Medicine Technology 1	4
NMT-160	Introduction to Applied Nuclear Medicine Practicum	2
NMT-206	Nuclear Medicine Instrumentation	3
PHY-125	Applied Nuclear Physics	4
		16
Second Semester		
BIO-241	Pathophysiology	4
NMT-151	Applied Nuclear Medicine Technology 2	5
NMT-161	Applied Nuclear Medicine Practicum	3
NMT-203	Nuclear Medicine Laboratory Procedures	2
NMT-207	Nuclear Medicine Seminar	2
		16
Summer		
NMT-205	Nuclear Medicine Externship	5
NMT-270	Fundamentals of Molecular Imaging with PET	3
		8
Minimum Credits to Graduate (with a minimum of 1,160 clinical hours)		40

Nursing (575.1)

ALLEGHENY, BOYCE, NORTH, SOUTH

Associate of Science

The program, offered at five college sites, including one at California University of Pennsylvania, prepares students to apply for the NCLEX-RN examination and to assume an entry-level position as a registered nurse. Program learning experiences prepare graduates for professional nursing practices as defined and delineated by the Pennsylvania State Board of Nursing. The program consists of courses in liberal arts and selected sciences, as well as nursing.

An advanced placement option is available to licensed practical nurses and to those with prior nursing school experience who meet certain criteria. Licensed practical nurses must demonstrate satisfactory completion of a competency exam in evidenced-based drug therapy.

The program approved by the Pennsylvania State Board of Nursing at www.dos.state.pa.us/nurse and accredited by the Accreditation Commission for Education in Nursing (ACEN) 3343 Peachtree Road NE, Suite 850, Atlanta, Georgia 30326, www.acenursing.org. Phone: 404.975.5000, Fax: 404.975.5020..

Applicants must meet specific admission requirements which include: pre-admission exam, a medical history and physical including current immunizations, criminal history records check (CHRC), child abuse clearances, drug screen and fingerprinting. They must also meet pre-program requirements: high school chemistry with a lab or *CHM-109 Introduction to Chemistry* or *CHM-110/111 Introductory Chemistry/Introductory Chemistry Lab* and *BIO-110 Introduction to Biological Science* or *BIO-151 General Biology 1*.

NOTE: A graduate of the Nursing program who has been convicted of a felony, is or was involved in drug abuse or has violated other rules of the licensure body, may not be permitted to take the licensing examination regardless of the student's ability to complete college educational requirements. The student is required to notify the Dean of Nursing of any changes to the criminal record. The Nursing program reserves the right to require appropriate documentation as requested regarding previous felonies or violations.

(continued)

Nursing (575.1) (continued)

Upon successful completion of this program, graduates will:

1. Evaluate clinical judgment to facilitate transformation of knowledge, skills and values in a variety of health care delivery systems.
2. Integrate caring and knowledge of cultural diversity when providing care to patients at various points across the lifespan.
3. Critique the effectiveness of communication with the interdisciplinary health team utilizing principles of management and delegation.
4. Prioritize teaching and learning needs of patients and families in culturally diverse settings across the lifespan.
5. Implement the role of the professional nurse when caring for patients and families in diverse health care delivery systems.

Degree Requirements

First Semester		Credits
BIO-161	Anatomy & Physiology 1 ¹	4
MAT-106	Mathematics for Health Sciences or	4
MAT-108	Intermediate Algebra	4
NUR-110	Foundation & Health Promotion Concepts for Nursing Practice	6
NUR-120	Health Assessment Concepts for Nursing Practice	2
PSY-101	Introduction to Psychology	3
		19
Second Semester		
BIO-162	Anatomy & Physiology 2	4
ENG-101	English Composition 1	3
NUR-130	Basic Health Concepts for Nursing Practice	6
NUR-140	Evidence Based Nursing Drug Therapy	3
PSY-108	Human Growth & Development	3
		19
Summer		
BIO-175	Microbiology	4
		4
Third Semester		
ENG-102	English Composition 2	3
NUR-210	Professional Nursing Concepts	2
NUR-220	Adult Health Concepts for Nursing Practice	4
NUR-230	Family Health Concepts for Nursing Practice	4
		13

Fourth Semester

NUR-240	Complex Health Concepts for Nursing Practice	7
NUR-250	Leadership & Management Concepts ²	3
	Humanities Elective	3
		13

Minimum Credits to Graduate 68

¹Prerequisite to *BIO-161 Anatomy & Physiology 1*: *BIO-110 Introduction to Biological Science* **or** *BIO-151 General Biology 1* **or** Biology Waiver Exam.

²Effective Fall 2011 semester, a NCLEX Review Course fee is assessed to students enrolled in *NUR-250*. The cost is \$300. NCLEX is an intense 3-day review course to help improve student success.

A Fast Track evening/weekend program is available at CCAC Boyce Campus. Please contact the Nursing Admissions Coordinator to inquire.

Occupational Therapy Assistant (587.2)

BOYCE

Associate of Science

This program prepares graduates to assist in providing occupational therapy services under the supervision of a registered occupational therapist in a variety of health care and school facilities. A certified occupational therapy assistant (COTA) is trained to assist in the prevention of further disability and the restoration of function in persons with developmental, physical or emotional disabilities. Through therapeutic activities, occupational therapy assists patients in becoming as independent as possible within their own environment.

Enrollment is limited by availability of clinical sites and other factors. Students must make separate application to the program. Applicants should have a successful record of achievement in high school science courses or develop these skills prior to program admission. Students must also meet pre-program requirements, which include the successful completion of *BIO-151 General Biology 1* or *BIO-110 Introduction to Biological Science*.

The Occupational Therapy Assistant program is accredited by the Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association. The address is ACOTE, c/o Accreditation Department, American Occupational Therapy Association (AOTA), 4720 Montgomery Lane, Suite 200, Bethesda, MD 20814-3449; 301.652.2682, www.acoteonline.org.

Graduates of this will be eligible to take the National Certification Examination for the Occupational Therapy Assistant administered by the National Board for Certification in Occupational Therapy (NBCOT).

A felony conviction may affect a graduate's ability to sit for the NBCOT certification examination or attain state licensure. After successful completion of this exam, the individual will be a Certified Occupational Therapy Assistant (COTA). Most states require licensure in order to practice; however, state licenses are usually based on the results of the NBCOT Certification Examination.

Upon successful completion of the program, the graduate will:

1. Exhibit entry-level competencies as an occupational therapy assistant.
2. Display professional behaviors that are congruent with the core values, standards and ethics of the occupational therapy profession.
3. Communicate effectively with clients, families and other team members.
4. Utilize reflective judgment and problem solving to effectively integrate theoretical concepts of the use of occupation in promotion health and wellness.
5. Employ respect for diversity factors, lifestyle values and choices of others.

Degree Requirements

First Semester		Credits
BIO-161	Anatomy & Physiology 1	4
ENG-101	English Composition 1	3
OTA-101	Introduction to Occupational Therapy	5
PSY-101	Introduction to Psychology	3
	Computer Information Technology Elective ¹	<u>1</u>
		16

Second Semester

BIO-162	Anatomy & Physiology 2	4
ENG-102	English Composition 2	3
OTA-102	Occupational Therapy in Pediatrics	5
OTA-112	Occupational Therapy Fieldwork 1/ Pediatrics	1
PSY-108	Human Growth & Development	<u>3</u>
		16

Third Semester

OTA-201	Occupational Therapy in Physical Disabilities	5
OTA-211	Occupational Therapy Fieldwork 1/ Physical Disabilities	2
PSY-208	Abnormal Psychology	3
SPH-101	Oral Communication	3
	Health & Physical Education Elective	<u>1</u>
		14

(continued)

**Occupational Therapy Assistant
(587.2) (continued)**

Fourth Semester

OTA-202	Occupational Therapy in Mental Health	5
OTA-203	Occupational Therapy in Aging Population	3
OTA-204	Occupational Therapy Professional Issues	2
OTA-212	Occupational Therapy Fieldwork 1/ Mental Health	1
OTA-213	Occupational Therapy Fieldwork 1/ Aging Populations	1
	Mathematics Elective	<u>3</u>
		15

Summer

OTA-221	OT Fieldwork 2A ²	5
OTA-222	OT Fieldwork 2B ²	<u>5</u>
		10

Minimum Credits to Graduate 71

¹Recommended CIT elective: *CIT-100 Computer Fundamentals & Applications* or *CIT-615 Computer Application in Health Care*.

²*Fieldwork 2* should be completed within 18 months following completion of all academic coursework.

Paramedic (533.1)

BOYCE

Associate of Science

Paramedics care for patients at the scene of an accident or sudden illness and while transporting patients by ambulance to the hospital. They are vital members of both the health care delivery system and public safety first responder network. They receive extensive education in the use of advanced procedures, medications and specialized equipment to manage medical emergencies and traumatic injuries. Through careful patient assessment and team-oriented medical care, paramedics help prevent and reduce death and disability from illness and injury.

Paramedics generally work for ambulance services or fire departments but some paramedics find employment in hospital emergency departments, aeromedical services, medical clinics, sports medicine, tactical medicine, industrial medicine and similar occupations.

The Associate of Science degree program prepares individuals for employment as an advanced life support provider and for advancement into supervisory roles or further education.

Graduates of this program are eligible to take the credential examinations of the National Registry of EMTs to become a Nationally Registered Paramedic. The credential is recognized by Pennsylvania Department of Health for Pennsylvania certification as a paramedic.

Students must meet pre-program requirements, which include current certification as an Emergency Medical Technician (EMT) in Pennsylvania, a high school diploma or GED and be at least 18 years of age. Admission is limited by the availability of clinical sites and other factors. Students must make separate application to this program. Admission to the college and completion of any developmental level courses is required.

A criminal history or felony conviction may affect a graduate's eligibility to take the registry exams or obtain state certification. A majority of states require a license or certification to practice as a paramedic.

Upon successful completion of the program, the graduate will:

1. Demonstrate entry-level competencies in the cognitive, psychomotor and affective domains of the paramedic.
2. Display professional behaviors that are congruent with the core values, standards and ethics of the paramedic profession.
3. Communicate effectively with patients, family members and other health care providers.
4. Design, implement and evaluate treatment interventions according to paramedic treatment protocols.
5. Apply critical thinking and problem solving skills to emergency situations.

This program is seeking accreditation and holds a letter of review by the Committee on Accreditation of Educational Programs for Emergency Medical Services Professions (CoAEMSP), 8301 Lakeview Parkway, Suite 111-312, Rowlett, TX 75088, 214.703.8445, www.coaemsp.org.

This program is accredited as an Emergency Medical Services (EMS) Education Institute by the Pennsylvania Department of Health, Bureau of EMS.

Degree Requirements

First Semester		Credits
BIO-115	Human Biology in Health & Disease or	5
BIO-162	Anatomy & Physiology 2	4
PAM-101	Foundations of Paramedic Practice	4
PAM-102	Airway Management & Pharmacology	5
PAM-112	Paramedic Clinical 1	<u>1</u>
		14-15
Second Semester		
PAM-103	Cardiology & Pulmonology	5
PAM-104	Shock & Trauma	4
PAM-105	Special Patient Populations	3
PAM-116	Paramedic Clinical 2	<u>2</u>
		14
Summer		
ENG-101	English Composition 1	3
PSY-101	Introduction to Psychology	<u>3</u>
		6

(continued)

Paramedic (533.1) (continued)

Third Semester

PAM-201	Medical Emergencies	5
PAM-202	Integrated Paramedic Concepts	2
PAM-213	Paramedic Clinical 3	1
PAM-214	Paramedic Field Externship	4
		12

Fourth Semester

PSY-108	Human Growth & Development	3
ENG-102	English Composition 2	3
SPH-101	Oral communication	3
	Computer Information Technology	
	Elective ¹	1-3
	Mathematics Elective ²	3-4
		13-16

Minimum Credits to Graduate 60-63

¹Recommended CIT elective: *CIT-100 Computer Fundamentals and Applications* or *CIT-615 Computer Applications in Health Care*.

²*MAT-100* or higher, *MAT-195 Business Mathematics* is suggested for non-transfer students.

Paramedic (534.1)

BOYCE
Certificate

Paramedics care for patients at the scene of an accident or sudden illness and while transporting patients by ambulance to the hospital. They are vital members of both the health care delivery system and public safety first responder network. They receive extensive education in the use of advanced procedures, medications and specialized equipment to manage medical emergencies and traumatic injuries. Through careful patient assessment and team-oriented medical care, paramedics help prevent and reduce death and disability from illness and injury.

Paramedics generally work for ambulance services or fire departments but some paramedics find employment in hospital emergency departments, aeromedical services, medical clinics, sports medicine, tactical medicine, industrial medicine and similar occupations.

The certificate program prepares individuals for entry-level employment as a paramedic in an emergency medical service or other medical setting.

Graduates of this program are eligible to take the credential examination of the National Registry of EMTs to become a Nationally Registered Paramedic. The credential is recognized by Pennsylvania Department of Health for Pennsylvania certification as a paramedic.

Students must meet pre-program requirements, which include current certification as an Emergency Medical Technician (EMT) in Pennsylvania, a high school diploma or GED and be at least 18 years of age. Admission is limited by the availability of clinical sites and other factors. Students must make separate application to this program. Admission to the college and completion of any developmental level courses is required. Progression to the paramedic associate degree program is possible for all students having completed the paramedic certificate program.

A criminal history or felony conviction may affect a graduate's eligibility to take the registry exams or obtain state certification. A majority of states require a license or certification to practice as a paramedic.

(continued)

Paramedic (534.1) (continued)

Upon successful completion of the program, the graduate will:

1. Demonstrate entry-level competencies in the cognitive, psychomotor and affective domains of the paramedic.
2. Display professional behaviors that are congruent with the core values, standards and ethics of the paramedic profession.
3. Communicate effectively with patients, family members and other health care providers.
4. Design, implement and evaluate treatment interventions according to paramedic treatment protocols.
5. Apply critical thinking and problem solving skills to emergency situations.

This program is seeking accreditation and holds a letter of review by the Committee on Accreditation of Educational Programs for Emergency Medical Services Professions (CoAEMSP), 8301 Lakeview Parkway, Suite 111-312, Rowlett, TX 75088, 214.703.8445, www.coaemsp.org.

This program is accredited as an Emergency Medical Services (EMS) Education Institute by the Pennsylvania Department of Health, Bureau of EMS.

Certificate Requirements

First Semester

		Credits
BIO-115	Human Biology in Health & Disease	or 5
BIO-162	Anatomy & Physiology 2	4
PAM-101	Foundations of Paramedic Practice	4
PAM-102	Airway Management & Pharmacology	5
PAM-112	Paramedic Clinical 1	<u>1</u>
		14-15

Second Semester

PAM-103	Cardiology & Pulmonology	5
PAM-104	Shock & Trauma	4
PAM-105	Special Patient Populations	3
PAM-116	Paramedic Clinical 2	<u>2</u>
		14

Third Semester

PAM-201	Medical Emergencies	5
PAM-202	Integrated Paramedic Concepts	2
PAM-213	Paramedic Clinical 3	1
PAM-214	Paramedic Field Externship	<u>4</u>
		12

Minimum Credits to Graduate 40–41

Pharmacy Technician (518.2)

SOUTH

Associate of Science

The program prepares graduates to assist registered pharmacists. Graduates work in retail or hospital pharmacies, where they compound and distribute medications, develop intravenous admixtures and provide other pharmaceutical supplies.

Upon successful completion of the program, the graduate will:

1. Identify drugs by generic and trade name.
2. Calculate dosage and solution strength using different systems of measurement.
3. Perform procedures and techniques related to aseptic compounding and parenteral admixture operations.
4. Perform the pharmacy technician functions associated with an institutional and clinical drug distribution system.
5. Define ethics and explain laws applicable to health care and the practice of pharmacy.

Admission to the program is limited by the availability of clinical sites. A separate application for program admission is required.

A student must maintain a 2.0 college-level cumulative GPA to remain in the program.

This program is accredited by the American Society of Health-System Pharmacists (ASHP) 7272 Wisconsin Avenue, Bethesda, MD 20814; 301.664.8712, www.ashp.org.

(continued)

Pharmacy Technician (518.2) (continued)

Degree Requirements

First Semester		Credits
ALH-140	Medical Terminology	3
BIO-103	Introduction to Human Biology	3
CIT-100	Computer Fundamentals & Applications	3
PHT-100	Introduction to Pharmacy Practice	4
PHT-101	Pharmacology 1 for Pharmacy Technicians	<u>3</u>
		16
Second Semester		
PHT-102	Pharmacology 2 for Pharmacy Technicians	3
PHT-103	Pharmacy Practice 1	3
PHT-104	Pharmacy Product Preparation 1	3
PHT-105	Pharmacy Product Preparation 2	3
PHT-202	Pharmacy Law	<u>2</u>
		14
Third Semester		
PHT-106	Pharmacy Product Preparation 3	2
PHT-201	Pharmacy Tech Externship	6
PHT-203	Pharmacy Seminar	<u>2</u>
		10
Fourth Semester		
CIT-140	Office Productivity Applications	4
ENG-101	English Composition 1	3
MAT-193	Pharmaceutical Mathematics 3	3
	Health & Physical Education Elective	<u>1-2</u>
		11-12
Fifth Semester		
BUS-210	Principles of Retailing	3
ENG-102	English Composition	3
	Humanities Elective	3
	Social Science Elective	<u>3</u>
		12
Minimum Credits to Graduate		63-64

Pharmacy Technician (418.2)

SOUTH
Certificate

This certificate program prepares the graduate to enter the workforce as a pharmacy technician. Employment can be in acute care, ambulatory care or long-term care settings, research facilities, mail-order pharmacies and home infusion companies. Pharmacy technicians assist registered pharmacists in the compounding and distribution of medications, prepare intravenous admixtures and provide other pharmaceutical care services.

Upon successful completion of the program, the graduate will:

1. Identify drugs by generic and trade name.
2. Calculate dosage and solution strength using different systems of measurement.
3. Perform procedures and techniques related to aseptic compounding and parenteral admixture operations.
4. Perform the pharmacy technician functions associated with an institutional and clinical drug distribution system.
5. Define ethics and explain laws applicable to health care and the practice of pharmacy.

Admission to the program is limited by the availability of clinical sites. A separate application for program admission is required.

A student must maintain a 2.0 college-level cumulative GPA to remain in the program.

This program is accredited by the American Society of Health-System Pharmacists (ASHP), 7272 Wisconsin Avenue, Bethesda, MD 20814; 301.664.8712, www.ashp.org.

(continued)

Pharmacy Technician (418.2) (continued)

Certificate Requirements

First Semester		Credits
ALH-140	Medical Terminology	3
BIO-103	Introduction to Human Biology	3
CIT-100	Computer Fundamentals & Applications	3
PHT-100	Introduction to Pharmacy Practice	4
PHT-101	Pharmacology 1 for Pharmacy Technicians	3
		<u>16</u>
Second Semester		
PHT-102	Pharmacology 2 for Pharmacy Technicians	3
PHT-103	Pharmacy Practice 1	3
PHT-104	Pharmacy Product Preparation 1	3
PHT-105	Pharmacy Product Preparation 2	3
PHT-202	Pharmacy Law	2
		<u>14</u>
Third Semester		
PHT-106	Pharmacy Product Preparation 3	2
PHT-201	Pharmacy Technician Externship	6
PHT-203	Pharmacy Seminar	2
		<u>10</u>
Minimum Credits to Graduate		40

Phlebotomist (513.1)

ALLEGHENY, BOYCE, SOUTH

Certificate

This program prepares students to function as an entry-level phlebotomist in hospitals, blood drawing stations, physicians' offices, research or other health care settings. Phlebotomists collect blood specimens for tests used in the detection, diagnosis and treatment of disease.

Graduates are eligible to apply for the national examination given by the American Society for Clinical Pathology (ASCP).

Enrollment in the program is limited by availability of clinical sites and other factors. Students must make separate application to this program.

Applicants must be eligible for *ENG-100 Basic Principles of Composition* and *DVS-103 Advanced College Reading & Study Skills* based on college placement testing. Pennsylvania Child Abuse History Clearance and Pennsylvania State Police Criminal Record Check are required prior to registering for *PHB-201 Clinical Phlebotomy Practicum*. Students must maintain a 2.0 GPA in all program courses.

The Phlebotomist program at CCAC South Campus is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), 1361 Park Street, Clearwater, FL 33756; 727.210.2350, www.caahep.org.

Upon successful completion of the program, graduates will:

1. Apply principles of specimen collection in the overall patient care system.
2. Adhere to infection control and safety policies and procedures.
3. Monitor quality control.
4. Demonstrate professional conduct, communication skills and behavior in accordance with regulations, policies, laws and patient rights.

Certificate Requirements

One Semester	Credits	
ALH-106	Basic Life Support	1
PHB-101	Clinical Phlebotomy	4
PHB-111	Clinical Phlebotomy Lab	1
PBH-201	Clinical Phlebotomy Practicum	3
PHB-211	Clinical Phlebotomy Seminar	3

Minimum Credits to Graduate: 12

Physical Therapist Assistant (628.1)

BOYCE

Associate of Science

The Physical Therapist Assistant program is designed to prepare graduates to perform physical therapy procedures and related tasks under the supervision of a licensed physical therapist. Graduates complete a minimum of 784 hours of supervised clinical experience that is coordinated with 450 hours of classroom learning. The physical therapist assistant (PTA) performs a variety of treatment procedures in settings such as hospitals, nursing homes, rehabilitation facilities, schools, patient homes, sports medicine clinics and private practices. Through the utilization of therapeutic modalities and exercise, and other techniques, physical therapy aids patients in the relief of pain and discomfort as well as assisting the disabled in restoring optimal functioning.

Enrollment is limited by availability of clinical sites and other factors. Students must make separate application to the program. Applicants should have a successful record of achievement in high school courses or develop these skills prior to program admission. Students must also meet pre-program requirements, which include the successful completion of *BIO-151 General Biology 1* or *BIO-110 Introduction to Biological Science*.

The Physical Therapist Assistant Program is accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE) of the American Physical Therapy Association (APTA), 1111 Fairfax Street, Alexandria, VA 22314; 703.684.2782, www.apta.org.

Graduates of this accredited program will be eligible to take the National Physical Therapy Examination for the Physical Therapist Assistant administered by the Federation of State Boards of Physical Therapy (FSBPT).

A felony conviction may affect a graduate’s ability to take the registration examination or obtain state licensure. A majority of the states require a license to practice as a physical therapist assistant.

Upon successful completion of the program, the graduate will:

1. Meet the requirements for an Associate of Science degree exhibiting entry level competencies as a physical therapist assistant, be prepared to pass the National Physical Therapy Examination for the Physical Therapist Assistant and gain employment.

2. Display professional behaviors that are congruent with the core values, standards and ethics of the physical therapy profession.
3. Demonstrate respect for cultural diversity, lifestyle values and choices of others.
4. Communicate effectively with clients, family members and other health care providers.
5. Utilize reflective judgment and problem solving skills and demonstrate participation in professional development opportunities to promote health and wellness.

Degree Requirements

First Semester		Credits
BIO-160	Introduction to Human Pathology	3
BIO-161	Anatomy & Physiology 1	4
ENG-101	English Composition 1	3
PSY-101	Introduction to Psychology	3
PTA-101	Introduction to Physical Therapy	<u>4</u>
		17
Second Semester		
BIO-162	Anatomy & Physiology 2	4
ENG-102	English Composition 2	3
PTA-102	Physical Therapy Principles & Procedures 1	4
PTA-103	Physical Therapy Principles & Procedures 2	4
PTA-112	Physical Therapy Clinical Observation	1
	Health & Physical Education Elective	<u>1-2</u>
		17-18
Summer		
	Mathematics Elective (MAT level 100 or higher but not MAT-195)	<u>3-4</u>
		3-4
Third Semester		
PSY-108	Human Growth & Development	3
PTA-201	Physical Therapy Principles & Procedures 3	5
PTA-202	Physical Therapy Professional Issues Seminar	2
PTA-203	Specialty Topics in Physical Therapy (course name changed effective Fall 2013)	3
PTA-211	Physical Therapy Clinical Education 1	2
SPH-101	Oral Communication	<u>3</u>
		18
Fourth Semester		
PTA-212	Physical Therapy Clinical Education 2	5
PTA-213	Physical Therapy Clinical Education 3	5
PTA-215	Physical Therapy Profession Exploration	<u>2</u>
		12
Minimum Credits to Graduate		67-69

Radiation Therapy Technology (565.1)

ALLEGHENY

Associate of Science

Radiation therapy involves the use of high energy radiation in the treatment of patients with malignant tumors. Registered radiation therapists are employed in major cancer treatment centers and in hospitals with radiation therapy departments.

Upon successful completion of the program, the graduate will:

1. Function as competent, technically proficient entry-level practitioners on a cancer treatment team in a clinical setting.
2. Use critical thinking, problem-solving, computation and written/oral communication skills.
3. Use electronic medical charting for simulation, treatment and billing purposes.
4. Fulfill the radiation therapy community needs for qualified, employable therapists.
5. Demonstrate professional characteristics necessary to promote the importance of lifelong learning and medical ethics in patient care.

Applicants must be eligible for all program college-level courses. In addition, applicants must complete *MAT-108 Intermediate Algebra*, *BIO-110 Introduction to Biological Science* or *BIO-151 General Biology* and *PHY-100 Basic Physics* or advanced placement high school physics with a C or above.

Graduates of this program are eligible to apply to take the national credentialing exam in radiation therapy technology given by the American Registry of Radiologic Technologists.

Enrollment is limited by the availability of clinical sites and other factors. Students must make separate applications to this program.

This program is accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT), 20 North Wacker Drive, Suite 2850, Chicago, IL 60608-3182; 312.704.5300.

Degree Requirements

First Semester		Credits
ALH-140	Medical Terminology	3
BIO-161	Anatomy & Physiology 1	4
MAT-142	Pre-calculus	4
PHY-125	Applied Nuclear Physics	4
RTT-101	Radiation Therapy Orientation	2
RTT-111	Radiation Therapy Skills Lab	1
		18
Second Semester		
BIO-162	Anatomy & Physiology 2	4
ENG-101	English Composition 1	3
PHY-126	Radiation Physics & Protection	4
PSY-101	Introduction to Psychology	3
RTT-102	Fundamentals of Radiation Therapy	2
RTT-112	Fundamentals of Radiation Therapy Clinical	1
		17
Summer		
RTT-120	Applied Radiation Therapy 1	4
		4
Third Semester		
BIO-212	Radiobiology	2
BIO-241	Pathophysiology	4
ENG-102	English Composition 2	3
RTT-201	Theoretical Radiation Therapy 1	3
RTT-202	Radiation Therapy Clinical Practicum 1	4
		16
Fourth Semester		
RTT-211	Theoretical Radiation Therapy 2	3
RTT-212	Radiation Therapy Clinical Practicum 2	4
RTT-215	Medical Imaging & Simulation	2
RTT-218	Radiation Oncology	3
RTT-219	Radiation Seminar	1
	Humanities or English Elective	3
		16
Summer		
RTT-220	Radiation Therapy Externship	5
		5
Minimum Credits to Graduate		76

Radiation Therapy Technology (566.1)

ALLEGHENY
Certificate

Radiation therapy involves the use of high energy radiation in the treatment of patients with malignant tumors. Registered radiation therapists are employed in major cancer treatment centers and in hospitals with radiation therapy departments.

Applicants are required to have graduated from a JRCERT accredited school of diagnostic radiography and be eligible for college-level courses. Applicants must be ARRT board certified in diagnostic radiography RT(R) with a minimum passing score of 80% or be board certified and employed in diagnostic radiography for at least one year. Graduates of the CCAC certificate program are eligible to apply to take the ARRT Radiation Therapy certification exam.

Upon successful completion of the program, the graduate will:

1. Function as competent, technically proficient entry-level practitioners on a cancer treatment team in a clinical setting.
2. Use critical thinking, problem-solving, computation and written/oral communication skills.
3. Use electronic medical charting for simulation, treatment and billing purposes.
4. Fulfill the radiation therapy community needs for qualified, employable therapists.
5. Demonstrate professional characteristics necessary to promote the importance of lifelong learning and medical ethics in patient care.

Enrollment is limited by available clinical sites and other factors. Students must make separate applications to this program.

This program is accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT), 20 North Wacker Drive, Suite 2850, Chicago, IL 60608-3182; 312.704.5300.

Certificate Requirements

First Semester		Credits
BIO-212	Radiobiology	2
BIO-241	Pathophysiology	4
PHY-125	Applied Nuclear Physics	4
RTT-203	Radiation Therapy Technology 1	3
RTT-204	Clinical Radiation Therapy 1	4
		17
Second Semester		
PHY-126	Radiation Physics & Protection	4
RTT-213	Radiation Therapy Technology 2	3
RTT-214	Clinical Radiation Therapy 2	4
RTT-218	Radiation Oncology	3
		14
Summer		
RTT-221	Radiation Therapy Externship	5
		5
Minimum Credits to Graduate		36

Radiologic Technologist (558)

BOYCE

Associate of Science

This program provides training in the field of radiologic technology (X-ray). Radiologic technologists work in hospital, clinic or health center radiology departments. Students learn to produce images of body parts as an aid in the diagnosis of disease and injury.

Upon successful completion of the program, the graduate will:

1. Function as a competent, technically proficient entry-level technologist who can apply and perform safe patient care radiation protection practices according to industry standards.
2. Utilize safe methods to provide patients with minimized radiation dose levels during imaging procedures.
3. Operate diagnostic imaging X-ray units to meet standardized protocols under the direction of radiologists.
4. Manipulate equipment functions to produce quality radiographic images.
5. Exhibit professional characteristics required by the radiologic technology profession.

Enrollment is limited by the availability of clinical sites and other factors. Students must make separate application to the program and applicants should have a successful record of achievement in high school algebra and science courses, including physics, or develop these skills prior to program admission. Students must also meet pre-program requirements, which include the successful completion of *BIO-151 General Biology* or *BIO-110 Introduction to Biological Science*.

Graduates of this program are eligible to take the Radiologic Technologist Radiography (RTR)(R) certification examination provided by the American Registry of Radiologic Technologist (ARRT) required for employment in this field.

This program is accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT), 20 North Wacker Drive, Suite 2850, Chicago, IL 60606-3182; 312.704.5300, www.jrcert.org.

Degree Requirements

First Semester		Credits
BIO-161	Anatomy & Physiology 1	4
ENG-101	English Composition 1	3
MAT-108	Intermediate Algebra	4
RAD-107	Radiologic Technology 1	4
	Dance Elective or	2
	Health & Physical Education	
	Elective	<u>1-2</u>
		16-17
Second Semester		
BIO-162	Anatomy & Physiology 2	4
ENG-102	English Composition 2	3
RAD-108	Radiologic Technology Clinical 1	4
RAD-157	Radiologic Technology 2	4
	Humanities Elective	<u>3</u>
		18
Summer		
PHY-100	Basic Physics	4
RAD-158	Radiologic Technology Clinical 2	<u>4</u>
		8
Third Semester		
PHY-128	Physics Health Science/Radiography	3
RAD-207	Radiologic Technology 3	4
RAD-208	Radiologic Technology Clinical 3	4
	Social Sciences Elective	<u>3</u>
		14
Fourth Semester		
RAD-217	Radiologic Technology 4	4
RAD-218	Radiologic Technology Clinical 4	<u>8</u>
		12
Summer		
RAD-258	Radiologic Technology Clinical 5	<u>4</u>
		4
Minimum Credits to Graduate		72-73

Respiratory Therapy (540.1)

ALLEGHENY

Associate of Science

This program provides training in the field of respiratory therapy. Training in the use of equipment is included in a patient-oriented hospital experience.

Upon successful completion of the program, the graduate will:

1. Demonstrate competence in the cognitive (knowledge) learning domain of respiratory care practice as performed by a registered respiratory therapist.
2. Demonstrate competence in the psychomotor (skill) learning domain of respiratory care practice as performed by a registered respiratory therapist.
3. Demonstrate competence in the affective (behavior) learning domain of respiratory care practice as performed by a registered respiratory therapist.
4. Design, implement and evaluate the respiratory therapy care plans used by a registered respiratory therapist.
5. Recognize, demonstrate and apply written and oral communication skills required by a registered respiratory therapist.

Admission is limited by the availability of clinical sites and other factors. Students must make separate applications to this program.

Applicants should have a C or better grade in high school chemistry, algebra and natural sciences or its equivalent. They must also meet pre-program requirements, which include the successful completion of *MAT-108*, *CHM-109* (or *CHM-110* and *CHM-111*) and *BIO-115*. Applicants must have successfully completed all developmental courses as required.

Graduates of this program are eligible to take the certification examination leading to the registered respiratory therapist (RRT) sponsored by the National Board for Respiratory Care (NBRC). Job opportunities are in hospitals, clinics, home care and sales.

This program is accredited by the Committee on Accreditation for Respiratory Care (CoARC), 1248 Harwood Road, Bedford, TX 76021-4244; 817.283.2835, www.coarc.com.

(continued)

Degree Requirements

First Semester

		Credits
ENG-101	English Composition 1	3
PHY-123	Physics for the Health Sciences/ Respiratory Care	4
RES-111	Respiratory Care Equipment 1	4
RES-113	Respiratory Therapy 1	4
		15

Second Semester

BIO-209	Cardiopulmonary Anatomy & Physiology	4
ENG-102	English Composition 2	3
RES-112	Respiratory Equipment 2	4
RES-114	Respiratory Therapy 2	4
		15

Summer

RES-115	Fundamentals of Clinical Practice	1
RES-116	Pulmonary Diagnostic Procedures	2
RES-117	Pulmonary & Related Pathology	4
RES-118	Respiratory Pharmacology	1
		8

Third Semester

PSY-101	Introduction to Psychology	3
RES-202	Medical Aspects of Respiratory Therapy	3
RES-211	Respiratory Therapist Clinical 1	2
		15

Fourth Semester

RES-212	Respiratory Therapist Clinical 2 Humanities Elective	12
		3
		15

Minimum Credits to Graduate 68

Surgical Technologist (530.2)

BOYCE

Associate of Science

This program prepares graduates to work under supervision in the operating room. The surgical technologist practices principles of asepsis while assisting the surgeon with surgical procedures. Responsibilities include preparation of equipment and supplies before, during and after surgery.

Upon successful completion of the program, the graduate will:

1. Utilize technological skills in basic surgical procedures through the appropriate handling of surgical instruments, supplies and equipment.
2. Apply safe practices for patients, self and other members of the surgical team.
3. Identify the principles of aseptic technique and apply them in the surgical setting.
4. Explain anatomy and physiology as they relate to surgical procedures.
5. Apply knowledge of interpersonal skills through communication and professional and ethical behavior when interacting with others in the clinical setting.

Graduates have the skills for entry-level positions in an operating room assisting the surgeon. Graduates may take the National Surgical Technologist Certifying Examination administered by the National Board of Surgical Technology & Surgical Assisting (NBSTSA).

Enrollment is limited by the availability of clinical sites and other factors. Students must make separate applications to this program.

The Surgical Technology Program is accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org) upon the recommendation of the Accreditation Review Council on Education in Surgical Technology and Surgical Assisting (ARC/STSA).

Commission on Accreditation of Allied Health Education Programs

1361 Park Street

Clearwater, Florida 33765

727.210.2350

www.caahep.org

Degree Requirements

First Semester		Credits
BIO-123	Medical Biology & Terminology	3
BIO-151	General Biology 1	4
ENG-101	English Composition 1	3
PSY-101	Introduction to Psychology	3
SUR-110	Surgical & Central Service Technology 1	<u>5</u>
		18
Second Semester		
BIO-175	Microbiology ¹	4
ENG-102	English Composition 2 ¹	3
MAT-106	Mathematics for Health Science ¹	4
SPH-101	Oral Communication ¹	3
SUR-120	Surgical Technology 2	<u>6</u>
		20
Third Semester		
BIO-161	Anatomy & Physiology 1	4
SUR-230	Surgical Technology 3	7
SUR-231	Surgical Technology Clinical 1	<u>6</u>
		17
Fourth Semester		
BIO-162	Anatomy & Physiology 2	4
SUR-240	Surgical Technology 4	6
SUR-241	Surgical Technology Clinical 2	<u>6</u>
		16
Minimum Credits to Graduate		71

¹Indicates courses that may be taken in the summer to decrease course load during this semester.

Surgical Technology (583.2)

BOYCE
Certificate

This program prepares graduates to work under supervision in the operating room. The surgical technologist practices principles of asepsis while assisting the surgeon with surgical procedures. Responsibilities include preparation of equipment and supplies before, during and after surgery.

Upon successful completion of the program, the graduate will:

1. Utilize technological skills in basic surgical procedures through the appropriate handling of surgical instruments, supplies and equipment.
2. Apply safe practices for patients, self and other members of the surgical team.
3. Identify the principles of aseptic technique and apply them in the surgical setting.
4. Explain anatomy and physiology as they relate to surgical procedures.
5. Apply knowledge of interpersonal skills through communication and professional and ethical behavior when interacting with others in the clinical setting.

Graduates have the skills for entry-level positions in an operating room assisting the surgeon. Graduates may take the National Surgical Technologist Certifying Examination administered by the National Board of Surgical Technology & Surgical Assisting (NBSTSA).

Enrollment is limited by the availability of clinical sites and other factors. Students must make separate application to this program.

The Surgical Technology Program is accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org) upon the recommendation of the Accreditation Review Council on Education in Surgical Technology and Surgical Assisting (ARC/STSA).

Commission on Accreditation of Allied Health Education Programs
1361 Park Street
Clearwater, Florida 33765
727.210.2350
www.caahep.org

Certificate Requirements

First Semester		Credits
SUR-110	Surgical & Central Service Technology 1	5
	Restricted Elective 1	3-4
	Restricted Elective 2	4
		12-13
Second Semester		
SUR-120	Surgical Technology 2	6
	Restricted Elective	4
		10
Third Semester		
SUR-230	Surgical Technology 3	7
SUR-231	Surgical Technology Clinical 1	6
		13
Fourth Semester		
SUR-240	Surgical Technology 4	6
SUR-241	Surgical Technology Clinical 2	6
		12
Minimum Credits to Graduate:		47-48

Students may choose three of the five restricted electives:

ALH-140	Medical Terminology or	3
BIO-123	Medical Biology & Terminology	3
BIO-151	General Biology 1	4
BIO-161	Anatomy & Physiology 1	4
BIO-162	Anatomy & Physiology 2	4
CST-103	Inventory Management for Central Service	3

STUDENT NOTES

Science, Technology, Engineering & Mathematics Programs

Certificates and degrees in science, technology, engineering and mathematics prepare students for entry-level employment in bio-remediation, biotechnology, computer and information science, electronics, engineering, computer-aided drafting, laboratories, manufacturing and software design.

CCAC encourages students to apply for both certificates and diplomas (where possible) as they work toward an associate's degree requirements. Students should investigate baccalaureate programs as they advance in their chosen careers.

Information on specific courses in a selected academic program can be found at ccac.edu CCAC Central e-Services. That information includes the location, days, times, faculty member and required books and supplies. Note that some courses are only offered during alternate terms. The syllabus (a detailed course description) is available for many courses at <http://webapps.ccac.edu/MasterSyllabi/>



PA TRAC creates a seamless transfer and articulation process for students who earn degrees in specific programs and who transfer to PASSHE—Pennsylvania System of Higher Education institutions. CCAC's programs in Biology, Chemistry and Physics are part of this agreement.



For more information, see www.pacollegetransfer.com/PATRAC.

All courses should be chosen with the help of an academic advisor.

Note: Multimedia Programming, Simulation & Gaming (108) (Degree) and Multimedia Web Programming (104.3) were moved from Arts and Humanities. to the Science, Technology Engineering & Mathematics (STEM) section of the catalog.

Students interested in CCAC's multi-discipline Mechatronics Technology program will find the requirements under Trades.

- Architectural Drafting & Design Technology (270.1) (Degree)
- Biology (031.3) (Degree)
- Biotechnology (416.4) (Degree)
- Biotechnology (417.3) (Certificate)
- Chemistry (035.1) (Degree)
- Civil Engineering Technology (400.2) (Degree)
- Civil Engineering Technology (277.1) (Certificate)
- Computer Information Technology (CIT) Programs
 - Administrative Computer Specialist (234) (Certificate) (CIT)
 - Computer Forensics (233) (Certificate) (CIT)
 - Computer Information Systems (050.3) (Degree)
 - Cybersecurity (784) (Degree) (CIT)
 - Cybersecurity (786) (Certificate)(CIT)
 - Information Technology Support (783.4) (Degree) (CIT)
 - Information Technology Support (242.5) (Certificate) (CIT)
 - Multimedia Programming, Simulation & Gaming (108) (Degree) (CIT)
 - Multimedia Web Programming (104.3) (Certificate) (CIT)
 - Software Development (780.3) (Degree) (CIT)
 - Software Development (243.4) (Certificate) (CIT)
- Computer-aided Drafting & Design Technology (422.1) (Degree)
- Computer-aided Drafting, Basic (717.1) (Certificate)
- Electronic Engineering Technology (300.1) (Degree)
- Electronics, Basic (299.2) (Certificate)
- Engineering Science (093.1) (Degree)
- Engineering Technology (094.1) (Degree)
- Green & Sustainable Building Design (490) (Certificate)
- Machine Technician (706.2) (Certificate)
- Manufacturing Technology (705.5) (Degree)
- Mathematics & Sciences (003) (Degree)¹
- Mechanical Drafting & Design Technology (276.1) (Degree)
- Nanotechnology (454) (Degree)
- Nanofabrication Technology (709) (Certificate)
- Physics (047.1) (Degree)

¹University parallel program

STUDENT NOTES

Architectural Drafting & Design Technology (270.1)

SOUTH
Associate of Science

The Architectural Drafting & Design Technology program prepares the student for employment in the architectural and related fields. Through drafting projects students will learn to prepare various architectural drawings of structures and equipment systems derived from layouts and sketches. Students will transform initial designs using computer aided drafting (CAD) into working architectural drawings adhering to the American Standards Institute (ANSI) and American Institute of Architects (AIA) drafting standards.

Students may find employment as an architectural drafting technician, computer aided drafting technician, or as an engineering drafter.

Upon successful completion of the program, the graduate will:

1. Utilize fundamental and advanced two-dimensional and three-dimensional CAD to produce architectural drawings and renderings.
2. Explain mechanical, electrical and plumbing building systems.
3. Describe construction materials and construction methods.
4. Prepare a set of working architectural drawings utilizing AIA standards for a light commercial building including basement plans, floor plans, elevations, site plan, construction details, schedules and architectural systems.
5. Apply two-dimensional and three-dimensional CAD software to architectural design and drafting problems.

Degree Requirements

First Semester	Credits
EDD-101 Engineering Drawing 1	3
EDD-120 Introduction to Computer-aided Drafting	4
EGR-100 Engineering Seminar	1
MAT-114 Mathematics for the Technologies 1	4
Social Science Elective	3
	15

Second Semester

EDD-102 Engineering Drawing 2	3
EDD-121 Computer-assisted Drafting Applications	4
MAT-116 Mathematics for the Technologies 2	4
MET-115 Architectural Systems Design	3
PHY-113 Technical Physics 1	3
	17

Third Semester

CET-201 Materials of Construction	4
EDD-141 Structural Drafting	3
EDD-230 Architectural Drafting	4
ENG-101 English Composition 1	3
MET-150 Statics	4
	18

Fourth Semester

EDD-245 Advanced Engineering Drawing	4
ENG-103 Technical Communications	3
MET-211 Strength of Materials	4
Humanities Elective	3
	14

Minimum Credits to Graduate 64

Biology (031.3)

ALLEGHENY, BOYCE, NORTH, SOUTH
Associate of Science



A program that prepares the student with a broad college background and skills in biology for transfer to a four-year institution.

Upon successful completion of the program, the graduate will:

1. Describe the fundamental principles in the biological sciences.
2. Apply the principles of the scientific method.
3. Communicate effectively using scientific terminology.
4. Recognize contributions of science and scientists to humanity's present and future welfare.

Graduates may earn a bachelor's degree in biology or a related field.

Degree Requirements

First Semester

	Credits
BIO-151 General Biology 1	4
CHM-151 General Chemistry 1	4
ENG-101 English Composition 1	3
MAT-111 College Algebra ¹	3
Computer Information Technology Elective	3-4
	17-18

Second Semester

BIO-152 General Biology 2	4
CHM-152 General Chemistry 2	4
ENG-102 English Composition 2	3
MAT-142 Pre-Calculus ¹	4
	15

Third Semester

CHM-201 Organic Chemistry 1	4
SPH-101 Oral Communication	3
Humanities Elective	3
Restricted Elective ^{2,3}	3-4
Social Science Elective	3
	16-17

Fourth Semester

CHM-202 Organic Chemistry 2	4
Humanities Elective	3
Restricted Elective ^{2,3(2)}	6-8
Social Science Elective	3
	16-18

Minimum Credits to Graduate

64-68

¹Required as part of TAOC (Transfer and Articulation Oversight Committee). If you are not intending to transfer to an institution that is participating in the state-wide articulation agreement, students may substitute *MAT-108, Intermediate Algebra* or any higher level mathematics course..

Restricted Electives:

²For students transferring to a TAOC participating institution, students are required to choose three (3) restricted Biology electives from among the following:

BIO-121 Principles of Sustainability	3
BIO-201 Botany	4
BIO-207 Genetics	4
BIO-230 Research Methodology & Quality Assurance	3

³For students who are not intending to transfer to a TAOC participating-institution, students are required to meet with a transfer counselor to select three (3) restricted Biology electives based upon the four-year institution where the bachelor's degree will be earned.

Biotechnology (416.4)

ALLEGHENY, BOYCE

Associate of Science

This program is designed to meet the need for skilled workers in the biotechnology industry. It provides training for varying levels of technical skills (tissue culture, sterile technique, DNA/protein protocols) for those interested in laboratory employment, whether they are in the biotechnology industry, medical or academic research institution. Career paths include laboratory assistant/associate, manufacturing technician, and quality control technician.

Upon successful completion of the program, the graduate will:

1. Prepare lab reagents and conduct experiments with minimum sources of error using basic instruments and math skills.
2. Explain the principles and practices of biotechnology.
3. Work effectively in cooperative teams in a lab setting to design and complete experiments.
4. Report the analysis of laboratory findings using both oral and written communication skills.
5. Evaluate societal issues and implications of biotechnology.
6. Prepare job search materials, including a lab notebook and resume.

(A) Transfer Track

Degree Requirements

First Semester	Credits
BIO-151 General Biology 1	4
BTC-100 Survey of Biotechnology	2
CIT-100 Computer Fundamentals & Applications or	3
CIT-111 Introduction to Programming: Java or	4
SET-105 Technical Computing	3
ENG-101 English Composition 1	3
MAT-108 Intermediate Algebra	4
	16–17

Second Semester

BIO-175 Microbiology	4
BTC-101 Biotechnology Laboratory 1	4
CHM-151 General Chemistry 1	4
MAT-165 Probability & Statistics	4
	16

Third Semester

BIO-207 Genetics	4
BIO-230 Research Methodology & Quality Assurance	3
BTC-103 Bioinformatics	3
CHM-152 General Chemistry 2	4
ENG-102 English Composition 2 or	3
ENG-103 Technology Communications	3
	17

Fourth Semester

BIO-216 Cell Biology	3
BTC-102 Bioethics Seminar	1
BTC-202 Biotechnology Lab 2	4
BTC-203 Cell Biology/Immunology Lab	1
BTC-204 Biotechnology Internship ¹	2
Humanities Elective	3
Social Science Elective	3
	17

Minimum Credits to Graduate: 66–67

¹Internship may be started any time after taking *Biotechnology Laboratory 1 (BTC-101)* and consists of 120 hours in a lab.

(continued)

Biotechnology (416.4) (continued)**(B) Career Track****Degree Requirements**

First Semester		Credits
BIO-151	General Biology 1	4
BTC-100	Survey of Biotechnology	2
CIT-100	Computer Fundamentals & Applications or	3
CIT-111	Introduction to Programming: Java or	4
SET-105	Technical Computing	3
ENG-101	English Composition 1	3
MAT-108	Intermediate Algebra	4
		16–17
Second Semester		
BIO-175	Microbiology	4
BTC-101	Biotechnology Laboratory 1	4
CHM-120	Bio-organic Chemistry or	4
CHM-151	General Chemistry 1	4
MAT-165	Probability & Statistics	4
		16
Third Semester		
BIO-207	Genetics	4
BIO-230	Research Methodology & Quality Assurance	3
BTC-103	Bioinformatics	3
ENG-102	English Composition 2 or	3
ENG-103	Technical Communications	3
	Humanities Elective	3
		16
Fourth Semester		
BIO-216	Cell Biology	3
BTC-102	Bioethics Seminar	1
BTC-202	Biotechnology Lab 2	4
BTC-203	Cell Biology/Immunology Lab	1
BTC-204	Biotechnology Internship	2
	Social Science Elective	3
		14
Minimum Credits to Graduate:		62–63

¹Internship may be started any time after taking *Biotechnology Laboratory 1 (BTC-101)* and consists of 120 hours in a lab.

Biotechnology (417.3)

ALLEGHENY, BOYCE

Certificate

This program is designed for students who already have a baccalaureate degree in the sciences and want to expand their background in biotechnology. The curriculum is designed to include background courses in biology and chemistry, with special emphasis on molecular biology and the specific techniques for the biotechnology industry. Career paths include lab technician or a research technician.

Upon successful completion of this program, the graduate will:

1. Prepare lab reagents to conduct experiments with minimum sources of error using basic instruments and mathematics skills.
2. Work effectively in cooperative teams in a lab setting to design and complete experiments.
3. Report the analysis of laboratory findings using both oral and written communications.

Certificate Requirements

First Semester		Credits
BIO-207	Genetics	4
BTC-101	Biotechnology Laboratory 1	4
MAT-165	Probability & Statistics	4
		12
Second Semester		
BIO-230	Research Methodology & Quality Assurance	3
BTC-102	Bioethics Seminar	1
BTC-103	Bioinformatics	3
BTC-202	Biotechnology Lab 2	4
BTC-204	Biotechnology Internship ¹	2
		13
Minimum Credits to Graduate		25

¹Internship consists of 120 hours in a lab.

Prospective students must demonstrate a proficiency in the following courses:

BIO-151	General Biology 1	4
BIO-175	Microbiology	4
BIO-216	Cell Biology	3
CHM-151	General Chemistry 1	4
CHM-152	General Chemistry 2	4

Chemistry (035.1)

ALLEGHENY, BOYCE, NORTH, SOUTH
Associate of Science



This program prepares the student with a broad college background and skills of chemistry to transfer to a four-year institution. Graduates may earn a bachelor's degree and prepare for graduate training in many scientific fields.

Upon successful completion of the program, the graduate will:

1. Safely conduct chemical experiments, and analyze and interpret the results.
2. Apply fundamental concepts of chemical reactivity.
3. Apply the knowledge of chemical substances to predict properties and interactions.
4. Demonstrate proficiency in writing formulas and names for inorganic, bio-organic and organic chemical compounds using the IUPAC system of nomenclature.
5. Make use of dimensional analysis to solve chemical calculation problems.
6. Evaluate technical references critically and apply concepts in peer-reviewed scientific literature.

Degree Requirements

First Semester

	Credits
CHM-151 General Chemistry 1	4
CIT-111 Introduction to Programming: Java	4
ENG-101 English Composition 1	3
SPH-101 Oral Communication	3
Humanities Elective	<u>3</u>
	17

Second Semester

CHM-152 General Chemistry 2	4
ENG-102 English Composition 2	3
MAT-201 Calculus 1	4
PHY-221 Physics for Science & Engineering 1	4
	<u>15</u>

Third Semester

CHM-201 Organic Chemistry 1	4
MAT-202 Calculus 2	4
PHY-222 Physics for Science & Engineering 2	4
Humanities Elective	<u>3</u>
	15

Fourth Semester

CHM-202 Organic Chemistry 2	4
MAT-250 Calculus 3	4
PHY-223 Physics for Science & Engineering 3	4
Social Science Elective	<u>3</u>
	15

Minimum Credits to Graduate **62**

Civil Engineering Technology (400.2)

SOUTH
Associate of Science

This program prepares students to support civil engineers, architects, consulting engineers and contractors in a variety of applications such as structural drafting and design, public works, construction, inspection, transportation, surveying and environmental engineering. Students learn sustainability technology, technical problem solving and material testing which enables them to pursue careers as civil engineering technicians, CAD drafters, construction materials testing, land surveyors and surveying technicians.

Upon successful completion of the program, graduates will:

1. Prepare civil and structural drawings using two-dimensional and three-dimensional CAD software.
2. Apply the knowledge of construction terminology, construction materials, construction methods and soil mechanics and describe their influence on construction and site development.
3. Analyze the physical problems and assets of a building site to produce a logical esthetic solution to site development.
4. Utilize surveying and GPS equipment to create construction surveys, boundary surveys, control surveys and mapping.
5. Demonstrate the application of surveying techniques to highway surveying.
6. Explain the impact of green or sustainable technologies to site plan development in ways that will not harm the environment or deplete natural resources.

Degree Requirements

First Semester

	Credits
EDD-120 Introduction to Computer-aided Drafting	4
EGR-100 Engineering Seminar	1
EGR-110 Engineering Surveying	4
MAT-114 Mathematics for the Technologies 1	4
SET-105 Technical Computing	3
Humanities Elective	<u>3</u>
	19

Second Semester

EDD-121 Computer-assisted Drafting Applications	4
EGR-111 Route Surveying	4
ENG-101 English Composition	3
MAT-116 Mathematics for the Technologies 2	4
PHY-113 Technical Physics	<u>3</u>
	18

(continued)

Civil Engineering Technology (400.2) (continued)

Third Semester

CET-201	Materials of Construction	4
EDD-141	Structural Drafting	3
MET-150	Statics	4
PHY-114	Technical Physics 2	3
	Social Science Elective	<u>3</u>
		17

Fourth Semester

CET-202	Soils in Construction	4
CET-215	Site Plan Development	4
ENG-103	Technical Communications	3
MET-211	Strength of Materials	4
MET-220	Green & Sustainable Buildings	<u>4</u>
		19

Minimum Credits to Graduate 73

Civil Engineering Technology (277.1)

NORTH, SOUTH

Certificate

This program prepares students to accurately and technically correct civil engineering drawings. Students learn the fundamentals of surveying, CAD drafting, site planning and development and green or sustainability technology, which enables them to pursue careers as civil CAD drafters and surveying technicians.

Upon successful completion of the program, the graduate will:

1. Prepare civil drawings using two-dimensional CAD software; apply the knowledge of construction terminology, construction materials and construction methods and describe their influence on site development.
2. Apply the knowledge of construction terminology, construction materials and construction methods and describe their influence on site development.
3. Analyze the physical problems and assets of a building site to produce a logical esthetic solution to site development.
4. Utilize surveying and GPS equipment to create construction surveys, boundary surveys, control surveys and mapping.
5. Demonstrate the application of surveying techniques to highway surveying.
6. Explain the impact of green or sustainable technologies to site plan development in ways that will no harm the environment or deplete natural resources.

Certificate Requirements

First Semester	Credits
CET-215 Site Plan Development	4
EDD-120 Introduction to Computer-aided Drafting	4
EGR-110 Engineering Surveying	4
MAT-114 Mathematics for the Technologies 1	<u>4</u>
	16

Second Semester

CET-140 Site Plan Drafting	3
CET-201 Materials of Construction	4
EDD-121 Computer-assisting Drafting Applications	4
EGR-111 Route Surveying	<u>4</u>
	15

Minimum Credits to Graduate 31

Computer Information Technology Programs
CIT—Computer Information Systems (050.3)

ALLEGHENY, BOYCE, NORTH, SOUTH
 Associate of Science

This program prepares students for transfer to a four-year institution with a broad knowledge in computers and information science. Students may continue on in their studies at another college and earn a bachelor’s degree in information science, information systems, information technology, computer science or computer engineering.

Upon completion of the program, students will:

1. apply core principles and practices of computing;
2. utilize conventional terminology related to computer and information science;
3. collect information and carry out research using relevant and appropriate sources; and
4. utilize digital and other technological tools to access and communicate information needed to complete tasks.

Degree Requirements

First Semester		Credits
CIT-111	Introduction to Programming: Java	4
ENG-101	English Composition 1	3
	General Elective ¹	3
	Mathematics Elective ¹	3–4
	Science Elective	<u>3</u>
		16–17

Second Semester		
ENG-102	English Composition 2	3
	CIT Restricted Elective ²	3–4
	General Elective ¹	3
	Mathematics Elective	3–4
	Science Elective	<u>3–4</u>
		15–18

Third Semester		
SPH-101	Oral Communication	3
	CIT Restricted Elective ²	3–4
	General Elective ¹	3
	Mathematics Elective ¹	3–4
	Social Science Elective	<u>3</u>
		15–17

Fourth Semester

CIT Restricted Elective ²	3–4
General Elective (3) ¹	9
Humanities Elective	<u>3</u>
	15–16

Minimum Credits to Graduate 61–68

¹Mathematics Electives and General Electives: The three mathematics electives and six general electives should be selected in consultation with a transfer counselor and as identified and articulated with the four-year institution’s transfer program.

²CIT Restricted Electives (3 required): The three CIT restricted electives must be selected from the following list in consultation with a transfer counselor and as identified and articulated with the four-year institution’s transfer program. At least one of these restricted electives must be a 200-level course.

CIT-115	Introduction to Information Technology	3
CIT-120	Networking	3
CIT-125	Web Development	3
CIT-130	Object-oriented Programming: Java	4
CIT-140	Office Productivity Applications	4
CIT-145	Programming in C	3
CIT-161	Visual Basic: Windows Programming	4
CIT-215	Systems Analysis & Design	3
CIT-230	Database Systems	4
CIT-244	Object-Oriented Programming 2: Java	4
CIT-245	Data Structures & Program Design: C++	4

CIT–Administrative Computer Specialist (234)

ALLEGHENY, BOYCE, NORTH, SOUTH
Certificate

This certificate program is designed for students currently employed as administrative assistants or secretaries and seeking to enhance their information technology (IT) skills in a business, professional, educational or industrial office environment. Graduates of this program may be eligible for promotion to positions such as senior or executive secretary or administrative assistant.

Students learn the effective use of information technology and application software involving word processing, desktop publishing, spreadsheets, presentation graphics, e-commerce and databases.

Upon successful completion of the program, the graduate will:

1. Apply conventional office management techniques.
2. Apply essential information technology skills within an office environment.
3. Use various computer applications to create properly formatted business documents.
4. Organize work flow and coordinate office activities.

Certificate Requirements

First Semester

	Credits
CIT-115 Introduction to Information Technology	3
CIT-141 Word Processing	3
CIT-600 Introduction to Windows	1
CIT-601 Introduction to the Internet Research	$\frac{1}{8}$

Second Semester

CIT-140 Office Productivity Applications	4
CIT-142 Desktop Publishing Concepts	3
CIT-602 Presentation Graphics: PowerPoint	$\frac{1}{8}$

Third Semester

BUS-140 Introduction to E-commerce	3
CIT-206 Administrative Technology & Procedures	3
CIT-607 Office Management: Outlook	$\frac{1}{7}$

Minimum Credits to Graduate **23**

CIT–Computer Forensics (233)

ALLEGHENY, BOYCE, NORTH, SOUTH
Certificate

The certificate in Computer Forensic Technology program at CCAC offers specialized and demanding knowledge and skills necessary for performing professional duties as computer forensic examiners/technicians, analysts, investigators and auditors in public or private environment security firms.

The program includes courses in both the computer and information technology and criminal justice disciplines and provides students a solid technical background in the methods, techniques and tools of recovering and processing computer and digital data as well as in the fundamental laws, rules, procedures and ethics of collecting and reporting digital evidence. .

Upon successful completion of the program, graduates will be able to:

1. Apply knowledge of computer hardware, software, file systems, networks and principles of information security in identifying and processing computer crime and information security incidents.
2. Demonstrate computer forensic investigation skills using computer forensic hardware and software tools.
3. Describe the fundamentals of the criminal justice system, search and seizure and evidence evaluation and court procedures, regarding computer and digital evidence.
4. Apply critical thinking skills, problem solving skills and observe professional ethics in case and data analysis.
5. Successfully complete a capstone project or internship in computer forensics that culminates into a portfolio.

The following is a suggested course sequence for completing the certificate in the shortest amount of time.

(continued)

**CIT-Computer Forensics (233)
(continued)**

Certificate Requirements

First Semester		Credits
CIT-115	Introduction to Information Technology ¹	3
CJC-203	Evidence & Procedures	<u>3</u>
		6
Second Semester		
CIT-180	Computer Forensics 1	3
CIT-181	Principles of Information Security	<u>4</u>
		7
Third Semester		
CIT-280	Computer Forensics 2	4
CIT-281	Project in Computer Forensics	<u>2</u>
		6
Minimum Credits to Graduate:		19

¹Students with an IT background may have the option to petition for a waiver or substitute for *CIT-115*.

CIT-Cybersecurity (784)

ALLEGHENY, BOYCE, NORTH, SOUTH
Associate of Science

This program prepares students for entry-level careers in Cybersecurity. The program objectives are based on the guidelines in the Cybersecurity Workforce Framework published by the National Initiative for Cybersecurity Careers and Studies (NICCS).

Upon successful completion of the program, the graduate will:

1. Identify, describe and analyze vulnerabilities, threats and risks for critical information assets.
2. Plan, implement and maintain security measures and controls to protect critical information assets.
3. Prevent, detect, analyze and respond to system intrusions and data breaches.
4. Analyze and evaluate emerging cybersecurity risks and solutions with creative and critical thinking and research skills.

Degree Requirements

First Semester		Credits
CIT-115	Introduction to Information Technology ¹	3
CIT-175	Cyberspace Vulnerabilities and Risks	3
CJC-101	Introduction to Criminal Justice	3
ENG-101	English Composition 1	3
	Mathematics Elective	<u>3-4</u>
		15-16
Second Semester		
CIT-111	Introduction to Programming: Java	4
CIT-180	Computer Forensics 1	3
CIT-181	Principles of Information Security	4
ENG-102	English Composition 2	3
	Criminal Justice and Criminology Elective	<u>3</u>
		17

(continued)

CIT–Cybersecurity (784) (continued)**Third Semester**

CIT-185	Network Security	3
CIT-186	Intrusion Detection and Prevention	3
	Computer and Information Technology	
	Elective	3-4
	Science Elective	3-4
	Social Science Elective	<u>3</u>
		15-17

Fourth Semester

CIT-282	Advanced Cybersecurity Topics	3
CIT-285	Cybersecurity Capstone ²	3
SPH-101	Oral Communication	3
	Accounting or Business Elective	3-4
	Computer and Information	
	Technology Elective	<u>3-4</u>
		15-17

Minimum Credits to Graduate: 60-67

¹*CIT-115* may be waived with instructor approval. If *CIT-115* is waived, at least one of the following should be taken to reach a minimum of 60 credits to graduate: *CIT-615*, *CIT-641*, *CIT-125*, *CIT-215*, *CIT-230*, *CIT-280*, *CJC-201*.

²*CIT-285*, Cybersecurity Capstone, must be taken in the last semester.

CIT–Cybersecurity (786)

ALLEGHENY, BOYCE, NORTH, SOUTH
Certificate

The certificate program, designed primarily for students who already have a college degree, prepares students for entry-level careers related to Cybersecurity. The program objectives are based on the guidelines in the Cybersecurity Workforce Framework published by the National Initiative for Cybersecurity Careers and Studies (NICCS).

Upon successful completion of the program, the graduate will:

1. Identify, describe and analyze vulnerabilities, threats and risks for critical information assets.
2. Plan, implement and maintain security measures and controls to protect critical information assets.
3. Prevent, detect, analyze and respond to system intrusions and data breaches.
4. Analyze and evaluate emerging cybersecurity risks and solutions with creative and critical thinking and research skills.

Certificate Requirements**First Semester****Credits**

CIT-115	Introduction to Information Technology ¹	3
CIT-175	Cyberspace Vulnerabilities and Risks	<u>3</u>
		6

Second Semester

CIT-180	Computer Forensics 1	3
CIT-181	Principles of Information Security	4
CIT-185	Network Security	3
CIT-186	Intrusion Detection and Prevention	<u>3</u>
		13

Third Semester

CIT-282	Advanced Cybersecurity Topics	3
CIT-285	Cybersecurity Capstone	<u>3</u>
		6

Minimum Credits to Graduate: 22-25

¹*CIT-115* may be waived with instructor approval.

²*CIT-285*, *Cybersecurity Capstone*, must be taken in the final semester.

CIT-Information Technology Support (783.4)

ALLEGHENY, BOYCE, NORTH, SOUTH
Associate of Science

This program provides students with specific technical competencies for entry-level employment opportunities as a user support or network support specialist. Various job titles in the field include help desk support, technical support, end-user trainer, network support technician and network administrator.

Students obtain a foundation in hardware components, operating systems, networked environments, troubleshooting technical problems and supporting users. Students interested in various levels of industry certifications can benefit from the knowledge and skills provided by this program.

Upon successful completion of the program, the graduate will:

1. Create technical documentation and locate necessary online documentation.
2. Evaluate information technology system and project management strategies.
3. Apply research material dealing with organizational and information technology issues.
4. Analyze developments and trends in information technology that impact businesses and individuals and present the analysis results in oral and written formats.
5. Use troubleshooting strategies and techniques in correcting a variety of information technology design issues and problems.

Degree Requirements

First Semester	Credits
CIT-111 Introduction to Programming: Java	4
CIT-115 Introduction to Information Technology	3
ENG-101 English Composition 1	3
SPH-101 Oral Communication	3
Mathematics Elective	<u>3-4</u>
	16-17

Second Semester

CIT-120	Networking	3
CIT-130	Object-oriented Programming: Java or	4
CIT-161	Visual Basic: Windows Programming	4
CIT-150	PC Components & Operating Systems	3
ENG-102	English Composition 2	3
ACC/BUS	Accounting or Business course	<u>3-4</u>
		16-17

Third Semester

CIT-205	Help Desk & User Support	3
	CIT Restricted Elective ¹	3
	CIT Restricted Elective ¹	4
	Science Elective	<u>3-4</u>
		13-14

Fourth Semester

CIT-215	Systems Analysis & Design	3
CIT-230	Database Systems	4
	CIT Restricted Elective ¹	3-4
	CIT Restricted Elective ¹	3-4
	Social Science Elective	<u>3</u>
		16-18

Minimum Credits to Graduate 61-66

¹CIT restricted electives (four required):

CIT-140	Office Productivity Applications	4
CIT-181	Principles of Information Security	4
CIT-220	Linux Operating System	3
CIT-250	Internetworking of Computers	3
CIT-251	Windows Server Operating System	4
CIT-255	Web Server Administration	3

CIT–Information Technology Support (242.5)

ALLEGHENY, BOYCE, NORTH, SOUTH
Certificate

This program addresses individuals with a technical orientation, including college graduates from other fields or already working in a different area of IT, who are interested in a career that provides technical support of a computer or a computer network.

This program provides students with specific technical competencies for entry-level employment opportunities as a user support or network support specialist. Various job titles in the field include help desk support, technical support, end-user trainer, network support technician or network administrator.

Students obtain a foundation in hardware components, operating systems, networked environments, troubleshooting technical problems and supporting users. Students interested in various levels of industry certifications can benefit from the knowledge and skills provided by this program.

Upon successful completion of the program, the graduate will:

1. Create technical documentation and locate necessary online documentation.
2. Evaluate information technology system and project management strategies..
3. Apply research material dealing with organizational and information technology issues.
4. Analyze developments and trends in information technology that impact businesses and individuals and present the analysis results in oral and written formats.
5. Use troubleshooting strategies and techniques in correcting a variety of information technology design issues and problems.

Prerequisite: Students are assumed to have either taken *CIT-115 Introduction to Information Technology* or demonstrate equivalent experience or knowledge prior to starting this certificate program. *CIT-115* is a prerequisite for the first semester courses. Some industry certifications such as those provided by CompTIA or Cisco CCNA can be used as proof of equivalent knowledge.

Certificate Requirements

First Semester		Credits
CIT-120	Networking	3
CIT-150	PC Components & Operating Systems	<u>3</u>
		6
Second Semester		
	CIT Restricted Elective ¹	3
	CIT Restricted Elective ¹	3–4
	CIT Restricted Elective ¹	<u>3–4</u>
		9–11
Third Semester		
CIT-205	Help Desk & User Support	3
CIT-215	Systems Analysis & Design	3
	CIT Restricted Elective ¹	<u>4</u>
		10

Minimum Credits to Graduate 25–27

¹CIT restricted electives (four required)

CIT-140	Office Productivity Applications	4
CIT-181	Principles of Information Security	4
CIT-220	Linux Operating System	3
CIT-250	Internetworking of Computers	3
CIT-251	Windows Server Operating System	4
CIT-255	Web Server Administration	3

CIT–Multimedia Programming, Simulation & Gaming (108)

NORTH

Associate of Science

The Multimedia Programming, Simulation and Gaming degree provides skills and knowledge across a broad range of careers in the gaming industry, including independent game developer, computer programming, game designer, product manager, video game tester, application developer and simulation programmer. Students will learn technical training including game development, animation software tools, digital imaging and programming.

Students pursuing careers in the gaming industry most often require a minimum of a bachelor's degree and it is recommended that they transfer to four-year institutions in order to pursue competitive employment opportunities. Students will develop a portfolio while completing the degree to show prospective employers and transfer counselors.

Students who successfully complete CCAC's Multimedia Web Programming certificate (104) will be able to apply 12 of their credits to the Multimedia Programming, Simulation and Gaming associate degree.¹

Upon successful completion of the program, the graduate will:

1. Apply 2D and 3D animation concepts to design and develop a single-level game.
2. Utilize programming skills to create simulation and animation.
3. Create a game and simulation from concept to completion.
4. Utilize Maya, Blender and Action Script in simulation and game programming.
5. Communicate effectively and appropriately with team members and players in the development of games and simulation.

Credits may be articulated for courses completed in high school career and technology programs.

Degree Requirements

First Semester		Credits
CIT-111	Introduction to Programming: Java	4
CIT-125	Web Development ¹	3
MMC-111	Developing Images for the Web ¹	3
MMC-150	Programming with JavaScript, JQuery and Action Script ¹	3
MMC-160	Game Design & Simulation 1	<u>3</u>
		16

Second Semester		Credits
ART-114	Two-dimensional Design	3
CIT-130	Object-Oriented Programming 2: Java	4
ENG-101	English Composition 1	3
MMC-112	Audio & Video for the Web ¹	3
MMC-170	Game Design & Simulation 2	<u>3</u>
		16

Third Semester		Credits
CIT-145	Programming in C	3
MMC-250	Three-dimensional Design for Gaming	3
MAT-108	Intermediate Algebra	4
MMC-260	Maya for Gaming 1	3
PSY-101	Introduction to Psychology	<u>3</u>
		16

Fourth Semester		Credits
CIT-245	Data Structures & Programming C++	4
ENG-102	English Composition 2	3
MMC-270	Maya for Gaming 2	3
PHY-141	Physics 1	<u>4</u>
		14

Minimum Credits to Graduate 62

¹The four courses from the Multimedia Web Programming certificate which can be applied to this degree are the following: *Web Development (CIT-125)*, *Developing Images for the Web (MMC-111)*, *Audio and Video for the Web (MMC-112)* and *Programming with JavaScript, JQuery and Action Script (MMC-150)*.

CIT–Multimedia Web Programming (104.3)

NORTH
Certificate

This certificate program is designed for students seeking skills to create high-end websites with strong design and functional abilities. Students learn to design, create and administer interactive and professional web sites that utilize server-side programming technologies. Web page navigation, web publishing, web images preparation, database design and development and e-commerce solutions, including store front setup, are integral components of this certificate which focuses on server-side programming.

This program is ideal for both graphic designers who need the technical programming skills to implement their website designs; and for students, not necessarily with an arts background, who want to pursue website programming.

Students who are interested in advanced programming skills may apply their first semester classes (12 credits) to CCAC's Multimedia Web Programming, Simulation and Gaming (108) associate degree.

Upon successful completion of the program, the graduate will:

1. Apply programming skills for effective communications.
2. Communicate effectively in a professional and diverse customer-based environment.
3. Develop web pages for marketing and e-commerce sites.
4. Evaluate websites for structure, standards and usability.
5. Maintain and repair systems and functions associated with web document maintenance.

Potential job opportunities following program completion include web designer, web developer, web marketing manager, web manager, e-commerce manager, web programmer, web technician or web server administrator for corporate communications marketing, education, sales departments, design firms, publishers or animation studios.

Certificate Requirements

First Semester

CIT-125	Web Development	3
MMC-111	Digital Imaging	3
MMC-112	Audio and Video for the Web	3
MMC-150	Programming JavaScript, JQuery and ActionScript	3
		<u>12</u>

Second Semester

CIT-230	Database Systems	4
MMC-225	Content Management Systems	3
MMC-228	Instructional Design	3
MMC-230	Self-Promotion in a Virtual World	2
MMC-231	Web Commerce	3
		<u>15</u>

Minimum Credits to Graduate

27

CIT-Software Development (780.3)

ALLEGHENY, BOYCE, NORTH, SOUTH
Associate of Science

This program provides students with specific technical competencies for entry-level employment opportunities as programmers.

Students obtain a foundation in computer programming concepts, systems development and data modeling. Students learn software development and programming using object-oriented languages such as Java and Visual Basic.

Upon successful completion of the program, the graduate will:

1. Create technical documentation and locate necessary online documentation.
2. Evaluate information technology system and project management strategies..
3. Apply research material dealing with organizational and information technology issues.
4. Analyze developments and trends in information technology that impact businesses and individuals and present the analysis results in oral and written formats.
5. Use troubleshooting strategies and techniques in correcting a variety of information technology design issues and problems.

Degree Requirements

First Semester		Credits
CIT-111	Introduction to Programming: Java	4
CIT-115	Introduction to Information Technology	3
ENG-101	English Composition 1	3
SPH-101	Oral Communication	3
	Mathematics Elective	<u>3-4</u>
		16-17

Second Semester		Credits
CIT-120	Networking	3
CIT-130	Object-oriented Programming: Java	4
ENG-102	English Composition 2	3
ACC/BUS	Accounting or Business course	3-4
	CIT Restricted Elective	<u>3</u>
		16-17

Third Semester

CIT-161	Visual Basic: Windows Programming	4
CIT-244	Object-Oriented Programming 2: Java	4
	CIT Restricted Elective ¹	4
	Science Elective	<u>3-4</u>
		15-16

Fourth Semester

CIT-215	Systems Analysis & Design	3
CIT-230	Database Systems	4
	CIT Restricted Electives ¹	3
	CIT Restricted Electives ¹	3-4
	Social Science Elective	<u>3</u>
		16-17

Minimum Credits to Graduate 63-67

¹ CIT restricted electives (four required):		
CIT-125	Web Development	3
CIT-135	Mobile Apps Programming 1	3
CIT-140	Office Productivity Applications	4
CIT-145	Programming in C	3
CIT-245	Data Structures & Programming: C++	4

CIT-Software Development (243.4)

ALLEGHENY, BOYCE, NORTH, SOUTH

Certificate

This program addresses individuals with a technical orientation, including college graduates from other fields, who are interested in a career in programming. This program provides students already holding a degree with specific technical competencies for entry-level employment opportunities as programmers.

Students obtain a foundation in computer programming concepts, systems development and data modeling. Students learn software development and programming using object-oriented languages such as Java and Visual Basic.

Upon successful completion of the program, the graduate will:

1. Create technical documentation and locate necessary online documentation.
2. Evaluate information technology system and project management strategies.
3. Apply research material dealing with organizational and information technology issues.
4. Analyze developments and trends in information technology that impact businesses and individuals and present the analysis results in oral and written formats.
5. Use troubleshooting strategies and techniques in correcting a variety of information technology design issues and problems.

Prerequisite: Students are assumed to have either taken *CIT-111 Introduction to Programming: Java* or demonstrate equivalent experience or knowledge prior to starting this certificate program.

Certificate Requirements

First Semester		Credits
CIT-130	Object-oriented Programming: Java	4
CIT-230	Database Systems	4
		8
Second Semester		
CIT-161	Visual Basic: Windows Programming	4
	Computer Restricted Electives ¹	3
		7
Third Semester		
CIT-215	Systems Analysis & Design	3
	Computer Restricted Elective ¹	4
	Computer Restricted Elective ¹	3-4
		10-11
Minimum Credits to Graduate:		25-26

¹CIT restricted electives (three required; one must be a 200 level course)

CIT-125	Web Development	3
CIT-135	Mobile Apps Programming 1	3
CIT-145	Programming in C	3
CIT-244	Object-Oriented Programming 2: Java	4
CIT-245	Data Structures & Programming: C++	4

Computer-aided Drafting & Design Technology (422.1)

SOUTH
Associate of Science

The Computer-aided Drafting and Design (CADD) Technology degree prepares the student for employment in the modern CADD environment. Students are skilled in preparing complete, concise and accurate computer-based engineering communications.

Students will function as a member of the engineering team demonstrating professionalism, responsibility and confidence. Through multiple projects, students are skilled in solving both two-dimensional and three-dimensional technical problems involving parametric and solid modeling using modern CADD programs.

Upon successful completion of the program, the graduate will:

1. Be proficient with basic and advanced two-dimensional and three-dimensional CAD commands to produce engineering drawings.
2. Generate an engineering drawing showing the object in its completed condition containing all the necessary information, notes and dimensioning to bring it to that final state.
3. Apply geometric construction techniques in the construction of technical drawings.
4. Apply descriptive geometry methods to the solution of spatial problems.
5. Prepare engineering drawings using two-dimensional and three-dimensional CAD software in a professional manner using knowledge of drafting room practices and techniques.

Degree Requirements

First Semester	Credits
EDD-101 Engineering Drawing 1	3
EDD-120 Introduction to Computer-aided Drafting	4
EGR-100 Engineering Seminar	1
ENG-101 English Composition 1	3
MAT-114 Mathematics for the Technologies 1	4
	15

Second Semester

EDD-102 Engineering Drawing 2	3
EDD-121 Computer-assisted Drafting Applications	4

MAT-116 Mathematics for the Technologies 2	4
PHY-113 Technical Physics 1	3
SET-105 Technical Computing	3
	17

Third Semester

EDD-135 Introduction to Parametric Modeling	3
EDD-150 Introduction to Architectural Modeling	3
EDD-222 Customizing the CAD Environment	3
Advanced Drafting Elective ¹	3-4
Social Science Elective	3
	15-16

Fourth Semester

EDD-221 Parametric Modeling 2	3
ENG-103 Technical Communications	3
Humanities Elective	3
Technical Electives ²	6-8
	15-17

Minimum Credits to Graduate 62-65

¹EDD-141 and above are permitted drafting electives.

²Technical Electives

CET	Civil Engineering Technology courses
EDD	Engineering Drafting & Design courses
EGR	Engineering Science courses
MET	Mechanical Engineering Technology courses
MFT	Manufacturing Technology courses

Computer-aided Drafting, Basic (717.1)

SOUTH
Certificate

The professional certificate in Basic Computer-aided Drafting is a fast track program designed for the student seeking a career in computer-aided drafting. Graduates may find employment as CAD operators, drafting technicians or engineering aides in technical professions that utilize computer generated engineering drawings and models.

Graduates can also use the credits earned in the certificate program to transfer into existing two-year associate's degree programs in CAD, drafting and engineering technology.

Upon successful completion of the program, the graduate will:

1. Apply the technical skills for employment as a drafter, a CAD drafter or a senior CAD drafter.
2. Follow established technical specifications to prepare engineering drawings.
3. Prepare routine drafting projects derived from layouts and sketches.
4. Create working two-dimensional and three-dimensional CAD drawings for engineering applications.
5. Construct, edit and annotate feature-based parametric models.

Certificate Requirements

First Semester		Credits
EDD-101	Engineering Drawing 1	3
EDD-120	Introduction to Computer-aided Drafting	4
EDD-135	Introduction to Parametric Modeling	3
EDD-150	Introduction to Architectural Modeling	3
		13
Second Semester		
EDD-121	Computer-assisted Drafting Applications	4
SET-105	Technical Computing	3
	Technical Electives ¹	6
		13
Minimum Credits to Graduate		26

¹Technical Electives

CET	Civil Engineering Technology courses
EDD	Engineering Drafting & Design courses
EGR	Engineering Science courses
MET	Mechanical Engineering Technology courses

Electronic Engineering Technology (300.1)

SOUTH
Associate of Science

This program prepares students for employment as an electronics technician upon graduation. The program is also designed to transfer to a four year institution, leading to a BS degree in Electrical and/or Electronics Engineering Technology. The program emphasizes theory and its applications in electronics and basic concepts and skills for entry-level positions. Applications include computers, communication equipment, monitoring devices, product evaluation and testing.

Upon successful completion of the program, the graduate will:

1. Employ electronic vocabulary to communicate with the manufacturing community.
2. Apply industry standard software in analyzing electronic circuits.
3. Use electronic concepts in troubleshooting and designing electronic circuits.
4. Employ teamwork and leadership best practice in a laboratory environment.
5. Apply the principles of critical thinking and problem solving in the development of technical documents and engineering reports.

Degree Requirements

First Semester		Credits
EET-103	Introduction to Electronics	3
EGR-100	Engineering Seminar	1
ENG-101	English Composition 1	3
MAT-114	Mathematics for the Technologies 1	4
PHY-113	Technical Physics 1	3
SET-105	Technical Computing	3
		17
Second Semester		
MAT-116	Mathematics for the Technologies 2	4
MIT-110	Electrical Engineering Circuits 1	4
MIT-208	Digital Electronics	3
PHY-114	Technical Physics 2	3
	Humanities Elective	3
		17

(continued)

Electronic Engineering Technology (300.1) (continued)

Third Semester

EET-130	Introduction to Telecommunications	4
EET-201	Electronics 1	4
ENG-103	Technical Communications	3
MIT-107	Electronic Fabrication	3
MIT-210	Electrical Engineering Circuits 2	4
		18

Fourth Semester

EET-202	Electronics 2	4
EET-240	Electrical Power & Motors	4
MIT-240	Scientific & Industrial Instrumentation	3
	Social Science Elective	3
	Technical Elective ¹	<u>3-4</u>
		17-18

Minimum Credits to Graduate 69-70

¹ Technical Electives		
MIT-103	Fundamentals of Microprocessors	3
MIT-104	Introduction to Microcontrollers	3
RBT-225	Robotics Control Systems	4
RBT-235	Programmable Logic Controllers	4

Electronics, Basic (299.2)

SOUTH
Certificate

This program prepares students for an entry-level position in the field of electronics by providing a basic understanding of concepts, terminology and common tools and instruments used in electronics. The program features a balance between theory and practical applications through both computer simulation and real world circuitry.

Upon successful completion of the program, the graduate will:

1. Apply skills for employment as an electronic technician, assembler or service representative.
2. Employ electronic vocabulary to communicate with the manufacturing community.
3. Apply industry standard software in analyzing electronic circuits.
4. Use electronic concepts in troubleshooting and designing electronic circuits.

Upon completion of this program, graduates may seek employment in the areas of technical sales or component and unit testing with titles such as assembler, technician or engineering assistant.

Certificate Requirements

First Semester		Credits
EET-103	Introduction to Electronics	3
EGR-100	Engineering Seminar	1
MIT-107	Electronic Fabrication	3
SET-100	Introduction to Engineering Technology	3
SET-105	Technical Computing	<u>3</u>
		13
Second Semester		
EET-201	Electronics 1	4
EET-213	Electronic Instruments	4
MIT-103	Fundamentals of Microprocessors	3
MIT-208	Digital Electronics	<u>3</u>
		14
Minimum Credits to Graduate		27

Engineering Science (093.1)

NORTH, SOUTH

Associate of Science

This program prepares the student for transfer to a four-year institution by providing them with a broad college background and skill and knowledge in engineering science. Graduates may earn a bachelor's degree in any field of engineering by transferring.

Upon successful completion of the program, the graduate will:

1. Analyze and interpret quantitative data using mathematical/scientific concepts in engineering applications.
2. Consider the influence of content and assumptions and recognize the implications and consequences of each
3. Solve engineering equations through the use of content-specific tools, software and simulations.
4. Apply the principles of critical thinking and problem solving in the development of technical documents and engineering reports.
5. Evaluate information sources and content in engineering problem solving using a critical method.
6. Describe the interrelationships of culture and society in their global environment.

Degree Requirements

First Semester

	Credits
EGR-100 Engineering Seminar	1
ENG-101 English Composition 1	3
MAT-201 Calculus 1	4
General Electives ¹ (2)	<u>6</u>
	14

Second Semester

ENG-102 English Composition 2	3
MAT-202 Calculus 2	4
PHY-221 Physics for Science & Engineering 1	4
Computer & Information Technology Elective	3–4
Restricted Elective ²	<u>3</u>
	17–18

Third Semester

MAT-250 Calculus 3	4
PHY-222 Physics for Science & Engineering 2	4
Humanities Elective	3
Restricted Electives ² (2)	<u>6–8</u>
	17–19

Fourth Semester

MAT-251 Differential Equations	3
PHY-223 Physics for Science & Engineering	3 4
Restricted Electives ² (2)	6–8
Social Science Elective	<u>3</u>
	16–18

Minimum Credits to Graduate:

64–69

¹General Electives: *College Reading 2 (DVS-101)*, *Advanced College Reading/Study Skills (DVS-103)* and *Basic Principles Composition (ENG-100)* cannot be used as general electives.

²Restricted Electives: A minimum of 15 credits or five (5) courses chosen from those listed to reflect field of interest and transfer requirements. Electives should be selected in consultation with a transfer counselor.

CHM-151 General Chemistry 1	4
CHM-152 General Chemistry 2	4
CHM-201 Organic Chemistry 1	4
CHM-202 Organic Chemistry 2	4
CIT-145 Programming in C	3
CIT-245 Data Structures & Programming: C++	4
EDD-120 Introduction to Computer-aided Drafting	4
EDD-135 Introduction to Parametric Modeling	3
EGR-110 Engineering Surveying	4
MAT-253 Linear Algebra	3
MET-150 Statics	4
MET-211 Strength of Materials	4
PHY-224 Modern Physics	3

Engineering Technology (094.1)

SOUTH

Associate of Science

The Engineering technology program prepares students for transfer to four-year institutions. In this transfer program, students focus on engineering applications and implementation, utilizing algebraic and trigonometry-based mathematical concepts. Students may choose electives which will follow either civil, electrical or mechanical engineering technology subject areas. Students should seek approval of course choices from their transfer school.

Upon successful completion of the program, the graduate will:

1. Interpret quantitative data using mathematical and scientific concepts in engineering applications.
2. Recognize the implications and consequences of content and assumptions in solving engineering technology projects.
3. Solve engineering equations through the use of content-specific tools, software and simulations.
4. Apply the principles of critical thinking and problem solving in the development of technical documents and engineering reports.
5. Evaluate information sources and content in engineering problem solving using critical methods.
6. Describe the interrelationships of culture and society in global environments.

Students must choose one of the following fields of study:

- A: Civil Engineering Technology,
- B: Electrical Engineering Technology or
- C: Mechanical Engineering Technology.

(A) Civil Engineering Technology

Degree Requirements

Civil engineers design, construct, supervise, operate and maintain large construction projects and systems, including roads, buildings, airports, tunnels, dams, bridges and systems for water supply and sewage treatment. Civil engineering technicians assist civil engineers.

First Semester		Credits
EGR-100	Engineering Seminar	1
ENG-101	English Composition 1	3
MAT-201	Calculus 1	4
PHY-141	Physics 1	4
SET-105	Technical Computing	<u>3</u>
		15
Second Semester		
CET-215	Site Plan Development	4
EDD-101	Engineering Drawing 1	3
EDD-120	Introduction to Computer-Aided Drafting	4
PHY-142	Physics 2	4
	Social Science Elective	<u>3</u>
		18
Third Semester		
CET-201	Materials of Construction	4
EGR-110	Engineering Surveying	4
MAT-202	Calculus 2	4
MET-150	Statics	<u>4</u>
		16
Fourth Semester		
CET-202	Soils in Construction	4
ENG-102	English Composition 2	3
MET-211	Strength of Materials	4
	Humanities Elective	<u>3</u>
		14
Minimum Credits to Graduate		63

(continued)

Engineering Technology (094.1) (Continued) (B) Electrical Engineering Technology

Degree Requirements

Electrical engineers design, develop, test and supervise the manufacturing of electrical equipment, such as electric motors, radar and navigation systems, communications systems and power generation equipment. Electrical engineering technicians assist electrical engineers.

First Semester		Credits
EET-103	Introduction to Electronics	3
EGR-100	Engineering Seminar	1
ENG-101	English Composition 1	3
MAT-201	Calculus 1	4
PHY-141	Physics 1	4
		15
Second Semester		
EET-201	Electronics 1	4
MIT-103	Fundamentals of Microprocessors	3
MIT-110	Electrical Engineering Circuits 1	4
MIT-208	Digital Electronics	3
PHY-142	Physics 2	4
		18
Third Semester		
EET-202	Electronics 2	4
MAT-202	Calculus 2	4
MET-150	Statics	4
MIT-210	Electrical Engineering Circuits 2	4
		16
Fourth Semester		
ENG-102	English Composition 2	3
MET-211	Strength of Materials	4
MIT-104	Introduction to Microcontrollers	3
	Humanities Elective	3
	Social Science Elective	3
		16
Minimum Credits to Graduate:		65

(C) Mechanical Engineering Technology

Degree Requirements

Mechanical engineers design, develop, build and test mechanical and thermal devices, including tools, engines and machines. Mechanical engineering technicians assist mechanical engineers.

First Semester		Credits
EGR-100	Engineering Seminar	1
ENG-101	English Composition 1	3
MAT-201	Calculus 1	4
MET-106	Geometric Dimensioning & Tolerancing	1
PHY-141	Physics 1	4
SET-105	Technical Computing	3
		16
Second Semester		
EDD-101	Engineering Drawing 1	3
EDD-120	Introduction to Computer-aided Drafting	4
MET-112	Engineering Materials	4
PHY-142	Physics 2	4
	Social Science Elective	3
		18
Third Semester		
EDD-135	Parametric Modeling	3
MAT-202	Calculus 2	4
MET-150	Statics	4
MET-170	Fluid Power	4
		15
Fourth Semester		
EDD-221	Parametric Modeling 2	3
EET-103	Introduction to Electronics	3
ENG-102	English Composition 2	3
MET-211	Strength of Materials	4
	Humanities Elective	3
		16
Minimum Credits to Graduate:		65

Green & Sustainable Building Design (490)

NORTH, SOUTH
Certificate

This program prepares the student to work in the new green economy and to educate community members in resource conservation, alternative energy options and sustainable home design. This certificate is designed for both current building industry professionals and new home and business owners. Students are taught design and construction processes with the integration of sustainability from conception and planning to design, site selection and construction. Sustainability is interwoven into all aspects of every course.

Upon successful completion of the program, the graduate will:

1. Discuss the key practices of sustainable buildings.
2. Establish competencies in applying Leadership in Energy and Environmental Design (LEED) and other relevant criteria or established guidelines.
3. Analyze the costs and benefits of incorporating sustainable building measures.
4. Apply relevant Environmental Protection Agency (EPA) and Department of Energy (DOE) laws to design principles.
5. Establish sustainable design goals for project development.

Graduates may seek employment as a green building consultants/analysts or preservation technicians, applying for advancement opportunities in the green field within the building design field.

Degree Requirements

First Semester	Credits
CET-201 Construction Materials	4
MET-130 Introduction to Renewable Energy Systems	4
SET-100 Introduction to Engineering Technology	<u>3</u>
	11
Second Semester	
CET-215 Site Plan Development	4
MET-115 Architectural Systems Design	3
MET-220 Green & Sustainable Buildings	<u>4</u>
	11
Minimum Credits to Graduate:	22

Machine Technician (706.2)

NORTH, SOUTH
Certificate

This program provides training in basic machine skills to gain entry-level positions in the machine and manufacturing industry. The basic machine operations of turning, milling and grinding are covered in specific courses. Students will work in a project-oriented environment with emphasis on precision, quality and development of sound work attitudes and skills. In addition to employment, the program can provide an entry to other fields of manufacturing and engineering technology.

Upon successful completion of the program, the graduate will:

1. Plan and perform safe work habits and techniques in lathe, mill, grinding and computer numerical control operations.
2. Evaluate the selection and use of materials for machining applications.
3. Identify parts, operations and applications of tools used in machining production techniques.
4. Set up and calculate basic shop mathematics problems.
5. Use industry handbooks and calculator to calculate speeds and feeds.

Upon graduation, a basic machine technician may seek employment in machine shops, assembly and fabrication.

Certificate Requirements

First Semester	Credits
MET-112 Engineering Materials	4
MFT-107 Blueprint Reading for Machinist	3
MFT-141 Introduction to Machining	<u>3</u>
	10
Second Semester	
MFT-110 Job Search Strategies for the Manufacturing Industry	1
MFT-143 Introduction to Lathe Operations	3
MFT-145 Introduction Mill Operations	<u>3</u>
	7
Third Semester	
MFT-147 Introduction to Grinding Operations	3
MFT-149 Introduction to Computer Numerical Control	<u>3</u>
	6
Minimum Credits to Graduate	23

Manufacturing Technology (705.5)

SOUTH

Associate of Science

This program provides students with high-level technology manufacturing skills important to the local industrial community in the areas of robotic controls, machining, welding, nanofabrication or precision fabrication. Manufacturing processes, control systems, measurement theory and quality are areas within the advanced manufacturing field in which students will be involved. Manufacturing courses will focus on projects involving real-world industry problems to be solved in the laboratories and shops of the College, emphasizing teamwork.

Upon successful completion of the program, the graduate will:

1. Use parametric modeling software to prepare 3-D models and annotated engineering drawings for analysis for design and manufacturing issues.
2. Employ appropriate computer-based tools to manufacture large-scale advanced manufactured structures.
3. Prepare written lab reports and proposals using the standards set forward in the course style manual.
4. Analyze the performance of specific manufacturing equipment with respect to defined automation problems.
5. Analyze and break down a manufacturing problem and develop work cell applications to accomplish an assembly process.
6. Produce parts to a high precision level through the use of robotics, Computer-aided Drafting (CAD) and Computer-aided Manufacturing (CAM) applications.

Upon completion of this program, student may find employment as manufacturer engineers or technicians, mechatronics technicians, CAD specialists, production managers, process control engineering technicians, advance machine tool technicians, project engineers, quality technicians or robotics technicians, depending on their chosen track.

Students must choose one of the following fields of study:

A, B, C or D:

(A) Robotic Controls

This track provides skills in the field of robotics and embedded systems with emphasis on performing installation, set-up, troubleshooting and testing of robotics and related automation.

Degree Requirements

First Semester

	Credits
EDD-135 Introduction to Parametric Modeling	3
EET-103 Introduction to Electronics	3
EGR-100 Engineering Seminar	1
ENG-101 English Composition 1	3
MAT-114 Mathematics for the Technologies 1	4
SET-105 Technical Computing	<u>3</u>
	17

Second Semester

EDD-221 Parametric Modeling 2	3
ENG-103 Technical Communications	3
MAT-116 Mathematics for the Technologies 2	4
MET-112 Engineering Materials	4
MIT-107 Electronic Fabrication	<u>3</u>
	17

Third Semester

MET-106 Geometric Dimensioning & Tolerancing	1
MET-200 Metrology	3
MIT-103 Fundamentals of Microprocessors 3	
PHY-113 Technical Physics 1	3
RBT-235 Programmable Logic Controllers	<u>4</u>
	14

Fourth Semester

MET-170 Fluid Power	4
RBT-225 Robotics Control Systems	4
Humanities Elective	3
Social Science Elective	<u>3</u>
	14

Minimum Credits to Graduate

62

(continued)

Manufacturing Technology (705.5) (continued)

(B) Machining

This track provides skills in basic machining for manufacturing with emphasis on quality, precision measurement and computer-aided drafting. Students enrolled in the *Machine Technician (706.2)* certificate will find this program offers an excellent career ladder with many opportunities for advancement.

Degree Requirements

First Semester	Credits
EET-103 Introduction to Electronics	3
EGR-100 Engineering Seminar	1
ENG-101 English Composition 1	3
MAT-114 Mathematics for the Technologies 1	4
MFT-141 Introduction to Machining	3
SET-105 Technical Computing	<u>3</u>
	17
Second Semester	
EDD-101 Engineering Drawing 1	3
EDD-120 Introduction to CAD	4
MAT-116 Mathematics for the Technologies 2	4
MFT-143 Introduction to Lathe Operations	<u>3</u>
	14
Third Semester	
MET-106 Geometric Dimensioning & Tolerancing	1
MET-200 Metrology	3
MFT-145 Introduction to Mill Operations	3
MFT-147 Introduction to Grinding Operations	3
PHY-113 Technical Physics 1	3
Social Science Elective	<u>3</u>
	16
Fourth Semester	
EDD-135 Introduction to Parametric Modeling	3
ENG-103 Technical Communications	3
MET-112 Engineering Materials	4
MFT-149 Introduction to Computer Numeric Control	3
Humanities Elective	<u>3</u>
	16
Minimum Credits to Graduate	63

(C) Welding

The emphasis of this track is the manufacture of products through the welding process. Welding skills in the basic welding courses will lead to certification exams in welding. Building on basic welding skills the student develops skills in design, measurement and material properties. Students in the *Welding Technology certificate program (317.3)* will find that this program offers an excellent way to move into the industrial technology or engineering technology fields by building and expanding on their existing welding skills.

Degree Requirements

First Semester	Credits
EET-103 Introduction to Electronics	3
EGR-100 Engineering Seminar	1
ENG-101 English Composition 1	3
MAT-114 Mathematics for the Technologies 1	4
SET-105 Technical Computing	3
WLD-101 Welding Fundamentals	<u>3</u>
	17
Second Semester	
EDD-101 Engineering Drawing 1	3
EDD-120 Introduction to CAD	4
MAT-116 Mathematics for the Technologies 2	4
WLD-102 Advanced Welding	<u>3</u>
	14
Third Semester	
MET-106 Geometric Dimensioning & Tolerancing	1
MET-112 Engineering Materials	4
MET-200 Metrology	3
PHY-113 Technical Physics 1	3
WLD-201 Preparation for Welding Certification	3
Social Science Elective	<u>3</u>
	17
Fourth Semester	
EDD-135 Introduction to Parametric Modeling	3
ENG-103 Technical Communications	3
MET-212 Manufacturing Processes	4
WLD-202 MIG & TIG Processes	3
Humanities Elective	<u>3</u>
	16
Minimum Credits to Graduate	64

(Continued)

Manufacturing Technology (705.5) (continued)

(D) Nanofabrication

The emphasis of this track is on building structures that are less than one-millionth of a meter in dimension using photolithography, vapor deposition and gas diffusion to manufacture the transistors and resistors of the modern integrated circuit. Students in this track must spend one semester of intensive study at the Nanofabrication Research Laboratory at Penn State University in State College, PA. Students will learn the skills necessary to work in the clean room environment provided at Penn State. It will be necessary to schedule the term at Penn State in advance to assure that living arrangements and shop space are available. Additional financial aid may be available during the term at the Nanofabrication Laboratory.

Students in the *Nanofabrication Certificate Program (709)* will find that this program will be an excellent way to move into engineering technology fields by building and expanding on their existing nanofabrication skills.

Degree Requirements

First Semester

	Credits
EET-103 Introduction to Electronics	3
EGR-100 Engineering Seminar	1
ENG-101 English Composition 1	3
MAT-114 Mathematics for the Technologies 1	4
SET-105 Technical Computing	<u>3</u>
	14

Second Semester

CHM-109 Introduction to Chemistry	4
ENG-103 Technical Communications	3
MAT-116 Mathematics for the Technologies 2	4
MIT-107 Electronic Fabrication	3
PHY-113 Technical Physics 1	<u>3</u>
	17

Third Semester

MET-106 Geometric Dimensioning & Tolerancing	1
MET-112 Engineering Materials	4
MET-200 Metrology	3
PHY-114 Technical Physics 2	3
Humanities Elective	3
Social Science Elective	<u>3</u>
	17

Fourth Semester

MFT-211 Material Safety & Equipment Overview	3
MFT-212 Basic Nanofabrication Processes	3
MFT-213 Materials in Nanotechnology	3
MFT-214 Lithography for Nanofabrication	3
MFT-215 Materials Modification for Nanofabrication Applications	3
MFT-216 Characterization, Testing of Nanotechnology Structures & Materials	<u>3</u>
	18

Minimum Credits to Graduate

66

Mathematics & Sciences (003)

ALLEGHENY, BOYCE, NORTH, SOUTH
Associate of Science

This university parallel program provides the freshman and sophomore foundations of a baccalaureate mathematics and sciences degree. Students should select specialized courses within their major field of concentration as identified by their transfer college or university. Graduates may earn a bachelor’s degree in the natural sciences or mathematics.

Degree Requirements

First Semester		Credits
ENG-101	English Composition 1	3
	Computer Information Technology	
	Elective	3
	General Elective	3
	Mathematics Elective	3-4
	Science Electives	<u>3-4</u>
		15-17
Second Semester		
ENG-102	English Composition 2	3
	General Elective	3
	Major Field Elective ¹ (1)	3-4
	Mathematics Elective	3-4
	Science Elective	<u>3-4</u>
		15-18
Third Semester		
SPH-101	Oral Communication	3
	Humanities Elective	3
	Major Field Electives ¹ (2)	6-8
	Social Science Elective	<u>3</u>
		15-17
Fourth Semester		
	General Electives	6
	Major Field Electives ¹ (3)	<u>9-12</u>
		15-18
Minimum Credits to Graduate		60-70

¹Concentration in a major field requires a minimum of 18 credits or six courses in the area of the bachelor’s degree or related field of knowledge. These courses must be selected in consultation with the transfer counselor and/or academic advisor.

Mechanical Drafting & Design Technology (276.1)

SOUTH
Associate of Science

This program prepares students for detail, design or layout drafting in manufacturing. Students are skilled in design drafting with both manual and computer-aided techniques. These skills are needed for entry-level positions in the mechanical engineering field, including engineering aide, design draftsman or CAD operator. Students should have reading and mathematics skills at the college level or be prepared to develop these at the college. *SET-100 Introduction to Engineering Technology* will be useful to students developing these skills.

Upon successful completion of the program, the graduate will:

1. Prepare detailed, subassembly and full-assembly engineering drawings of a variety of machinery, mechanical devices and mechanical components using appropriate manual and computer-aided drafting software.
2. Recognize and apply the ASME Y14.5 guidelines in the creating of engineering drawings.
3. Apply and utilize ASME Y14.5 geometric dimensioning and tolerancing guidelines for establishing and maintaining the functional fit of mating parts.
4. Evaluate and solve drawing problems related to mechanical drafting standards frequently used by industrial manufacturers.
5. Apply basic and advanced two-dimensional and three-dimensional CAD commands to produce mechanical drawings.

Degree Requirements

First Semester		Credits
EDD-101	Engineering Drawing 1	3
EDD-120	Introduction to CAD	4
EGR-100	Engineering Seminar	1
MAT-114	Mathematics for the Technologies 1	4
SET-105	Technical Computing	<u>3</u>
		15
Second Semester		
EDD-102	Engineering Drawing 2	3
EDD-121	CAD Applications	4
MAT-116	Mathematics for the Technologies 2	4
MET-112	Engineering Materials	4
PHY-113	Technical Physics 1	<u>3</u>
		18

(continued)

Mechanical Drafting & Design Technology (276.1) (continued)

Third Semester

EDD-135	Introduction to Parametric Modeling	3
EDD-240	Mechanical Drafting	4
ENG-101	English Composition 1	3
MET-106	Geometric Dimensioning/Tolerancing	1
MET-150	Statics	4
	Social Science Elective	3
		18

Fourth Semester

EDD-245	Advanced Engineering Drawing	4
ENG-103	Technical Communications	3
MET-211	Strength of Materials	4
PHY-114	Technical Physics 2	3
	Humanities Elective	3
		17

Minimum Credits to Graduate **68**

Nanotechnology (454)

NORTH, SOUTH

Associate of Science

This CCAC program is in part a Penn State University/National Science Foundation/Pennsylvania State Department of Economic Development supported training program that provides the theory and hands-on training needed for employment as nanotechnologists. The nanotechnology program at CCAC provides students the opportunity to acquire the skills needed for employment in jobs requiring multiple developmental and maintenance competencies necessary for various applications of nano-devices in biology, biotechnology, drug design and delivery, chemistry, physics, environmental science, internet and computer science.

Graduates will enter the job market with the skills necessary for positions in universities, hospitals and research centers as well as the following industries:

- pharmaceuticals/medicine
- biotechnology/biomimetics
- microelectromechanical/medical devices
- optics/photonics
- environmental cleanup
- food/water purification
- agriculture/forestry and environment
- forensics/security/military/defense
- information technology management
- automotive, textiles/cosmetics

Students must spend their fourth semester of intensive study at the Nanofabrication Research Laboratory at Penn State University in State College, PA. CCAC students who meet the program requirements (see program liaison) will pay for the courses at the CCAC tuition rate and may have access to other financial resources for related expenses. Additional financial aid may be available during the term at the Nanofabrication Laboratory. Students may take all 18 credits in one semester or take nine credits over two semesters or six credits over three semesters. Students will receive a certificate from Penn State Center for Nanotechnology Education and Utilization upon successful completion of the six-course, 18-credit capstone semester in nanofabrication.

(continued)

Nanotechnology (454) (continued)

Upon successful completion of the program, graduates will:

1. Describe the fundamental principles of nanotechnology.
2. Design, develop, create and produce nano-devices with varied applications in various fields.
3. Troubleshoot and provide preventive maintenance and reuse of nano-devices.
4. Communicate effectively, both verbally and in writing, using the terminology appropriate to nanotechnology.
5. Apply the leadership and management skills necessary for position as nanotechnician, manager and supervisor of a nanotechnology facility.

Degree Requirements

First Semester

	Credits
CHM-109 Introduction to Chemistry	4
EET-103 Introduction to Electronics	3
ENG-101 English Composition 1	3
MAT-111 College Algebra	3
PHY-113 Technical Physics 1	<u>3</u>
	16

Second Semester

BIO-151 General Biology 1	4
CHM-151 General Chemistry 1	4
ENG-102 English Composition 2	3
MAT-165 Probability & Statistics	4
Humanities Elective	<u>3</u>
	18

Third Semester

BIO-175 Microbiology	4
BIO-216 Cell Biology	3
CIT-100 Computer Fundamentals and Applications	3
EET-213 Electronic Instrumentation	4
Social Science Elective	<u>3</u>
	17

Fourth Semester (At Penn State University)

MFT-211 Material Safety & Equipment Overview	3
MFT-212 Basic Nanofabrication Processes	3
MFT-213 Materials in Nanotechnology	3
MFT-214 Lithography for Nanofabrication	3
MFT-215 Material Modification for Nanofabrication Applications	3
MFT-216 Characterization, Testing of Nanotechnology Structure & Materials	<u>3</u>
	18

Minimum Credits to Graduate

69

Nanofabrication Technology (709)

NORTH, SOUTH

Certificate

This program involves building structures that are less than one millionth of a meter in dimension. Building on a silicon base, the nanofabrication technician uses photolithography, vapor deposition and gas diffusion to manufacture the transistors and resistors of the modern integrated circuit. Students complete their course work at the Nanofabrication Research Laboratory at the Pennsylvania State University in University Park, PA, where they are exposed to state of the art equipment and cleanroom facilities. This program runs only during the spring and summer of Pennsylvania State University's scheduled semesters. Students must complete a separate application for admission.

Upon successful completion of the program, graduates will

1. Describe the fundamental principles of nanotechnology.
2. Design, develop create and produce nano-devices with applications in various fields.
3. Troubleshoot and provide preventive maintenance and reuse of nano-devices.
4. Communicate effectively using the terminology appropriate to nanotechnology.
5. Apply the skills necessary for a position as a nano-technician.

Upon completion of this program, students may seek employment in a variety of industries such as pharmaceuticals, biotechnology, micro-electromechanical devices, opto-electronics, sensors, information storage, power electronics and microelectronics.

Certificate Requirement

First Semester	Credits
Chemistry	3
Physics	<u>3</u>
	6
Second Semester	
MFT-211 Material Safety & Equipment Overview	3
MFT-212 Basic Nanofabrication Processes	3
MFT-213 Materials in Nanotechnology	3
MFT-214 Lithography for Nanofabrication	3
MFT-215 Materials Modification for Nanofabrication Applications	3
MFT-216 Characterization, Testing of Nanotechnology Structures & Materials	<u>3</u>
	18

Minimum Credits to Graduate 24

Physics (047.1)

ALLEGHENY, BOYCE, SOUTH

Associate of Science



This program prepares the student for transfer to a four-year institution with a broad college background and skill and knowledge in physics.

Graduates may earn a bachelor's degree and prepare for graduate training in many scientific fields.

Upon successful completion of the program, the graduate will:

1. Demonstrate qualitative understandings of physical processes in nature by defining terminology correctly and recognizing the concepts involved.
2. Demonstrate quantitative understandings of physical processes in nature by solving theoretical and applied-based problems with the use of proper quantitative methods.
3. Discuss objectively new scientific ideas and concepts.
4. Have an increased awareness of the physics behind phenomenon observed in everyday life, including the connections to other scientific disciplines.
5. Communicate, both verbally and in writing, contemporary experimental findings through acquiring, analyzing and interpreting scientific data.

Degree Requirements

First Semester	Credits
ENG-101 English Composition 1	3
MAT-201 Calculus 1	4
PHY-221 Physics for Science & Engineering 1	4
Humanities Elective	<u>3</u>
	14
Second Semester	
ENG-102 English Composition 2	3
MAT-202 Calculus 2	4
PHY-222 Physics for Science & Engineering 2	4
Restricted CIT Elective ¹	<u>3-4</u>
	14-15

Physics (047.1) (continued)

Third Semester

CHM-151	General Chemistry 1	4
MAT-250	Calculus 3	4
PHY-223	Physics for Science & Engineering 3	4
	Restricted Elective ²	3-4
	Social Sciences Elective	<u>3</u>
		18-19

Fourth Semester

MAT-251	Differential Equations	3
PHY-224	Modern Physics	3
	Restricted Electives ² (3 courses)	<u>9-12</u>
		15-18

Minimum Credits to Graduate **61-66**

Students are to choose their restricted electives based upon joint consultation with a Physics faculty member and a counselor, especially those students using the TAOC program to program transfer.

¹Restricted CIT Elective

CIT-145	Programming in C	3
CIT-161	Visual Basic: Windows Programming	4
CIT-245	Data Structures & Programming in C++	4

²Restricted Electives

BIO-151	General Biology 1	4
CHM-152	General Chemistry 2	4
CIT-111	Introduction to Programming: Java	4
GGY-201	Introduction to Geology	3
GGY-203	Physical Geology	4
MAT-253	Linear Algebra	3
PHS-101	Earth Science	3
PHS-107	Introductory Astronomy	3
PHS-108	Introduction to Weather	3

STUDENT NOTES

Trades Programs

Certificates and degrees in the trades prepare students for employment in a wide range of professions including construction, mechanical and repair technologies, precision production, protective services and transportation.

CCAC encourages students to apply for both certificates and diplomas (where possible) as they work toward an associate's degree requirements. Students should investigate baccalaureate programs as they advance in their chosen careers.

Information on specific courses in a selected academic program can be found at ccac.edu CCAC Central e-Services. That information includes the location, days, times, faculty member and required books and supplies. Note that some courses are only offered during alternate terms. The syllabus (a detailed course description) is available for many courses at <http://webapps.ccac.edu/MasterSyllabi/>



All courses should be chosen with the help of an academic advisor.

- ASEP/ASSET/CAP Manufacturer Automotive Technology (507.3) (Degree)
- Automotive Technology Program (349.3) (Degree)
- Automotive Technology Program (350.3) (Certificate)
- Building Construction Estimating (515.2) (Degree)
- Building Construction Supervision (514.2) (Degree)
- Building Construction Technology (441.1) (Degree)
- Carpentry Apprenticeship (339.1) (Certificate)¹
- Electrical Construction (JATC/IBEW) Technology Apprenticeship (608.1) (Degree)¹
- Electrical Distribution Technology (708.2) (Degree)
- Electrical Distribution Technology (702) (Certificate)
- Facilities Maintenance (384.2) (Degree)
- Facilities Maintenance (383.2) (Certificate)
- Heating & Air Conditioning (313.3) (Degree)
- Heating & Air Conditioning Technology (312.3) (Certificate)
- Heavy Equipment Operating Engineers Apprenticeship (740) (Certificate)¹
- Ironworker Apprenticeship (289.1) (Certificate)¹
- Mechatronics Technology (722) Degree
- Mechatronics Technology (723) Certificate
- Plumber Apprenticeship (389.1) (Certificate)¹
- Plumbing (365.1) (Certificate)
- Sheet Metal Worker Apprenticeship (379) (Degree)¹
- Sheet Metal Worker Apprenticeship (391.1) (Certificate)¹
- Stationary Operating Engineer (731.1) (Degree)
- Stationary Operating Engineer (730.1) (Certificate)
- Welding Technology (316.4) (Degree)
- Welding Technology (317.3) (Certificate)
- Welding, Gas & Oil Certificate (319.1) Certificate

¹*Apprenticeship programs: Apprenticeship programs: Construction Trade Technology training programs are open to all qualifying students. These programs are offered in conjunction with the Joint Apprenticeship committees of the building trades and the Pennsylvania Department of Labor. The Commonwealth of Pennsylvania awards certificates of completion to those who complete one of these apprenticeship programs. Admission is by competitive testing and interviews with a joint Apprenticeship Committee.*

STUDENT NOTES

ASEP/ASSET/CAP Manufacturer Automotive Technology Program (507.3)

NORTH

Associate of Science

This program prepares students to service and repair today's high-tech automobiles. While completing this two-year program, students attend classes for 10 weeks and then work in a co-op environment for 10–12 weeks for five consecutive semesters. This program includes instruction in component identification, removal and reassembly of components, fault diagnosis in automatic transmission and transaxles, brakes, electrical and electronic systems, engine performance, engine repair, heating and air conditioning, manual drive-trains and rear axles, suspension and steering.

Emerging green technologies such as plug-in electrics and natural gas powered vehicles, as well as currently produced hybrids will also be introduced. Academic courses included in the associate's degree program provide students with the necessary background for effective communication and increased opportunities for career advancement.

Upon successful completion of the program, the graduate will:

1. Identify each component and its purpose on all vehicle systems to include: automatic transmissions and transaxles, brakes, electrical and electronic systems, engine performance, engine repair, heating and air conditioning, manual drive-trains and rear axles, steering and suspension.
2. Remove, disassemble and reassemble components and identify potential mechanical fault areas in vehicle control systems.
3. Identify, diagnose and repair electrical faults within electronic vehicle control systems.
4. Name all vehicle systems.
5. Discuss the complaint, cause and correction process.
6. Complete the manufacturers' training requirements.

CCAC's automotive curriculum prepares the student to take tests necessary to earn Pennsylvania Safety and Emission Inspection Licensing and Automotive Service Excellence (ASE) Certification. Course sections will be unique for dealership-sponsored students leading to manufacturers' certification with Chrysler LLC, Ford Motor Company and General Motors Corporation.

Programs are certified by the National Automotive Technicians Educational Foundation (NATEF). All CCAC instructors are ASE Certified Master Technicians with years of industry repair experience and manufacturer-trained automotive technology instructors.

The CCAC–North Campus Automotive program is available at the CCAC–West Hills Center. Credit for some courses may be awarded for work completed at an area career and technology center, trade school or in the military.

Degree Requirements

First Semester		Credits
ATE-103	Automotive Systems Minor Service	3
ATE-106	Emission Inspector Certification	1
ATE-108	State Inspection Certification	1
ATE-126	Suspension & Steering	4
ATE-130	Automotive Brake Systems	<u>3</u>
		12
Second Semester		
ATE-121	Electrical Systems & Power Accessories	3
ATE-122	Electronic Systems	3
ATE-151	Automotive Climate Systems	3
ATE-160	Advanced Automotive Electricity/ Electronics	3
MAT-108	Intermediate Algebra or	4
MAT-191	Mathematics for the Industries	<u>3</u>
		15–16
Summer Semester		
ATE-131	Major Engine Service	4
PHS-161	Physical Science for the Industries	<u>3</u>
		7
Third Semester		
ATE-207	Advanced Engine Performance	4
ATE-230	Engine Performance 1	3
ATE-245	Engine Performance 2	4
ENG-101	English Composition 1	3
SPH-101	Oral Communication	<u>3</u>
		17
Fourth Semester		
ATE-234	Standard Transmission, Transaxle, Drivetrain	3
ATE-235	Automatic Transmissions/Transaxles	5
ENG-102	English Composition 2 or	3
ENG-103	Technical Communications	3
PSY-101	Introduction to Psychology or	3
PSY-116	Organizational Psychology	3
WLD-103	Welding Safety & Applications	<u>1</u>
		15
Minimum Credits to Graduate		66-67

Automotive Technology Program (349.3)

NORTH

Associate of Science

This two-year program prepares students to service and repair today's high-tech automobiles. This program includes instruction in component identification, removal and reassembly of components, and fault diagnosis in automatic transmission and transaxles, brakes, electrical and electronic systems, engine performance, engine repair, heating and air conditioning, manual drive-trains and rear axles, suspension and steering.

Emerging green technologies such as hybrids, plug-in electrics and natural gas powered vehicles will also be introduced. Academic courses included in the associate's degree program provide students with the necessary background for effective communication and increased opportunities for career advancement.

Upon successful completion of the program, the graduate will:

1. Identify each component and its purpose on all vehicle systems to include: automatic transmissions and transaxles, brakes, electrical and electronic systems, engine performance, engine repair, heating and air conditioning, manual drive-trains and rear axles, steering and suspension.
2. Remove, disassemble and reassemble components and identify potential mechanical fault areas in vehicle control systems.
3. Identify, diagnose and repair electrical faults within electronic vehicle control systems.
4. Name all vehicle systems.
5. Discuss the complaint, cause and correction process.
6. Conduct effective communication with customers, suppliers and business associates in the automotive aftermarket repair industry.

CCAC's automotive curriculum prepares the student to take tests necessary to earn Pennsylvania Safety and Emission Inspection Licensing and Automotive Service Excellence (ASE) Certification. Some course sections may be manufacturer specific.

All CCAC instructors are ASE Certified Master Technicians with years of industry experience and manufacturer-trained automotive technology instructors.

The CCAC–North Campus Automotive program is available at the CCAC–West Hills Center. Credit for some courses may be awarded for work completed at an area career and technology center, trade school or in the military.

Degree Requirements

First Semester		Credits
ATE-103	Automotive Systems Minor Service	3
ATE-106	Emission Inspector Certification	1
ATE-108	State Inspection Certification	1
ATE-126	Suspension & Steering	4
ATE-130	Automotive Brake Systems	<u>3</u>
		12
Second Semester		
ATE-121	Electrical Systems & Power Accessories	3
ATE-122	Electronic Systems	3
ATE-151	Automotive Climate Systems	3
ATE-160	Advanced Automotive Electricity/ Electronics	3
MAT-108	Intermediate Algebra or	4
MAT-191	Mathematics for the Industries	<u>3</u>
		15–16
Summer Semester		
ATE-131	Major Engine Service	4
ATE-401	Automotive Co-Op	1
PHS-161	Physical Science for the Industries	<u>3</u>
		8
Third Semester		
ATE-207	Advanced Engine Performance	4
ATE-230	Engine Performance 1	3
ATE-245	Engine Performance 2	4
ENG-101	English Composition 1	3
SPH-101	Oral Communication	<u>3</u>
		17
Fourth Semester		
ATE-234	Standard Transmission, Transaxle, Drivetrain	3
ATE-235	Automatic Transmissions/Transaxles	5
ATE-401	Automotive Co-Op	1
ENG-102	English Composition 2 or	3
ENG-103	Technical Communications	3
PSY-101	Introduction to Psychology or	3
PSY-116	Organizational Psychology	3
WLD-103	Welding Safety & Applications	<u>1</u>
		16
Minimum Credits to Graduate		68-69

Automotive Technology Program (350.3)

NORTH
Certificate

This program prepares students to service and repair today's high-tech automobiles. Instruction includes component identification, removal and reassembly of components, fault diagnosis in automatic transmission and transaxles, brakes, electrical and electronic systems, engine performance, engine repair, heating and air conditioning, manual drive-trains and rear axles, suspension and steering. Emerging green technologies such as hybrids, plug-in electrics and natural gas powered vehicles will also be introduced.

Upon successful completion of the program, the graduate will:

1. Identify each component and its purpose on all vehicle systems to include: automatic transmissions and transaxles, brakes, electrical and electronic systems, engine performance, engine repair, heating and air conditioning, manual drive-trains and rear axles, steering and suspension.
2. Remove, disassemble and reassemble components and identify potential mechanical fault areas in vehicle control systems.
3. Identify, diagnose and repair electrical faults within electronic vehicle control systems.
4. Name all vehicle systems.
5. Discuss the complaint, cause and correction process.

CCAC's automotive curriculum prepares the student to take tests necessary to earn Pennsylvania Safety and Emission Inspection Licensing and ASE (Automotive Service Excellence) Certification. Some course sections may be manufacturer specific and may lead to manufacturers' certification.

All CCAC instructors are ASE Certified Master Technicians with years of industry repair experience and as manufacturer-trained automotive technology instructors.

The CCAC–North Campus Automotive program is available at the CCAC–West Hills Center. Credit for some courses may be awarded for work completed at an area career and technology center, trade school or in the military.

First Semester		Credits
ATE-103	Automotive Systems Minor Service	3
ATE-106	Emission Inspector Certification	1
ATE-108	State Inspection Certification	1
ATE-126	Suspension & Steering	4
ATE-130	Automotive Brake Systems	<u>3</u>
		12
Second Semester		
ATE-121	Electrical Systems & Power Accessories	3
ATE-122	Electronic Systems	3
ATE-151	Automotive Climate Systems	3
ATE-160	Advanced Automotive Electricity/ Electronics	<u>3</u>
		12
Summer Semester		
ATE-131	Major Engine Service	4
ATE-401	Automotive Co-Op	<u>1</u>
		5
Third Semester		
ATE-207	Advanced Engine Performance	4
ATE-230	Engine Performance 1	3
ATE-245	Engine Performance 2	4
ATE-401	Automotive Co-Op	<u>1</u>
		12
Fourth Semester		
ATE-234	Standard Transmission, Transaxle, Drivetrain	3
ATE-235	Automatic Transmissions/Transaxles	5
WLD-103	Welding Safety & Applications	<u>1</u>
		9
Minimum Credits to Graduate		50

Building Construction Estimating (515.2)

NORTH

Associate of Science

This program is offered in conjunction with the Joint Apprenticeship Committees of the building trades and the Pennsylvania Department of Labor.

Applicants must have earned a Journeyman Certificate in one of the trade technologies. Pennsylvania awards Journeyman Certificates to graduates of apprenticeship certificate programs.

This program will prepare the journeyman for advancement in the building construction industry. Students will study the phases of a building construction project to develop an overview and understanding of the building construction industry. Coursework focuses on commercial construction applications and evolving green technology. Classes are scheduled for evenings and weekends allowing students to work full time at their trade while obtaining a degree.

Upon successful completion of the program, the graduate will:

1. Apply the skills for employment as a foreman, superintendent, estimator, expeditor, scheduler and project manager in employment areas with building construction companies, material suppliers, service providers and subcontractors.
2. Read blueprints and delineate job site layout.
3. Analyze and utilize building construction projects and materials; estimate and quote building construction projects.
4. Plan work flow and control scheduling sequence of construction projects.
5. Apply leadership, communication and problem-solving techniques.

Degree Requirements

First Semester	Credits
BLC-294 Construction Estimating 1	3
MAT-191 Mathematics for the Industries	<u>3</u>
	6
Second Semester	
BLC-121 Construction Materials & Methods	3
BLC-295 Construction Estimating 2	<u>3</u>
	6
Third Semester	
BLC-103 Construction Planning & Control	3
BLC-296 Advanced Computer Estimating	<u>3</u>
	6
Fourth Semester	
ENG-101 English Composition 1	3
PHS-161 Physical Science for the Industry	<u>3</u>
	6
Fifth Semester	
ENG-103 Technical Communications	3
PSY-116 Organizational Psychology	<u>3</u>
	6
Sixth Semester	
BUS-101 Introduction to Business	3
SPH-101 Oral Communication	<u>3</u>
	6
Construction Trade Technology Apprenticeship	28–45
Minimum Credits to Graduate	64–81

Building Construction Supervision (514.2)

NORTH
Associate of Science

This program is offered in conjunction with the Joint Apprenticeship Committees of the building trades and the Pennsylvania Department of Labor. Applicants must have earned a Journeyman Certificate in one of the trade technologies. Pennsylvania awards Journeyman Certificates to graduates of apprenticeship certificate programs.

This program will prepare the journeyman for advancement in the building construction industry. Students will study the phases of a building construction project to develop an overview and understanding of the building construction industry. Coursework focuses on commercial construction applications and evolving green technology. Classes are scheduled for evenings and weekends allowing students to work full time at their trade while obtaining a degree.

Upon successful completion of the program, the graduate will:

1. Apply the skills for employment as a construction foreman, job site superintendent, expediter, scheduler or as a project manager in employment areas such as building construction companies, material suppliers, service providers and subcontractors.
2. Read and delineate blue prints.
3. Perform job site layout tasks.
4. Navigate a construction site from ground breaking to completion.
5. Plan work flow and control scheduling sequence of construction projects.
6. Apply leadership, communication and problem-solving techniques in building construction projects.

Degree Requirements

First Semester		Credits
BLC-191	Construction Industry Supervision	3
MAT-191	Mathematics for the Industries	<u>3</u>
		6
Second Semester		
BLC-192	Construction Contracting	3
BLC-203	Surveying	<u>3</u>
		6
Third Semester		
BLC-103	Construction Planning & Control	3
BLC-294	Estimating 1	<u>3</u>
		6
Fourth Semester		
ENG-101	English Composition 1	3
PHS-161	Physical Science for the Industries	<u>3</u>
		6
Fifth Semester		
ENG-103	Technical Communication	3
PSY-116	Organizational Psychology	<u>3</u>
		6
Sixth Semester		
BUS-101	Introduction to Business	3
SPH-101	Oral Communication	<u>3</u>
		6
	Construction Trade Technology Apprenticeship	28–45
Minimum Credits to Graduate		64–81

Building Construction Technology (441.1)

NORTH

Associate of Science

This program is designed to prepare students who have work experience in building construction for advancement to positions of management. Students will study the numerous building construction phases to develop an overview and understanding of the building construction industry. Coursework focuses on commercial construction applications and evolving green technology. Classes are scheduled in the evenings and weekends to allow students an opportunity to work in the building construction field while obtaining their degree.

Upon successful completion of the program, the graduate will:

1. Apply skills for employment as a foreman, superintendent, estimator, expeditor, scheduler and project manager in employment with building construction.
2. Read blue prints and carry out job-site layout tasks.
3. Navigate a construction site from ground breaking to completion.
4. Analyze and utilize building construction materials and methods.
5. Estimate and quote building construction projects.
6. Plan work flow and control scheduling sequence of construction projects.
7. Apply leadership, communication and problem-solving techniques.

Degree Requirements

First Semester

	Credits
BLC-103 Construction Planning Control	3
BLC-191 Construction Industry Supervision	3
BLC-294 Construction Estimating 1	3
EDD-100 Blueprint Reading	3
MAT-191 Mathematics for the Industries	<u>3</u>
	15

Second Semester

BLC-121 Construction Materials & Methods	3
BLC-192 Construction Contracting	3
BLC-203 Surveying	4
BLC-295 Construction Estimating 2	3
Computer Information Technology Elective	<u>3</u>
	16

Third Semester

BLC-296 Advanced Computer Estimating	3
BUS-101 Introduction to Business	3
ENG-101 English Composition 1	3
PHS-161 Physical Science for the Industries	3
SPH-101 Oral Communication	<u>3</u>
	15

Fourth Semester

ENG-103 Technical Communications	3
PSY-116 Organizational Psychology	3
Business Elective	3
General Electives	<u>6</u>
	15

Minimum Credits to Graduate

61

Carpentry Apprenticeship (339.1)

NORTH
Certificate

The Carpentry Apprenticeship program is a four-year certificate program offering qualifying applicants, occupational training under the sponsorship of the local Joint Apprenticeship Committee of the Building Trades and the Pennsylvania Department of Labor. The training prepares students to work in commercial building construction as skilled carpenters. Students may apply the 28 academic credits of the program towards an associate’s degree in Building Construction Estimating or Supervision.

Upon successful completion of this program, graduates will:

1. Apply safety standards in all aspects of the carpentry trade as defined by and governed by the Occupational Safety and Health Administration (OSHA) and the Joint Apprenticeship Committee of the Building Trades and the Pennsylvania Department of Labor.
2. Demonstrate manipulative skills in carpentry construction including deck, roof systems, hardware and framing.
3. Operate a wide range of hand, power and air tools and instrumentation.
4. Interpret structural blueprints and construct building systems.
5. Estimate quantities and costs of items in commercial construction, including the utilization of green materials.
6. Communicate effectively using terminology appropriate to the trade and a diverse environment.

Construction trade technology training programs are open to all qualifying students. However, admission is by competitive testing and interviews are with the Joint Apprenticeship committee. Applicants must meet specific admission requirements which include: pre-admission exam, criminal history records checks, child abuse clearances, drug screen and fingerprinting.

The program is held at the Carpentry Apprenticeship training site located at 652 Ridge Road, Pittsburgh, PA. Upon successful completion of the program, including the job experience hours required by the Bureau of Apprenticeship and Training, the State of Pennsylvania awards Journeyman working papers to those who complete the apprenticeship program.

Certificate Requirements

First Year		Credits
CAR-101	Carpentry 1	6
CAR-105	Carpentry Drafting & Blueprint Reading 1	2
CAR-115	Mathematics for Carpenters 1	3
		11
Second Year		
CAR-102	Carpentry 2	6
CAR-106	Carpentry Drafting & Blueprint Reading 2	2
CAR-116	Mathematics for Carpenters 2	3
		11
Third Year		
CAR-201	Carpentry 3	6
CAR-205	Carpentry Drafting & Blueprint Reading 3	2
CAR-215	Mathematics for Carpenters 3	2
		10
Fourth Year		
CAR-202	Carpentry 4	6
CAR-206	Carpentry Drafting & Blueprint Reading 4	2
CAR-216	Mathematics for Carpenters 4	2
		10
Minimum Credits to Graduate		42

Electrical Construction (JATC/IBEW) Technology (608.1)

ALLEGHENY

Associate of Science

This five-year Associate of Science program offers qualifying applicants occupational education under sponsorship of the Joint Apprenticeship and Training Committee (JATC) of the International Brotherhood of Electrical Workers (IBEW Local #5).

Enrollment is limited. Applicants must have successfully completed a minimum of one year of high school algebra or *MAT-090 Elementary Algebra* (or its equivalent). This program is offered in conjunction with the JATC/IBEW.

Students will have classroom, hands-on and on-the job experiences in journeyman wireman electrical work. Upon completion of the curriculum and the job experience hours required by the Bureau of Apprenticeship and Training, the students are eligible to take the IBEW Journeyman wireman examination. The National JATC, IBEW, National Electrical Contractors Association (NECA) and the Pennsylvania Department of Labor issue certificates of completion to those who successfully complete this apprenticeship program and pass the examination. This certificate allows a graduate to work in residential, commercial and industrial construction as skilled journeyman wireman and in all aspects of the electrical and teledata industry.

Admission is by application, competitive testing and interview with the JATC/IBEW and the NECA. Students must make application through the JATC by calling 412.432.1145.

Upon successful completion of the program, the graduate will:

1. Integrate electrical systems installations consistent with architectural considerations.
2. Solve complex problems through use of decision making, critical thinking.
3. Make correlations between basic scientific information about the nature of matter as it relates to understanding electrical theory.
4. Recognize positive and negative logic using appropriate methods.
5. Demonstrate skills and knowledge needed to work in residential, industrial and commercial construction and teledata industry.
6. Sit for the IBEW Journeyman Wireman Certification examination.

Students must choose one of the following fields of study, A or B:

(A) Track

Degree Requirements

First Year		Credits
ECT-101	Electrical Construction Technology 1	8
ENG-101	English Composition 1	3
MAT-108	Intermediate Algebra	4
		15

Second Year

ECT-151	Electrical Construction Technology 2	8
ENG-102	English Composition 2 or	3
ENG-103	Technical Communications	3
PHY-100	Basic Physics	4
		15

Third Year

CIT-100	Computer Fundamentals & Applications or Computer Information Technology Elective	3 3–4
ECT-201	Advanced Electrical Construction Technology 1	8
PSY-116	Organizational Psychology	3
		14–15

Fourth Year

ECT-251	Advanced Electrical Construction Technology 2	8
SPH-101	Oral Communication	3
		11

Fifth Year

ECT-291	Instrumentation & Testing for Electrical Construction Technology	8 8
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Minimum Credits to Graduate **63–64**

(continued)

Electrical Construction (JATC/IBEW) Technology (608.1) (Continued)

(B) Track

Degree Requirements

First Year Credits

ECT-101	Electrical Construction Technology 1	8
ENG-111	Technical English	3
MAT-191	Mathematics for the Industries	3
		14

Second Year

ECT-151	Electrical Construction Technology 2	8
ENG-103	Technical Communications	3
PHS-161	Physical Science for the Industries	3
		14

Third Year

CIT-100	Computer Fundamentals & Applications or Computer Information Technology Elective	3
ECT-201	Advanced Electrical Construction Technology 1	3–4
PSY-116	Organizational Psychology	8
		3
		14–15

Fourth Year

ECT-251	Advanced Electrical Construction Technology 2	8
SPH-101	Oral Communication	3
		11

Fifth Year

ECT-291	Instrumentation & Testing for Electrical Construction Technology	8
		8

Minimum Credits to Graduate 61–62

Electrical Distribution Technology (708.2)

NORTH

Associate of Science

The Electrical Distribution Technology program is an Associate of Science degree program that prepares students for an entry-level position in the electrical utility industry. Students will work as maintenance/installation technicians on electrical distribution systems and electrical substations. Graduates of the program will have had classroom, hands-on and on-the-job training in the electric utility industry that meets the requirements for an entry level position.

Upon successful completion of the program, the graduate will:

1. Install and maintain primary and secondary phase conductors for both residential and commercial consumers.
2. Develop skills for troubleshooting and repairing electrical distribution systems.
3. Identify State and Federal regulations, including safety procedures, in the electrical distribution industry.
4. Apply safety procedures in all aspects of electrical distribution systems.
5. Communicate effectively and appropriately with management and a diverse customer base.

To graduate in the Electrical Distribution Technology program, students must obtain a commercial driver's license. Drug screening is required to comply with job safety standards.

The Electrical Distribution Technology program is open to all students meeting program admission criteria. The program, developed with Duquesne Light, is scheduled based on industry need. Applicants must attend an orientation session and successfully complete a forty (40) hour basic wood pole climbing course prior to enrollment into the certificate program.

Students must complete the certificate in Electrical Distribution Technology program and take an additional 25 credits to obtain an associate's degree.

(continued)

Electrical Distribution Technology (708.2) (continued)

Degree Requirements

First Semester		Credits
EDT-103	Overhead Lineworker Maintenance 1	5
EDT-105	Overhead Lineworker Maintenance 2	5
EDT-107	Compliance & Safety Training	3
EDT-109	Basic Electricity	3
		<u>16</u>
Second Semester		
EDT-203	Overhead Lineworker Maintenance 3	4
EDT-204	Underground System Maintenance	3
EDT-205	Basic Substation Maintenance	3
EDT-206	Meter Training	3
EDT-207	AC Power	3
		<u>16</u>
Summer Session		
EDT-220	Summer Internship	3
		<u>3</u>
Third Semester		
CIT-115	Introduction to Information Technology	3
ENG-101	English Composition 1	3
MAT-191	Mathematics for the Industries	3
SPH-101	Oral Communication	3
		<u>12</u>
Fourth Semester		
ENG-103	Technical Communications	3
PHY-100	Basic Physics	4
PSY-116	Organizational Psychology	3
	General Elective	3
		<u>13</u>
Minimum Credits to Graduate		60

Electrical Distribution Technology (702)

NORTH
Certificate

The Electrical Distribution Technology program is intended to prepare students for entry-level positions in the electrical utility industry as maintenance/installation technicians on electrical distribution systems. The 10 technical courses will provide hands-on and on-the-job training in the electrical utility industry that meet the requirements for an entry-level position.

Upon successful completion of the program, the graduate will:

1. Install and maintain primary and secondary phase conductors for both residential and commercial consumers.
2. Develop skills for troubleshooting and repairing electrical distribution systems.
3. Identify State and Federal regulations, including safety procedures, in the electrical distribution industry.
4. Apply safety procedures in all aspects of electrical distribution systems.
5. Communicate effectively in a team environment.

To graduate in the Electrical Distribution Technology program, students must obtain a commercial driver's license. Drug screening is required to comply with job safety standards.

The Electrical Distribution Technology program is open to all students. The program is, however, only scheduled based on industry need and capped with limited enrollment. Prior to registering for the CCAC program, students must be accepted by Duquesne Light. Selected Duquesne Light applicants must attend an orientation session and successfully complete a forty (40) hour basic wood pole climbing course prior to admittance into the program.

(continued)

Electrical Distribution Technology (702) (continued)

Certificate Requirements

First Semester		Credits
EDT-103	Overhead Lineworker Maintenance 1	5
EDT-105	Overhead Lineworker Maintenance 2	5
EDT-107	Compliance & Safety Training	3
EDT-109	Basic Electricity	3
		16
Summer		
EDT-220	Summer Internship	3
Second Semester		
EDT-203	Overhead Lineworker Maintenance 3	4
EDT-204	Underground System Maintenance	3
EDT-205	Basic Substation Maintenance	3
EDT-206	Meter Training	3
EDT-207	AC Power	3
		16
Minimum Credits to Graduate:		35

Facilities Maintenance Technology (384.2)

NORTH

Associate of Science

This is a versatile degree program designed to offer students an opportunity to learn and develop skills in facility maintenance. The program provides a balance of academic and technical education intended to support a student's career advancement. Students may customize their facility maintenance education through a selection of restricted electives.

Upon successful completion of the program, the graduate will:

1. Recognize and maintain various mechanical systems and assess mechanical strengths and weaknesses in a facility.
2. Identify, maintain, diagnose and repair heating and air conditioning systems and plumbing fixture problems.
3. Install, diagnose, repair and maintain basic electrical fixtures.
4. Apply safety procedures when using maintenance tools.
5. Evaluate green or sustainable technologies.
6. Communicate effectively and appropriately with management and a diverse customer base regarding technical systems.

Credits may be articulated for courses completed in high school career and technology programs. Upon completion of this program, graduates may be employed as facility and building maintenance technicians and foremen, supervisors, field service technicians, stationary engineers, plant mechanical maintenance technicians and managers or directors depending on experience level.

Degree Requirements

First Semester		Credits
HAC-101	Basic Electrical Wiring	5
HAC-201	Heating Systems	5
HAC-202	Air Conditioning Systems	5
		15

(continued)

Facilities Maintenance Technology (384.2) (continued)

Second Semester

MMT-130	Job Safety & First Aid or	1
MMT-131	Introduction to OSHA and Industrial Hygiene	1
PLT-204	Plumbing Maintenance	4
WLD-221	Brazing & Welding	3
	Restricted Electives ^{1,2}	<u>7-9</u>
		15-17

Third Semester

ENG-101	English Composition 1	3
MAT-191	Mathematics for the Industries	3
SPH-201	Oral Communications	3
	Restricted Electives ^{1,2}	<u>6-8</u>
		15-17

Fourth Semester

ENG-102	English Composition 2 or	3
ENG-103	Technical Communications	3
PHS-161	Physical Science for the Industries	3
PSY-101	Introduction to Psychology or	3
PSY-116	Organizational Psychology	3
	Restricted Electives ^{1,2}	<u>6-8</u>
		15-17

Minimum Credits to Graduate 60-66

¹Restricted Electives

EDD-100	Blueprint Reading	3
EET-179	Electrical Power Distribution	3
EET-201	Electronics 1	4
EET-245	Electrical Motor Control	3
HAC-107	EPA Refrigeration Certification Preparation	1
HAC-108	Industry Competency Exam preparation	1
HAC-203	Estimating Thermal Loads	4
HAC-204	Duct & Hydronic System Design	4
HAC-221	Heating/Air Conditioning Circuits & Control	4
HAC-222	Pneumatic Controls	3
HAC-224	HVAC Installation	3
HAC-225	Planned Maintenance	3
MET-170	Fluid Power Systems	4
MET-181	Mechanical Systems	3
MET-220	Green/Sustainable Buildings	3
MIT-107	Electronic Fabrication	3
MIT-208	Digital Electronics	3
MMT-208	Backflow Tester Certification.	3
PLT-100	Introduction to Plumbing Profession	1
PLT-101	Plumbing Skills 1	4
PLT-201	Plumbing Skills 2	4
RBT-235	Programmable Logic Controllers	4

²Restricted Electives should be chosen with the assistance of an advisor.

Facilities Maintenance Technology (383.2)

NORTH Certificate

This is a short-term certificate program designed to offer students an opportunity to acquire entry-level skills in facility maintenance. The program consists of courses designed to provide basic technical education through an integrated lecture and lab format. Students who complete the certificate have the option of applying their facility maintenance certificate toward an associate's degree in Facilities Maintenance Technology.

Upon successful completion of the program, the graduate will:

1. Recognize and maintain various mechanical systems.
2. Maintain, diagnose and repair plumbing fixture problems.
3. Identify, diagnose and repair plumbing fixture problems.
4. Install, diagnose, repair and maintain basic electrical fixtures.
5. Apply safety procedures when using maintenance tools.

Credits may be articulated for courses completed in high school career and technology programs. Upon completion of this program, graduates may be employed as entry-level facility maintenance technicians.

Certificate Requirements

First Semester

	Credits
HAC-101 Basic Electrical Wiring	5
HAC-201 Heating Systems	5
HAC-202 Air Conditioning Systems	<u>5</u>
	15

Second Semester

MMT-130 Job Safety & First Aid or	1
MMT-131 Introduction to OSHA and Industrial Hygiene	1
PLT-204 Plumbing Maintenance	4
WLD-221 Brazing & Welding	3
	<u>7-8</u>
	15-16

Minimum Credits to Graduate

30-31

(continued)

Facilities Maintenance Technology (383.2) (continued)

¹Restricted Electives:

EET-179	Electrical Power Distribution	3
EET-201	Electronics 1	4
EET-245	Electrical Motor Control	3
HAC-107	EPA Refrigeration Certification Preparation	1
HAC-204	Duct & Hydronic System Design	4
HAC-221	Heating/Air Conditioning Circuits & Control	4
HAC-222	Pneumatic Controls	3
HAC-224	HVAC Installation	3
HAC-225	Planned Maintenance	3
MET-170	Fluid Power Systems	4
MIT-107	Electronic Fabrication	3
MIT-208	Digital Electronics	3
MMT-208	Backflow Tester Certification.	3
RBT-235	Programmable Logic Controllers	4

²Restricted Electives should be chosen with the assistance of an advisor

Explanatory Note: Restricted Elective MMT-208 course name changed and increased from 2 to 3 credits and MMT-131 course name changed. The number of credits required for the program did not change.

Heating & Air Conditioning (313.3)

NORTH

Associate of Science

This program prepares students to install, repair and maintain refrigeration, heating and air conditioning equipment. Advanced courses develop more sophisticated design and application skills, such as estimating thermal loads, duct and hydronic piping design and controls for more complex circuits including digital control systems and pneumatics. CCAC's Heating & Air Conditioning program is available as a day or evening program at the CCAC–West Hills Center.

Graduates enter their field with skills and knowledge in electricity, heating, refrigeration systems, air conditioning systems and attention to green technologies.

Upon successful completion of the program, the graduate will:

1. Apply the skills for employment as a heating, ventilation and air conditioning (HVAC) installer or technician.
2. Design extended and reducing extended plenum duct systems.
3. Design hydronic series loop and one-pipe systems.
4. Estimate thermal loads.
5. Analyze and troubleshoot advanced electrical and digital circuits.
6. Analyze control theory concepts and pneumatics.
7. Apply green building concepts.

Degree Requirements

First Semester		Credits
HAC-101	Basic Electrical Wiring	5
HAC-120	Acquiring & Using HVAC Technical Documentation	1
HAC-201	Heating Systems	5
HAC-202	Air Conditioning Systems	5
MMT-130	Job Safety & First Aid	1
		17
Second Semester		
HAC-102	Refrigeration Systems	5
HAC-107	EPA Refrigerant Certification Prep	1
HAC-224	HVAC Installation	3
HAC-225	Planned Maintenance	3
WLD-221	Brazing & Welding	3
		15

(continued)

Heating & Air Conditioning (313.3) (continued)

Third Semester

ENG-101	English Composition 1	3
HAC-203	Estimating Thermal Loads	4
HAC-221	Heating & Air Conditioning Circuits & Controls	4
MAT-191	Mathematics for the Industries	3
SPH-101	Oral Communication	3
		<u>17</u>

Fourth Semester

ENG-103	Technical Communications	3
HAC-108	Industry Competency Exam Prep (ICE)	1
HAC-204	Duct & Hydronic System Design	4
HAC-222	Pneumatic Controls for HVAC	3
PHS-161	Physical Science for the Industries	3
PSY-116	Organizational Psychology	3
		<u>17</u>

Minimum Credits to Graduate **66**

Heating & Air Conditioning Technology (312.3)

NORTH
Certificate

This program is intended for students to study, in a hands-on environment, the installation, service and maintenance of Heating & Air Conditioning (HAC) equipment. The seven courses in HAC teach the fundamental concepts of electricity, refrigeration, heating and air conditioning, plus installation and preventive maintenance and EPA certification preparation. Special attention is given to the integration of green technologies. This program is held at CCAC–West Hills Center.

Upon successful completion of the program, the graduate will:

1. Apply the skills for employment as a heating, ventilation and air conditioning (HVAC) mechanic, refrigeration mechanic or as a repairer's assistant.
2. Install an air conditioner and furnace.
3. Maintain a furnace and air conditioner.
4. Identify and troubleshoot the components of furnaces.
5. Identify and troubleshoot the components of air conditioners.
6. Identify and troubleshoot the components of commercial refrigeration systems.
7. Apply green building concepts.

Certificate Requirements

First Semester		Credits
HAC-101	Basic Electrical Wiring	5
HAC-120	Acquiring & Using HVAC Technical Documentation	1
HAC-201	Heating Systems	5
HAC-202	Air Conditioning Systems	5
MMT-130	Job Safety & First Aid	1
		<u>17</u>
Second Semester		
HAC-102	Refrigeration Systems	5
HAC-107	EPA Refrigerant Certification Prep	1
HAC-224	HVAC Installation	3
HAC-225	Planned Maintenance	3
WLD-221	Brazing & Welding	3
		<u>15</u>
Minimum Credits to Graduate:		32

Heavy Equipment Operating Engineers Apprenticeship (740)

NORTH
Certificate

This four-year certificate program offers qualifying applicants occupational training under the sponsorship of the local Joint Apprenticeship and Training Committee (JATC) of the Western Pennsylvania Operating Engineers.

The cooperative component of this program involves lecture and laboratory classes for 45 academic credits. A student may apply these 45 credits towards an associate's degree in Building Construction Estimating or Building Construction Supervision. Instruction in this program encompasses a wide range of skills, including safety, plans and specifications, soil inspection and welding. The main focus is the operation of a wide variety of heavy equipment utilized in the construction industry.

Upon successful completion of the program, the graduate will:

1. Conduct pre-operational inspections, troubleshoot and perform routine maintenance on heavy equipment.
2. Interpret the information contained on construction grade stakes.
3. Communicate effectively using terminology common to the construction industry.
4. Give and receive hand signals used in the construction industry.
5. Safely and productively operate a wide variety of heavy equipment.

A student who successfully completes this four-year training seek employment in any number of jobs, including backhoe operator, excavator operator, loader, crane operator, grader operator and forklift operator.

Construction Trade Technology training programs are open to all qualifying students. These programs are offered in conjunction with the Joint Apprenticeship Committees of the building trades and the Pennsylvania Department of Labor. The Commonwealth of Pennsylvania awards certificates of completion to those who complete one of these apprenticeship programs. Admission is by competitive testing and interviews with a Joint Apprenticeship Committee.

Certificate Requirements

First Year	Credits
HEO-101 Heavy Equipment Regulation & Safety	6
HEO-102 Equipment Operations 1	<u>6</u>
	12
Second Year	
HEO-105 Heavy Equipment Regulation & Safety 2	5
HEO-106 Equipment Operations 2	<u>6</u>
	11
Third Year	
HEO-201 Heavy Equipment Regulation & Safety 3	4
HEO-202 Equipment Operations 3	<u>7</u>
	11
Fourth Year	
HEO-205 Equipment Operations 4	6
HEO-206 Industry Recertification	<u>5</u>
	11
Minimum Credits to Graduate:	45

Ironworker Apprenticeship (289.1)

NORTH
Certificate

This three-year certificate program offers qualifying applicants occupational training under the sponsorship of the local Joint Apprenticeship Committee.

The cooperative part of the program involves lecture and laboratory classes for 45 academic credits. A student may then apply these 45 credits toward an associate's degree in Building Construction Estimating or Supervision. Graduates will have classroom and shop training and job experience in ironworking. Upon completion of the certificate and the job experience hours required by the Bureau of Apprenticeship and Training, they may work in commercial building construction as a skilled ironworker. Construction trade technology training programs are open to all qualifying students. These programs are offered in conjunction with the Joint Apprenticeship Committees of the building trades and Pennsylvania Department of Labor. The state of Pennsylvania awards Journeyman working papers to those who complete one of these apprenticeship programs. Admission is by competitive testing and interviews with a Joint Apprenticeship Committee.

Upon successful completion of the program, the graduate will:

1. Work safely in all aspects of the ironworking trade as defined by and governed by OSHA and ANSI as a qualified rigger, qualified scaffold erector user and qualified powered fork truck operator. Certifications include OSHA subpart R, OSHA 10- and 30-hour certifications and MSHA training.
2. Work proficiently in structural steel construction utilizing rigging and hoisting techniques, blueprint reading skills and steel detailing applications.
3. Perform all welding functions required of the Ironworker apprentice, including completion of the AWS D1.1/1.5 welder certification tests in both SMAW and FCAW.
4. Construct and assemble all types of curtain wall systems, window wall systems, windows, storefronts and architectural metals.
5. Place all types of reinforcing steel including beams, slabs, columns, bridge decks and unbonded post tensioning systems.

Certificate Requirements

First Year		Credits
STI-115	Ironworker Rigging 1	1
STI-116	Ironworker Reinforcing 1.1	1
STI-117	Ironworker Reinforcing 1.2	1
STI-120	Ornamental 1.1	1
STI-121	Ornamental 1.2	1
STI-124	Ironworker Safety Union 1.1	1
STI-125	Ironworker Safety 1.2	1
STI-126	Structural Ironworking 1.1	1
STI-127	Structural Ironworking 1.2	1
STI-128	Structural Ironworking 1.3	1
WLD-180	Ironworker Welding 1.1	1
WLD-181	Ironworker Welding 1.2	1
WLD-182	Ironworker Welding 1.3	1
WLD-184	Ironworker Welding 1.4	1
		<u>14</u>
Second Year		
STI-220	Ironworker Rigging 2	1
STI-222	Ornamental 2.1	2
STI-223	Ironworker Safety Union Agreement 2.1	3
STI-224	Ironworker Reinforcing 2 Unbonded Post-tensioning	3
STI-225	Structural Ironworking 2.1	1
STI-226	Structural Ironworking 2.2	1
STI-227	Structural Ironworking 2.3	1
WLD-285	Ironworker Welding 2.1	1
WLD-287	Ironworker Welding 2.2	1
WLD-288	Ironworker Welding 2.3	1
WLD-289	Ironworker Welding 2.4	1
		<u>16</u>
Third Year		
STI-301	Ornamental 3.1	1
STI-302	Ornamental 3.2	1
STI-303	Ironworker Safety 3.1	3
STI-304	Structural Ironworking 3.1	1
STI-306	Structural Ironworking 3.2	1
STI-307	Structural Ironworking 3.3	1
STI-308	Ironworker Rigging 3	1
STI-309	Ironworker Reinforcing 3.1	1
STI-310	Ironworker Reinforcing 3.2	1
STI-311	Ironworker Foreman Training Supervision	1
WLD-380	Ironworker Welding 3.1	1
WLD-381	Ironworker Welding 3.2	1
WLD-382	Ironworker Welding 3.3	1
		<u>15</u>
Minimum Credits to Graduate		45

(continued)

Mechatronics Technology (722)

NORTH

Associate of Science

The Mechatronics Technology program provides skills and knowledge in three major areas: mechanical engineering, electrical/electronic engineering and control systems. This technology training is relevant to several industries including the Marcellus Shale natural gas industry, energy, manufacturing and supply chain and logistics. Students who pursue this degree will benefit from a technical core set of courses that combine industry-recognized certification and quality college education. Students may specialize in (A) Robotics and Automation, (B) Instrumentation and Process Controls or (C) Supply Chain Technology. Specialization will be directed in the restricted electives that students choose.

Typical job titles will vary depending upon specialization; these include: production, planning and expediting clerks, maintenance and repair workers, inspectors, testers, sorters, samplers and weighers, instrumentation technicians, robotics technicians, automation engineer technicians, electro-mechanical technicians, process technicians, industrial maintenance technicians, field automation technicians and supply chain technicians.

This associate degree program may provide students with opportunities to pursue supervisory positions in the above fields.

Upon successful completion of the program, the graduate will:

1. Install and operate instrumentation and process control devices across the spectrum of industries.
2. Use quality and safety standards necessary for the operating, maintaining and repairing of automated equipment.
3. Program, configure, troubleshoot and repair automated, industrial equipment for machining, assembly, chemical processing and logistic distribution.
4. Develop an application-oriented project on an integrated mechatronics system meeting business objectives and financial constraints.
5. Communicate effectively and appropriately with team members and clients within societal and global contexts.

Students who complete *MEC-100* and *MEC-102* will sit for the Manufacturing Skill Standards Council (MSSC) Certified Production Technician (CPT) industry credential. This is a National Association of Manufacturers (NAM) endorsed

credential. The cost of the certification is included in the fees for the courses.

There are additional, optional certifications students may wish to pursue to enhance their employability. Students who successfully complete *EET-103*, *EET-179* and *EET-245* will be prepared to sit for the Packaging Machinery Manufacturers Institute (PMMI) industry credential: PMMI Mechatronics Industrial Electricity 1. Students who successfully complete *MET-181* will be prepared to sit for the PMMI Mechatronics: Mechanical Components 1 industry credential. Students who successfully complete *RBT-235* will be prepared to sit for the PMMI Mechatronics: PLC 1 industry credential. Students who successfully complete *MET-170* will be prepared to sit for the PMMI Mechatronics: Fluid Power 1 industry credential. There are additional fees for these optional industry credentials.

Degree Requirements

First Semester

		Credits
EET-103	Introduction to Electronics	3
MAT-108	Intermediate Algebra ¹ or	4
MAT-191	Mathematics for the Industries	3
MEC-100	Mecatronics Safety & Quality	3
MEC-102	Mechatronics Industrial Processes	3
MET-181	Mechanical Systems	3
		15-16

Second Semester

EET-179	Electrical Power Distribution	3
EET-245	Electrical Motor Control	3
MIT-103	Fundamentals of Microprocessors	3
PSY-101	Introduction to Psychology ¹ or	3
PSY-116	Organizational Psychology	3
RBT-235	Programmable Logic Controllers	4
		16

Third Semester

ENG-101	English Composition 1	3
MET-170	Fluid Power Systems	4
SPH-101	Oral Communication	3
	Restricted Electives ²	<u>6-8</u>
		16-18

Fourth Semester

ENG-102	English Composition 2 ¹ or	3
ENG-103	Technical Communications	3
MEC-220	Mechatronics Practicum	3
PHY-141	Physics 1 ¹ or	4
PHS-161	Physical Science for the Industries	3
	Restricted Electives ²	3-4
		12-14

Minimum Credits to Graduate

60-64

Mechatronics Technology (722) (Continued)

¹Students planning on transferring to a four-year institution should take the following courses:

ENG-102	English Composition 2	3
MAT-108	Intermediate Algebra	4
PHY-141	Physics 1	3
PSY-101	Introduction to Psychology	3

²There are three tracks of specialization that students may pursue through the choice of restricted electives:

- A. Robotics & Automation,
- B. Instrumentation & Process Controls and
- C. Supply Chain Technology.

A. Robotics & Automation

The use of automated equipment is common in advanced manufacturing today, particularly for such industrial processes as assembly, machining, inspection and packaging. To prepare for a career in this field, technicians will build upon their Mechatronics foundation with specialized skills in robotics and automation equipment such as flexible manufacturing and motion control devices.

Recommended Robotics & Automation Restricted Electives:

MET-106	Geometric Dimensioning & Tolerancing	
RBT-225	Robotics & Controls	4
RBT-230	Automated Equipment	3
RBT-238	Advanced Programmable Logic Controls (PLC)	3
SET-105	Technical Computing	3

B. Instrumentation & Process Controls

Automated instrumentation is used in the processing of natural gas and other renewable energies, chemicals and power generation to measure such variables as pressure, flow, level, temperature and other chemical and electrical properties. To prepare for careers in these fields, technicians will build upon their Mechatronics foundation with specialized skills in electronics and process control devices.

Recommended Instrumentation & Process Controls

Restricted Electives:

CHM-109	Introduction to Chemistry	4
EDD-100	Blueprint Reading	3
MEC-204	AC/DC Electronic Drive	3
MEC-205	Troubleshooting Advanced Motor Controls	3
MEC-211	Process Control	3
MET-130	Introduction to Renewable Energy Systems	4
MET-220	Green and Sustainable Buildings	4

C. Supply Chain Technology

Automated warehousing is becoming a staple of supply chain management to increase the efficiency of product inventory, handling and distribution. To prepare for a career in this field, technicians will build upon their Mechatronics foundation with specialized skills in welding, schematics and automated equipment such as conveyor systems and motion control devices.

Recommended Supply Chain Technology Restricted Electives:

BUS-103	Principles of Management	3
BUS-200	Principles of Supervision	3
EDD-100	Blueprint Reading	3
RBT-225	Robotics & Controls	4
RBT-230	Automated Equipment	3
SET-105	Technical Computing	3
WLD-221	Brazing and Welding	3

After completion of the degree, students may choose to pursue additional advanced level courses in mechanical systems, PLCs, Fluid Power and Renewable Energy systems through CCAC's workforce development division. For further information, please contact 412-788-7357.

Mechatronics Technology (723)

NORTH
Certificate

The Mechatronics Technology Program provides skills and knowledge in three major areas: mechanical engineering, electrical/electronic engineering and control systems. This technology training is relevant to several industries including the Marcellus Shale natural gas industry, energy, manufacturing and supply chain and logistics. Students who pursue this degree will benefit from a technical core set of courses that combine industry-recognized certification and quality college education.

Typical job titles include: production, planning and expediting clerks, entry-level maintenance and repair workers, inspectors, testers, sorters, samplers and weighers, electro-mechanical technicians, industrial maintenance technicians and entry-level supply chain technicians.

Upon successful completion of the program, the graduate will:

1. Use quality and safety standards necessary for the operating, maintaining and repairing of industrial equipment.
2. Program, configure and operate automated, industrial equipment for machining, assembly and production.
3. Troubleshoot and repair equipment applying basic and preventative maintenance techniques.
4. Apply basic computational skills in measurement and analysis of technical formulas and schematics.
5. Utilize technical and organizational skills to effectively engage with team members and a diverse customer base.

Students who complete *MEC-100* and *MEC-102* will sit for the Manufacturing Skill Standards Council (MSSC) Certified Production Technician (CPT) industry credential. This is a National Association of Manufacturers (NAM) endorsed credential. The cost of the certification is included in the fees for the courses.

There are additional, optional certifications students may wish to pursue to enhance their employability. Students who successfully complete *EET-103*, *EET-179* and *EET-245* will be prepared to sit for the Packaging Machinery Manufacturers Institute (PMMI) industry credential: PMMI Mechatronics Industrial Electricity 1. Students who successfully complete *MET-181* will be prepared to sit for the PMMI Mechatronics: Mechanical Components 1 industry credential. Students who successfully complete *RBT-235* will be prepared to sit for the PMMI Mechatronics: PLC 1 industry credential.

Degree Requirements

First Semester		Credits
EET-103	Introduction to Electronics	3
MAT-108	Intermediate Algebra ¹ or	4
MAT-191	Mathematics for the Industries	3
MEC-100	Mechatronics Safety & Quality	3
MEC-102	Mechatronics Industrial Processes	3
MET-181	Mechanical Systems	<u>3</u>
		15–16

Second Semester

EET-179	Electrical Power Distribution	3
EET-245	Electrical Motor Control	3
MIT-103	Fundamentals of Microprocessors	3
PSY-101	Introduction to Psychology ¹ or	3
PSY-116	Organizational Psychology	3
RBT-235	Programmable Logic Controllers	<u>4</u>
		16

Minimum Credits to Graduate: 31–32

¹Students planning on transferring to a four-year institution should take the following courses:

MAT-108	Intermediate Algebra	4
PSY-101	Introduction to Psychology	3

Plumber Apprenticeship (389.1)

NORTH
Certificate

This five-year certificate program offers qualifying applicants occupational training under the sponsorship of the local Joint Apprenticeship Committee. The certificate includes a cooperative component which involves lecture and laboratory classes for twenty-eight (28) academic credits. A student may then apply these twenty-eight (28) credits toward an associate degree in Building Construction Estimating or Building Construction Supervision.

Construction trade technology training programs are open to all qualifying students. These programs are offered in conjunction with the Joint Apprenticeship Committees of the building trades and the Pennsylvania Department of Labor. The state of Pennsylvania awards journeyman working papers to those who complete one of these apprenticeship programs. Upon completion of the certificate and job experience hours required by the Bureau of Apprenticeship and Training, students will be able to work in the commercial building construction industry as skilled plumbers.

Admission is by competitive testing and interviews with a Joint Apprenticeship Committee.

Upon successful completion of the program, the graduate will:

1. Communicate effectively and appropriately with management and a diverse customer base.
2. Recognize and operate plumbing tools safely.
3. Install, diagnose, repair and maintain commercial plumbing fixtures.
4. Measure, calculate and budget for plumbing materials, including green materials.
5. Interpret codes and illustrate plumbing blue print plans and drawings for commercial projects.

Certificate Requirements

		Credits
First Year		
PLT-103	Plumbing 1	2
PLT-115	Mathematics for Plumbing	3
PLT-121	Plumbing Drafting & Blueprint Reading 1	3
WLD-101	Welding Fundamentals	<u>3</u>
		11
Second Year		
PLT-105	Introduction to Plumbing Code	2
PLT-221	Plumbing Drafting & Blueprint Reading 2	1
WLD-102	Advanced Welding	<u>3</u>
		6
Third Year		
PLT-145	Plumbing Code 2	2
PLT-222	Mechanical CAD for Plumbers	3
WLD-196	Welding for Plumbing 1	<u>3</u>
		8
Fourth Year		
PLT-205	Plumbing 4	6
PLT-206	Plumbing Code 3	2
WLD-296	SMAW & Applied Fundamentals	<u>3</u>
		11
Fifth Year		
MMT-208	Backflow Tester Certification.	3
PLT-224	Estimating/CFC	2
PLT-225	Medical Gas	2
WLD-202	MIG & TIG Processes	<u>3</u>
		10
Minimum Credits to Graduate		46

Plumbing (365.1)

NORTH
Certificate

This certificate is a short-term training program designed to offer students an opportunity to acquire basic skills to assist with installation and repairs of plumbing systems in residences and small buildings. Many plumbers are self-employed; however, this is a profession that typically requires a long period of on-the-job experience for plumbers to be fully qualified and licensed. Students who complete the certificate have the option of applying their plumbing certificate credits toward an associate's degree in General Studies at CCAC.

Upon successful completion of the program, the graduate will:

1. Apply skills to seek employment as a plumber's assistant with plumbing contractors, maintenance jobs, allied trades plumbing apprenticeships and plumbing supply companies.
2. Recognize and operate plumbing tools safely.
3. Interpret and illustrate plumbing plans and drawings.
4. Measure and calculate plumbing materials.
5. Install, diagnose, repair and maintain basic residential plumbing fixtures.

Credits may be articulated for courses completed in high school career and technology programs.

Certificate Requirements

First Semester		Credits
PLT-100	Introduction to the Plumbing Profession	1
PLT-101	Plumbing Skills 1	4
PLT-102	Plumbing Measuring & Calculating	3
PLT-106	Plumbing Blue Print Reading	2
WLD-221	Brazing & Welding	3
		13
Second Semester		
PLT-201	Plumbing Skills 2	4
PLT-202	Plumbing Skills 3	4
PLT-204	Plumbing Maintenance	4
MMT-208	Backflow Tester Certification	3
		15
Minimum Credits to Graduate		28

Sheet Metal Worker Apprenticeship (379)

NORTH
Associate of Science

This associate's degree program enables students enrolled in the CCAC certificate for sheet metal apprentices to continue with their education and complete the coursework needed for an associate's degree.

Upon successful completion of the program, the graduate will:

1. Acquire the skills needed for fabrication and installation of architectural sheet metal; including brass and copper ornamentation, columns, skylights, signs, metal ceilings and downspouts.
2. Perform the testing, adjusting and balancing needed to fine tune and maintain HVAC components according to engineering specifications.
3. Utilize computers to fabricate sheet metal products and troubleshoot HVAC systems as well as system design using CAD drafting.
4. Fuse different types of metal using the latest technological processes.
5. Perform the rigging and installation of building components relating to floor and walls.

Degree Requirements

First Year		Credits
ENG-101	English Composition	3
SHM-103	Basic Sheet Metal Fabrication	4
SHM-104	Basic Mechanical Drawing	3
PHS-161	Physical Science for the Industries	3
WLD-295	GMAW & Welding Fundamentals	3
		16
Second Year		
ENG-103	Technical Communications	3
MAT-108	Intermediate Algebra ¹ or	4
MAT-191	Mathematics for the Industries	3
SHM-107	Sheet Metal 2	3
SHM-108	Advanced Mechanical Drawing	3
SPH-101	Oral Communication	3
WLD-296	SMAW & Applied Fundamentals	3
		18-19

(continued)

Sheet Metal Worker Apprenticeship (379) (continued)

Third Year

HIS-151	History of American Labor	or	3
PSY-116	Organizational Psychology		3
SHM-203	Sheet Metal 3		4
SHM-204	CAD & HVAC Design		4
SHM-207	Problem Solving		5
WLD-297	GTAW Processes		3
			19

Fourth Year

SHM-208	Industrial Metal Fabrication		3
SHM-209	Advanced AutoCAD Applications		3
SHM-210	Foreman Training		1
WLD-298	Industrial Metal Applications		4
			11

Minimum Credits to Graduate: 64–65

¹Students planning to transfer to a four-year school must take *MAT-108 Intermediate Algebra*.

Sheet Metal Worker Apprenticeship (391.1)

NORTH

Certificate

This four-year certificate program offers qualifying applicants occupational training under the sponsorship of the local Joint Apprenticeship Committee.

Upon successful completion of the program, the graduate will:

1. Understand the need for a commitment to responsibility, re-education, supervisory skills, safety and drug awareness that translates into quality craftsmanship, efficiency and productivity on the job site.
2. Prepare the fabrication and installation of architectural sheet metal, such as brass and copper ornamentation, columns, skylights, signs, metal ceilings and downspouts.
3. Prepare the design, fabrication and installation of heating, ventilating, air conditioning.
4. Test, adjust and balancing/fine tune and maintain HVAC components according to engineering specifications.
5. Use a computer to fabricate sheet metal products and troubleshoot HVAC systems as well as system design using CAD drafting.
6. Prepare stainless steel fabrication and installation in restaurants, cafeterias, etc.
7. Fuse different types of metal using the latest technological processes.
8. Prepare pattern layout of geometric development of patterns for sheet metal objects to be fabricated.

Graduates will have had classroom, shop training and job experience hours in sheet metal work. Upon completion of the CCAC certificate and the job experience hours required by the Bureau of Apprenticeship and Training, they can find employment doing industrial duct fabrication and installation, as architectural sheet metal workers, energy managers for green technology or in kitchen equipment fabrication and installation. They may also work in commercial building construction as skilled sheet metal workers.

(continued)

Sheet Metal Worker Apprenticeship (391.1) (continued)

Construction trade technology training programs are open to all qualifying students. These programs are offered in conjunction with the Joint Apprenticeship Committees of the building trades and the Pennsylvania Department of Labor. The Commonwealth of Pennsylvania awards journeyman working papers to those who complete one of these apprenticeship programs. Admission is by competitive testing and interviews with a Joint Apprenticeship Committee.

Certificate Requirements

First Year		Credits
SHM-103	Basic Sheet Metal Fabrication	4
SHM-104	Basic Mechanical Drawing	3
WLD-295	GMAW & Welding Fundamentals	3
		10
Second Year		
MAT-191	Mathematics for the Industries	3
SHM-107	Sheet Metal 2	3
SHM-108	Advanced Mechanical Drawing	3
WLD-296	SMAW & Applied Fundamentals	3
		12
Third Year		
SHM-203	Sheet Metal 3	4
SHM-204	CAD & HVAC Design	4
SHM-207	Problem Solving	5
WLD-297	GTAW Processes	3
		16
Fourth Year		
SHM-208	Industrial Metal Fabrication	3
SHM-209	Advanced AutoCAD Applications	3
SHM-210	Foreman Training	1
WLD-298	Industrial Metal Applications	4
		11
Minimum Credits to Graduate:		49

Stationary Operating Engineer (731.1)

NORTH

Associate of Science

This associate's degree program enables students, especially those enrolled in the CCAC certificate for Stationary Operating Engineer, to continue with their education and complete the coursework needed for an associate's degree. The program provides students with opportunity to acquire the skills needed for employment in jobs requiring multiple maintenance competencies, including electricity, plumbing and boilers. These competencies will allow the students in this associate's degree program to obtain highly skilled maintenance positions in a variety of industries, office buildings, universities, hospitals, school districts, municipalities, stadiums and commercial/industrial facilities.

Upon successful completion of the program, the graduate will:

1. Maintain and repair systems and functions associated with the maintenance of facilities.
2. Troubleshoot and provide preventative maintenance of facilities.
3. Communicate effectively, not only using the terminology appropriate to this trade, but the skills acquired in the other non-technical coursework.
4. Provide the leadership and management skills needed for a position as foreman, manager and supervisor.

Upon completion of this program, a graduate may seek employment as a stationary operating engineer, a chief engineer, a facilities manager, maintenance foreman or as a building maintenance supervisor.

(continued)

Stationary Operating Engineer (731.1) (Continued)

Degree Requirements

First Semester		Credits
CIT-100	Computer Fundamentals & Applications	3
ENG-101	English Composition	3
SOE-101	Electricity 1	3
SOE-102	HVACR 1	3
SOE-103	Plumbing 1	3
		15
Second Semester		
ENG-103	Technical Communications	3
MAT-108	Intermediate Algebra ¹ or	4
MAT-191	Mathematics for the Industries	3
SOE-110	HVACR 2	3
SOE-111	Electricity 2	3
SOE-112	Plumbing 2	3
SOE-114	High Pressure Steam Boilers	3
		18–19
Third Semester		
PHS-161	Physical Science for the Industries	3
SOE-201	Industrial Maintenance 1	3
SOE-202	Industrial Electric 1	3
SOE-203	HVACR 3	3
SOE-204	Direct Digital Control 1	3
SOE-205	Chief Engineering Leadership Training	2
SOE-215	City Engineers License Refresher/ Training	1
		18
Fourth Semester		
HIS-151	History of American Labor or	3
PSY-116	Organizational Psychology	3
SOE-210	Industrial Maintenance 2	3
SOE-211	Industrial Electric 2	3
SOE-212	HVACR 4	3
SOE-214	Direct Digital Control 2	3
SPH-101	Oral Communication	3
		18
Minimum Credits to Graduate		69–70

¹Students planning to transfer to a four-year school must take *MAT-108 Intermediate Algebra*.

Stationary Operating Engineer (730.1)

NORTH
Certificate

The certificate is a stationary engineer Local 95 supported training program that provides the lecture and hands-on training needed for employment as stationary operating engineers for both union and non-union students. The program provides students the opportunity to acquire the skills needed for employment in jobs requiring multiple maintenance competencies, including electricity, plumbing and boilers. These competencies will allow students with this certificate to obtain highly skilled maintenance positions in a variety of industries, office buildings, universities, hospitals, school districts, municipalities, stadiums and commercial/industrial facilities.

Upon successful completion of this program, the graduate will:

1. Maintain and repair systems and functions associated with facilities maintenance.
2. Troubleshoot and provide preventative maintenance of facilities.
3. Communicate effectively using the terminology appropriate to this trade.
4. Provide the leadership and management skills needed for position as foreman, manager and supervisor.

Upon completion of this program, students may seek employment as a stationary operating engineer, a chief engineer, a facilities manager, maintenance foreman or as a building maintenance supervisor.

For more information or to apply to the program and/or register for classes, contact Local 95 at 412.422.4702.

(continued)

Stationary Operating Engineer (730.1) (continued)

Certificate Requirements

First Semester		Credits
SOE-101	Electricity 1	3
SOE-102	HVACR 1	3
SOE-103	Plumbing 1	3
		9
Second Semester		
SOE-110	HVACR 2	3
SOE-111	Electricity 2	3
SOE-112	Plumbing 2	3
SOE-114	High Pressure Steam Boilers	3
		12
Third Semester		
SOE-201	Industrial Maintenance 1	3
SOE-202	Industrial Electric 1	3
SOE-203	HVACR 3	3
SOE-204	Direct Digital Control 1	3
SOE-205	Chief Engineer Leadership Training	2
		14
Fourth Semester		
SOE-210	Industrial Maintenance 2	3
SOE-211	Industrial Electric 2	3
SOE-212	HVACR 4	3
SOE-214	Direct Digital Control 2	3
SOE-215	City Engineers License Refresher & Testing	1
		13
Minimum Credits to Graduate:		48

Welding Technology (316.4)

NORTH

Associate of Science

This program provides students with the skills and knowledge for employment in the scientific and industrial areas requiring welding specialists. Courses in mathematics, science and blueprint reading are required elements of the degree. Successful completion of this program prepares students for the following external industry certifying examinations: Shielded Metal Arc Welding–D1.1 and D1.5 American Welding Society (AWS) test on one-inch plate in the vertical position; Flux Core Arc Welding–AWS D1.1/AWS D1.5 one-inch plate vertical position; and six-inch Pipe SCHD 80 in the 6G position. Additionally, advanced certifications are available through restrictive elective course offerings.

Upon successful completion of the program, the graduate will:

1. Utilize safety procedures and theory of the Shielded Metal Arc Welding (SMAW) processes.
2. Utilize multi-layered welds in different weld joints and weld positions.
3. Operate oxy-fuel cutting and brazing equipment safely.
4. Identify and interpret blueprints and the basic (AWS) weld symbols.
5. Apply gas metal arc welding, gas tungsten arc welding, flux core arc welding processes and the safety and set-up procedures for metals such as aluminum, stainless steel and carbon steel.

The Welding Technology program is located at the CCAC–West Hills Center as a day or evening program. Credit for some courses may be awarded for work completed at an area Career and Technology Center (CTC), trade school or from the military. Students will be required to purchase welding tools and equipment.

Upon completion of this program, a graduate may seek employment as a welder, a welding shop supervisor or as an advanced certified welder.

(continued)

Welding Technology (316.4) (continued)

Degree Requirements

First Semester		Credits
WLD-101	Welding Fundamentals	3
WLD-102	Advanced Welding	3
WLD-107	Blueprint Reading for Welders	3
WLD-201	Preparation for Welding Certification	3
WLD-202	MIG & TIG Processes	3
WLD-221	Brazing & Welding	3
		18

Second Semester

MAT-108	Intermediate Algebra ¹ or	3
MAT-191	Mathematics for the Industries	3
PHS-161	Physical Science for the Industries or	3
PHY-100	Basic Physics ¹	3
PSY-101	Introduction to Psychology ¹ or	3
PSY-116	Organizational Psychology	3
WLD-211	Welding Inspection	3
WLD-217	MIG Flux Core Certification	3
		15

Third Semester

ENG-101	English Composition 1	3
MMT-130	Job Safety & First Aid	1
SPH-101	Oral Communication	3
WLD-222	Pipe Welding 1 Basic	3
	Computer Information Technology	
	Elective	1
	Restricted Elective ²	3
		14

Fourth Semester

ENG-102	English Composition 2 or	3
ENG-103	Technical Communications	3
WLD-223	Pipe Welding 2 Advanced	3
	General Electives	7
		13

Minimum Credits to Graduate 60

¹Recommended for transfer students

²Restricted Electives

EGR-100	Engineering Seminar	1
HIS-151	History of American Labor	3
MFT-141	Introduction to Machining	3
SDS-112	The Job Search	1
SET-105	Technical Computing	3
WLD-208	Advanced Drawing & Reading	
	for Fabrication	3
WLD-224	Pipe 3 Downhill Pipe welding	3
WLD-400	Welding Co-op	3

Welding Technology (317.3)

NORTH
Certificate

This certificate program provides students with the entry-level skills to work as welders in small and large companies. Students in this certificate program are eligible to take the American Welding Society (AWS) D1.1 and D1.5 Certification Test. This program also offers students the skills that are necessary to read blueprints in the technical work area. Full-time students in this certificate program are prepared to sit for the AWS certification in four months. Students may find employment as welders, fabricators or grinders.

Upon successful completion of the program, the student will:

1. Utilize safety procedures and theory of the shielded metal arc welding (SMAW) processes.
2. Utilize multi-layered welds in different weld joints and weld positions.
3. Operate oxy-fuel cutting and brazing equipment safely.
4. Identify and interpret blueprints and the basic (ASW) weld symbols.
5. Demonstrate gas metal arc welding, gas tungsten arc welding, flux core arc welding processes and the safety and setup procedures for metals, *i.e.*, aluminum, stainless steel and carbon steel.

The CCAC–North Campus Welding Technology certificate is available at the CCAC–West Hills Center. Credit for some courses may be awarded for work completed at an area vocational/technical school, trade school or in the military. Students should be advised at the CCAC–West Hills Center.

Certificate Requirements

One Semester		Credits
WLD-101	Welding Fundamentals	3
WLD-102	Advanced Welding	3
WLD-107	Blueprint Reading for Welders	3
WLD-201	Preparation for Welding Certification	3
WLD-202	MIG & TIG Processes	3
WLD-221	Brazing & Welding	3

Minimum Credits to Graduate 18

Welding, Gas & Oil (319.1)

NORTH, SOUTH
Certificate

This program provides students with the skills and knowledge for employment as a pipe welder in industries such as cross-country natural gas transmission and natural gas retailers.

Upon successful completion of the program, the graduate will:

1. Demonstrate the technical skills for employment as a welder in the Marcellus Shale industry.
2. Apply safety procedures and theory of the Shielded Metal Arc Welding (SMAW) processes.
3. Utilize multi-layered welds in different weld joints and weld positions.
4. Make a shielded metal-arc weld on schedule 80 pipe in a fixed 6G position.
5. Transition pipe welding skills to the downhill process using specialized electrodes.

Successful completion of this program prepares students for the following certification examinations: Shielded Metal Arc Welding (SMAW)—D1.1 and D1.5 American Welding Society (AWS) test on one-inch plate in the vertical position; American Society of Mechanical Engineers (ASME) and American Welding Society (AWS) pipe welding certification in uphill Shielded Metal Arc Welding (SMAW) for 6" diameter, schedule 80 pipe in the 6G (45 degree) fixed position; and The American Petroleum Institute (API) downhill shielded metal-arc pipe welding process employed by the Marcellus Shale industry to connect natural gas cross country transmission pipelines.

The Welding Technology program is located at the CCAC–West Hills Center as a day or evening program. The program is also offered at Career and Technical Centers (CTC), based on demand and lab availability. Credit for some courses may be awarded for work completed at an area Career and Technology Center (CTC) through Students Occupationally and Academically Ready (SOAR) articulations, trade schools or from the military. Students will be required to purchase welding tools and equipment.

Certificate Requirements

First Semester

		Credits
WLD-101	Welding Fundamentals	3
WLD-102	Advanced Welding	3
WLD-201	Preparation for Certification	$\frac{3}{9}$

Second Semester

WLD-222	Pipe Welding 1 Basic	3
WLD-223	Pipe Welding 2 Advanced	$\frac{3}{6}$

Third Semester

WLD-224	Pipe Welding 3 Downhill	$\frac{3}{3}$
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Minimum Credits to Graduate

18

STUDENT NOTES

Course Descriptions

This section lists all courses offered at the Community College of Allegheny County with the number of credits, lecture/lab/clinical hours and a short description. Note: not every course is offered in every term; consult the course search on ccac.edu CCAC Central e-Services for courses in specific terms.



Course description explanations

The **alphacode** indicates the discipline to which the course is assigned.

The **course number** indicates the course within that discipline.

The **title** of each course is unique to that course.


The **credits assigned** indicate the credits the student will earn after successfully completing the course.

The **class hours** indicate the number of hours each week the student attends that class. In some cases, these hours are divided into lecture, laboratory, studio or clinical.

The **prerequisite** indicates the knowledge, skills or class a student will need before beginning this class. In most cases, prerequisites concern instruction offered at the college. If a student is uncertain whether he/she has the prerequisite knowledge or skills, the student should consult with the department offering the course.

The **corequisite** indicates a course that a student should take at the same time as the one being considered.

The **course description** is a brief explanation of course content. The course outline will more fully explain the content. Students will receive an outline when they attend class.

Some CCAC courses are labeled foundation courses. PA Trac creates a seamless statewide transfer and articulation system by creating foundation courses that can be easily transferred to any participating institution. Students who successfully complete courses from the approved Transfer Credit Framework list can transfer those credits to any of the participating colleges and universities and have them count towards graduation at any of the participating colleges and universities. (see www.pacollegetransfer.com/PATRAC). PA Trac courses are marked with the  keystone icon:

Example:

MAT-161 Elementary Statistics

3 credits/3 class hours

Prerequisite: *MAT-108* or equivalent

Corequisite: *MAT-111* or equivalent



This is a course for students in programs requiring knowledge of statistics. Topics may include graphing distributions, measures of central tendency and variability, correlation and regression, probability, hypothesis testing using the z, t and CHI square tests.

Elective courses

All college programs require students to enroll in courses called electives. Electives allow students to broaden their college education or deepen their understanding of a specific area while fulfilling the elective requirements of a program.

Any course offered for credit by CCAC can be an elective, subject to the following restrictions:

- A course can count toward graduation only if the student has satisfied the prerequisites for that course.
- A course can count only once toward graduation.
- Electives may be courses transferred from another accredited college or university or advanced standing credits earned through USAFI, CLEP or other nationally recognized examinations approved by the college.

There are three types of electives:

1. General Electives

These electives encourage students to experiment with a variety of courses at the college. This requirement can be fulfilled by any college-level course.

2. Department Electives

A department elective is a cluster of disciplines from which a student may select an elective. These electives permit students to choose courses within a discipline or department that fit their program. An academic advisor will help the student make an appropriate selection. Discipline or department electives are limited to the appropriate alphacode and course number.

Humanities Electives:

- ART** Art History & Studio Art
ASL American Sign Language & Culture
DAN Dance
ENG English (above the level of *ENG-102*)
ETH201 Music of Black Americans: 1619 to Present
FCL Foreign Culture & Language (All language courses)
JRN Journalism
MUS Music

(continued)

Humanities Electives (continued)

PHL	Philosophy
SPH	Speech
THE	Theatre

Mathematics Electives:

MAT Mathematics. Exceptions are noted in the course descriptions. Business mathematics can be taken in some career programs. This is noted where it is appropriate.

Science Electives:

BIO	Biology
CHM	Chemistry
GGY	Geology
PHS	Physical Science
PHY	Physics

Social Science and**Behavioral Science Electives:**

ANT	Anthropology
CJC	Criminal Justice & Criminology
ECD	Early Education & Child Development
ECO	Economics
ETH	Ethnic & Diversity Studies
GEO	Geography
HIS	History
HLS	Homeland Security
PAL	Paralegal
POL	Political Science
PSY	Psychology
SOC	Sociology
SOW	Social Work Technology
TSA	Transportation Security Administration

Business Electives:

ACC	Accounting
BUS	Business
CIT	Computer & Information Technology
ECO	Economics
RLE	Real Estate

3. Discipline Electives

A discipline elective is one alpha code identified on the following lists. These electives complete the general education requirements of the associate's degree. Disciplines appropriate to these requirements are listed below. Exceptions are noted in the course description.

Alpha codes for all disciplines taught at CCAC follow.

ACC	Accounting
ALH	Allied Health
ANT	Anthropology
ARA	Arabic Language & Culture
ART	Art History & Studio Art
ASL	American Sign Language & Culture
ATE	Automotive Technology
AVT	Aviation (Flight) Technology
BIO	Biology
BLC	Building Construction Technology
BTC	Biotechnology
BUS	Business
CAR	Carpentry
CAT	Computed-assisted Tomography
CET	Civil Engineering Technology
CHM	Chemistry
CIT	Computer & Information Technology
CJC	Criminal Justice & Criminology
CLR	Culinary Arts
CRT	Court Reporting
CST	Central Service Technician
DAN	Dance
DIT	Dietetics
DMS	Diagnostic Medical Sonography
DVS	Developmental Studies
ECD	Early Education & Child Development
ECO	Economics
ECT	Electrical Construction Technology
EDD	Engineering Drafting & Design
EDT	Electrical Distribution
EDU	Education
EET	Electrical & Electronic Engineering Technology

EGR	Engineering Science
ENG	English Writing & Literature
ESL	English as a Second Language
ETH	Ethnic & Diversity Studies
FCL	Foreign Culture & Language
FLR	Foodservice, Lodging & Recreation Management
FRE	French Language & Culture
FSA	Fire Science Administration
GEO	Geography
GER	German Language & Culture
GGY	Geology
	<i>Health Information Technology (see Medical Records (MDR))</i>
HAC	Heating & Air Conditioning Technology
HEO	Heavy Equipment Operator
HIS	History
HLS	Homeland Security
HPE	Health & Physical Education
ITA	Italian Language & Culture
ITP	Interpreter for the Deaf Training
JRN	Journalism
LMS	Labor & Management Studies
LND	Land Administration
MAS	Massage Therapy
MAT	Mathematics
MDA	Medical Assistant
MDR	Medical Records (<i>Health Information Technology</i>)
MET	Mechanical Engineering Technology
MFT	Manufacturing Technology
MIS	Medical Insurance Specialist
MIT	Microcomputer Electronics Technology
MLA	Medical Laboratory Assistant
MLT	Medical Laboratory Technician
MMC	Multimedia Communications
MMT	Maintenance Mechanics Technology
MRI	Magnetic Resonance Imaging
MUS	Music Theory & Practice
NMT	Nuclear Medicine Technology
NSG	Nursing
NUR	Nursing
OTA	Occupational Therapy Assistant
PAL	Paralegal
PAM	Paramedic
PHB	Phlebotomy
PHL	Philosophy

PHS	Physical Science	RLE	Real Estate	SPH	Speech
PHT	Pharmacy Technician	RTT	Radiation Therapy Technology	STI	Structural Ironworking Technology
PHY	Physics	RUS	Russian Language & Culture	SUR	Surgical Technology
PLT	Plumbing Technology	SDS	Student Development Services	THE	Theatre
POL	Political Science	SET	Science & Engineering Technology	TRV	Tourism Management
PSY	Psychology	SHM	Sheet Metal Technology	TSA	Transportation Security Administration
PTA	Physical Therapist Assistant	SOC	Sociology	WLD	Welding Technology
RAD	Radiologic Technology	SOE	Stationary Operating Engineer		
RBT	Robotic Technology	SOW	Social Work Technology		
RES	Respiratory Therapy Technology	SPA	Spanish Language & Culture		

COURSE DESCRIPTIONS

Accounting (ACC)

ACC-100 Introduction to Accounting
3 credits/3 class hours

This course is an introduction to the fundamental concepts, procedures and terminology of Accounting. It will address the basic principles of the accounting cycle such as analyzing transactions, journal entries, worksheets, adjustments and closing entries. Bank reconciliations and petty cash processes will also be reviewed. It is aimed toward students who have not had previous exposure to accounting principles. Students who have passed *ACC-104* or higher may not schedule this course.

ACC-104 Financial Accounting
4 credits/4 class hours
Prerequisite: Eligibility for *MAT-090* or completion of *ACC-100* with a C grade or higher.

This is an introduction to the basic concepts of financial accounting, including the preparation, interpretation and utilization of financial statement data. The basic principles and concepts governing the recording and reporting of accounting data including the system of debits and credits will be covered. The course will also cover receivables, notes, inventory, depreciation, plant assets, current and long-term liabilities, as well as corporate accounting topics.

ACC-110 Accounting Applications
3 credits/3 class hours
Prerequisite: *ACC-104*

The course emphasizes payroll preparation, record-keeping and tax reporting, special journal preparation and posting, subsidiary ledger record keeping and month-end and year-end summarizing and reporting. Students learn to use manual and computerized accounting systems.

ACC-115 Integrated Accounting on Computers
1 credit/1 class hour
Prerequisite: *ACC-104*

The course uses a computerized accounting software package. Students will learn computerized production of financial statements, general ledger, depreciation, accounts receivable, accounts payable and payroll using a personal computer.

ACC-120 Computer Applications in Accounting
3 credits/3 class hours
Prerequisites: *ACC-104* & *CIT-100*

This is a course which teaches the use of the computer as a tool for the accountant. Students learn practical and creative uses of an integrated general ledger package and spreadsheets as they are used by accountants. Emphasis is on linking accounting theory and practice.

ACC-201 Intermediate Accounting 1
3 credits/3 class hours
Prerequisite: *ACC-203*

This course provides a study of GAAP (generally accepted accounting principles) as related to financial statements. The course deals with current assets and liabilities, plant assets and intangibles.

ACC-202 Intermediate Accounting 2
3 credits/3 class hours
Prerequisite: *ACC-203*

This is a comprehensive study of financial statements with emphasis on current and long-term liabilities, investments in corporate securities, and owners' equity. Additional topics include leases, pensions, tax allocation changes in accounting principles and cash flow statement.

ACC-203 Managerial Accounting
4 credits/4 class hours
Prerequisite: *ACC-104*

This is a course in utilization of accounting information for the purpose of managerial control and decision-making. Topics include an analysis of financial statements and accounting reports, cash flow analysis, cost-volume-profit analysis, cost accounting concepts and budgeting as tools for planning and control.

ACC-204 Cost Accounting
3 credits/3 class hours
Prerequisite: *ACC-203*

This course covers the basic techniques and procedures used in cost determination. Performance measurements, standard cost, job order methods, cost analysis and control are studied as management tools.

ACC-210 Payroll and Tax Accounting
3 credits/3 class hours

This course is a survey of taxing practices as they affect individuals, partnerships and corporations. Emphasis is on payroll and income taxes at the state and federal levels.

ACC-211 Principles of Tax 1
3 credits/3 class hours
Prerequisite: *ACC-104*

This course provides an analysis of federal income tax structure and procedures. The emphasis is on the federal law as it applies to individuals.

ACC-215 Fundamentals of Oil and Gas Accounting

3 credits/3 class hours
Prerequisite: *ACC-104*

This course is an introduction of the fundamental accounting concepts, procedures and terminology related to the various phases of oil and gas operations. Topics include accounting for exploration, acquisition and development costs, calculating depreciation, depletion and amortization, recording revenue from production activities and learning basic tax accounting for the oil and gas industry.

ACC-221 Principles of Tax 2

3 credits/3 class hours
Prerequisite: *ACC-211*

This course is a continuation of *ACC-211, Principles of Tax 1*. The Internal Revenue Code, Regulations, Rulings and other tax references are used in problem-solving.

ACC-225 Auditing

3 credits/3 class hours
Prerequisite: *ACC-202*

This course introduces intermediate level auditing studies to accounting students possessing no previous auditing experience. Emphasis is placed on a conceptual understanding of auditing principles required to successfully apply auditing procedures and methods to enable the expression of opinions on the fair presentation of required financial statements. Explanations of how concepts are applied in the practice, procedures and policies of the auditing profession are presented. Emphasis is placed heavily on the practice of auditing procedures for both traditional and current areas of interest with the objective of successful completion of the auditing section of the national Certified Public Accountants (CPA) examination, as well as the continued advanced study of accounting for those not pursuing the public practice of accounting.

ACC-230 Advanced Accounting

3 credits/3 class hours
Prerequisite: *ACC-202*

This course introduces students to accounting topics aligned with the Financial Accounting Standards Board Accounting Standards Codification (FASB ASC). The focus is on business combinations which provide the basic knowledge necessary to successfully complete the Certified Public Accountants (CPA) examination. Accounting for derivatives, foreign currency transactions and translations and international reporting standards are included. Additional topics include partnerships, governmentals, antitrust considerations, not-for-profits, variable interest entities, fair value accounting and estates and trusts.

ACC-406 Accounting Co-op

6 credits
Prerequisites: *ACC-104 & ACC-203*

This is a course which provides students an opportunity to enhance their classroom learning with practical experience in actual work situations. Students work in jobs related to the accounting field.

Allied Health (ALH)**ALH-101 Basic Comprehensive Healthcare**

6 credits/6 class hours

This is a course introducing the student to patient needs and providing the skills for patient care. Laboratory and clinical work are planned to correlate with the concepts and principles discussed in the classroom.

ALH-102 Basic Emergency Management

3 credits/3 class hours

This is a course to provide the knowledge and skills to manage an emergency situation that involves personal injury and/or sudden illness. Upon completion of the course, the student will receive certification for cardiopulmonary resuscitation (CPR) from the American Heart Association and advanced first aid and personal safety from the American Red Cross.

ALH-106 Basic Life Support

1 credit/1 lecture hour

This course in basic life support for healthcare providers includes background information about heart disease, risk factors, prudent heart living and heart and lung function. One- and two-rescuer adult cardiopulmonary resuscitation (CPR), foreign body airway obstruction management and pediatric resuscitation are also taught. Students receive certification from the American Heart Association.

ALH-109 Infection Control

2 credits/2 lecture hours

This course will provide the student with the basic concepts regarding infection control, the use of standard precautions and the understanding of an exposure control plan.

ALH-110 Survey of Healthcare and Practice

3 credits/2 lecture & 2 lab hours

This is a course to introduce students to the health occupations and assist them in identifying career goals in the healthcare field. Basic patient care skills such as bed baths, temperature, pulse, respiration and blood pressure assessment will be demonstrated and practiced. Students will also receive certification in first aid and cardiopulmonary resuscitation.

ALH-111 Introduction to Healthcare Organizations

3 credits/3 class hours

This is an introduction to the structure, operation, organization and planning methods of healthcare facilities. Included are the history of hospitals, departmental functions, organizational structure, public relations and legal structure. Emphasis is placed on the operational structure and the role of the healthcare team in today's medical community.

ALH-112 Health Issues and Occupations

3 credits/3 class hours

This course introduces the learner to diverse aspects of healthcare in the United States today. Practical areas of interest to both the consumer and the provider are identified. Patient rights, institutions and organizations providing care, healthcare costs, controversial approaches to healthcare and an exploration of the roles of healthcare providers highlight the content of the course. Guest speakers provide insights into selected areas.

ALH-113 Alternative/Complementary Medicine

3 credits/3 class hours

This is a course to explore the philosophy and psycho physiology of body-mind-spirit relationships and to understand and explore various strategies and modalities of ancient healing arts and to integrate them into mainstream medicine. The course will consider these therapies to be complements to orthodox medical treatments and not replacements for them. The course will explore these alternative therapies from various disciplines and consider the application of them in daily practice.

ALH-125 Pharmacology

3 credits/3 class hours

Prerequisites: *BIO-103 or BIO-161 & BIO-162*

This course is designed for the nursing/allied health student to acquire comprehensive knowledge of pharmacotherapeutic agents in clinical use. A body systems approach will be utilized. Drug classification, mechanism of action, therapeutic effects, generic equivalents and implications of administration will be emphasized.

ALH-140 Medical Terminology
3 credits/3 class hours

Medical terminology is a basic study of the professional language of medicine. It is designed to include word construction, pronunciation, spelling, definition and use of terms related to all areas of medical science, hospital service and health related professions. This course is designed to give the student a basic knowledge of anatomy, pathology, surgical procedures, diagnostic procedures and symptomatology.

ALH-142 Trends and Issues in Health Care
1 credit/1 lecture hour

This course utilizes the seminar format to explore issues which confront today's healthcare provider. Topics include managed care, health law and ethics and preparation for the transition from school to work.

ALH-143 Preprofessional Seminar
3 credits/2 lecture hours & 3 field observations

This course is designed to give students planning careers in dentistry, pharmacy, medicine, chiropractic, podiatry, physician assistant or veterinary medicine, a guided exploration of these career paths. Through the use of reading assignments, lectures, guest lecturers and field observations the student will have a better perspective of the academic, personal and professional requirements of their chosen profession.

ALH-230 Nonviolent Crisis Intervention
1 credit/1 lecture hour

This comprehensive course offers techniques and strategies to effectively deal with disruptive and/or assaultive individuals in the workplace. Through lecture, videotapes and role-play, students will identify the four stages of crisis, develop skills in verbal, non-verbal communication and empathetic listening. Physical restraint techniques to diffuse assaultive behavior will also be addressed.

Anthropology (ANT)

ANT-101 Introduction to Anthropology
3 credits/3 class hours



This course is a scientific inquiry into human variability across space and time. The evolution of humanity's biocultural nature, from prehistory to present times, is examined. This draws upon evidence from archaeology, physical anthropology/human paleontology, ethnography and linguistic anthropology.

ANT-102 Cultural Anthropology
3 credits/3 class hours

This course is a study of the structure of human sociocultural systems that emphasizes economy, kinship, political organization, social control, social stratification, belief systems and language. The course deals with cultural variations among living populations of the present and recent past whose cultures have been described by ethnographic fieldworkers. Selected case studies are read, discussed and compared to stimulate a fuller appreciation of our common humanity.

ANT-103 Physical Anthropology
3 credits/3 class hours

This course is a study of human biological variability across space and time. The course utilizes the analytical tools of evolutionism and ecological analysis to track the evolution of human nature across prehistory. Emphasis is placed on the interdependency of the logics of basic Mendelian genetics and of the Darwinian theory of natural selection. This framework is used to organize and interpret holistically evidence of human evolution drawn from human paleontology, prehistoric archeology and primatology.

ANT-104 Native American Indians of North America
3 credits/3 class hours

This course is an ethnographic survey of Native tribes of North America (north of Mexico) from paleoindians to contemporary tribes/nations. Presentations by Native Americans and field trips are a part of this course.

ANT-107 Introduction to Archaeology
3 credits/3 class hours

This course is designed to introduce students to the goals and techniques of modern, scientific archaeology. Archaeology is the study of the human cultural past through the analysis of the material left behind by past societies. The course will survey world prehistory from the evolution of ancestral hominin species through the rise of ancient civilizations. The ethical, legal and political issues involved in conducting archaeology in the United States today will also be explored.

ANT-110 Forensic Anthropology
3 credits/3 class hours

This course offers an overview of the scope of modern forensic anthropology. Major areas covered include personal identification and legal consideration, search and recovery, interpretation of trauma and taphonomy, analytical techniques and applications of forensic anthropology. Case presentations will be utilized to demonstrate professional and ethical responsibilities, scientific rigor and the multidisciplinary approach of forensics. Please note this course does not satisfy the requirements for the CJC program.

ANT-117 Globalization
3 credits/3 class hours

This course is a study of the causes and consequences of the globalization process. Causes are explored in social-evolutionary, historical and macrosociological contexts. Major consequences for the quality of contemporary life on earth are examined. Those consequences include: global degradation and hyper-exploitation of human labor; global poverty and hunger; consumerism and global environmental degradation; global public health crises; internal wars and the international refugee problem; ethnocide, genocide, and the global assault on human diversity; and militarism, wars and the threat of global destruction. In addition, implications for governance, national sovereignty and the future of democracy are explored. Resistance to globalization and prospects for the future are also examined.

Arabic Foreign Language & Culture (ARA)

ARA-101 Elementary Arabic 1
3 credits/3 class hours

This course develops the basic skills of listening, speaking, reading and writing Arabic. Students will study Arab culture including religion, dress, food and everyday life. Class participation includes exercises in pronunciation, reading, dictation, translation and grammatical patterns.

ARA-102 Elementary Arabic 2
3 credits/3 class hours
Prerequisite: *ARA-101* or with permission of instructor

This course further develops a student's knowledge and understanding of Arabic. Students will study Arab culture including religion, dress, food and everyday life. The course includes advanced communication skills, listening, reading, writing, speaking and culture using the basic building blocks of vocabulary and grammar. This course is a continuation of *Elementary Arabic 1*.

Art History & Studio Art (ART)

ART-103 Art History—Ancient 3 credits/3 class hours

This is a course to develop an understanding and appreciation of the visual arts and artistic periods of western civilization from the pre-historic through medieval Europe to the Renaissance.

ART-104 Art History—Modern 3 credits/3 class hours

This is a course to develop an understanding and appreciation of the major visual artists and art movements of western civilization from the Renaissance to contemporary times.

ART-106 Art Appreciation 3 credits/3 class hours



This course is intended to be a first level introductory art course for beginning art students, as well as the student seeking a humanities elective in the visual arts. The student's appreciation of art will be developed through aesthetics, disciplines, critical evaluations, projects, history and attendance at a real or virtual art show.

ART-109 Drawing 1 3 credits/5 studio hours



This is a course in drawing using dry and wet media. Subject matter ranges from perspective to accurately rendered objects and the human body. Students develop imagination, perception and technical skills. The focus is on the ability to observe form as a unique, creative, individual response.

ART-113 Graphic Communication 3 credits/5 studio hours

This course will develop the student's ability to communicate ideas and messages. The field of graphic communications will be explored through history, research and examples. Industry proven assignments covered in the course include advertising, identity systems, information design and event promotion. Aesthetic and technical skill development will be examined in the phases of design of traditional sketch through to finished digital and printed presentation.

ART-114 Two-dimensional Design 3 credits/3 lecture and 5 lab hours

This course involves exploring and completing projects in various media that demonstrate principles of design in black and white, in a number of values and in color. Students study the use of line, value, shape, form/space and color. Projects must show evidence of balance, rhythm, movement, figure-ground, figure-ground reversal, proximity, repetition, closure, perspective, unity and variety and color harmonies.

ART-122 Painting 1 3 credits/5 studio hours Prerequisite: ART-109 recommended

This is a course to teach the fundamentals of painting with oils or acrylics. Emphasis is on color theory and its practical application. Students should have a basic understanding of art composition and the abilities to sketch their concepts.

ART-129 Printmaking 1 3 credits/5 studio hours

This course is an introduction to various printmaking processes, including relief, stencil and intaglio. Students learn the proper use of tools, inks and paper through exploration and the production of edition prints.

ART-130 Photography 1 3 credits/5 studio hours

This course is a survey of the aesthetics and history of photography. Methods of camera operation, lighting, exposure, darkroom procedures, printing and enlarging are studied. The criterion of visual images as communication is stressed. An inexpensive 35mm reflex camera is needed for this course.

ART-137 Ceramics 1 3 credits/5 studio hours

This is an introductory course in ceramics. Students learn the proper use of tools and techniques to create three-dimensional works through this very plastic medium. Slab and coil construction, wheel throwing, glazing and firing are studied.

ART-138 Sculpture 1 3 credits/5 studio hours

This is a course presenting both the historical and contemporary techniques of sculpture. Materials such as clay, wood and stone, as well as methods and work in welding, carving, casting, modeling and nonmetallics are included.

ART-142 Jewelry Making 1 3 credits/5 studio hours

This is an introductory course exploring metal fabricating and casting. Basic metalsmithing techniques are employed in the making of finished pieces of jewelry and objects of art.

ART-144 Digital Photography 3 credits/3 lecture & 5 studio hours Prerequisites: Digital camera & Windows experience or permission of the instructor

This course will provide students interested in photography with the fundamental principles of a captured image with a digital camera. Besides camera basics, other topics to be studied are: composition, aesthetics, legal and ethical considerations, advantages to conventional photography and creativity from camera to computer (the digital darkroom).

ART-148 Color 3 credits/5 studio hours

This is an introduction to basic color theory. The application of color theory to painting, design and the development of individual color sensitivity are stressed. Studies may include color physics, the psychology of color, color expression, impression and composition.

ART-150 Introduction to Digital Graphic Design 3 credits/5 studio hours Prerequisite: Eligibility for ENG-101

This introductory course utilizes current digital hardware and software used in the industry as the primary tools for graphic design. The student will learn the design skills necessary to develop conceptualized ideas on projects that are viable in today's graphic design field.

ART-153 Raku—Low Fire Ceramics 1 3 credits/5 studio hours

This course is an introduction into Raku and low fire clays, glazes and firing techniques. Students make clay objects either on the wheel or by hand and set up a Raku kiln.

ART-154 Ceramic Sculpture 3 credits/5 studio hours

This course is an introduction to clay sculpture. Three-dimensional aspects of form are covered along with methods of clay modeling through relief and free-standing sculpture.

ART-165 Digital Publishing
3 credits/5 studio hours
Prerequisite: *ENG-101* eligibility

This course is an examination into the digital publishing field that focuses on page layout and design. This course will involve working on projects common in the publishing field. This course will utilize current desktop publishing software.

ART-168 Digital Imaging
3 credits/5 studio hours
Prerequisite: Windows experience or permission of the instructor

This course covers art theory as applied to photography and digital imaging. Techniques of image editing, enhancement and layering may be applied to individual images, collage and composites suitable for a portfolio.

ART-170 Web Graphic Design
3 credits/5 studio hours
Prerequisites: *ENG-101* eligibility & Windows experience or permission of the instructor

This course studies the field of graphic design and how it is implemented into the web page design. Initially the student will learn how to prepare media for the web such as typography, digital imaging and animation. During the course the student will implement prepared media and design theory into a personalized website that will be published on the world wide web.

ART-207 Drawing 2
3 credits/5 studio hours
Prerequisite: *ART-109*

This course emphasizes the study of human form as it has been described from the Renaissance to modern times. There is exploration of various wet and dry media as applied to various surfaces.

ART-222 Painting 2
3 credits/5 studio hours
Prerequisites: *ART-122* or *ART-109* & *ART-148*

This course is a continuation of *ART-122* and for students planning to extend the study of art to the media of paint. Studio exercises include the study of the figure, still life and landscape.

ART-223 Three-dimensional Design
3 credits/5 studio hours
Prerequisite: *ART-114*

This course involves the applications and theories related to objects in the round and is a sequel to *2-D Design*. The student will explore the principals of design through projects created from materials like paper, cardboard, clay and wood. Calculations of materials to spatial criteria, constructive methods and practical applications are applied.

ART-229 Printmaking 2
3 credits/5 studio hours
Prerequisite: *ART-129*

This is a continuation of *ART-129*, exploring printing processes in-depth with an emphasis on multi-color prints.

ART-230 Photography 2
3 credits/5 studio hours
Prerequisite: *ART-130* or equivalent experience

This course is a continuation of *ART-130* to improve upon the skills of students who have demonstrated proficiency in basic photography. Continued use of 35 mm camera and the study of medium to large format camera are conducted. An advance technique with camera in darkroom is explored to produce creative and professional work.

ART-232 Photo Journalism
3 credits/lecture & studio
Prerequisite: *ART-130*

This is a course to develop professionalism in photographic reporting. Quality photographic reporting for newspapers, magazines, advertising and portfolios is covered. The student develops greater confidence and ability in darkroom techniques.

ART-237 Ceramics 2
3 credits/5 studio hours
Prerequisite: *ART-137*

This course is a continuation of *ART-137*. Students use their technical expertise to create more ambitious and individual forms through hand-building techniques or wheel thrown work. Glaze technology and firing are explored.

ART-238 Sculpture 2
3 credits/5 studio hours
Prerequisite: *ART-138*

This course is a continuation of *ART-138*. Students use their technical expertise with media such as clay, plaster, wood and/or metal to work independently on class projects. Fabrication and construction techniques will be covered.

ART-242 Jewelry Making 2 and Advanced Metal-Smithing
3 credits/5 studio hours
Prerequisite: *ART-142*

This course is a continuation of *ART-142*, emphasizing advanced jewelry making techniques through complex design. Techniques may include fabricating three-dimensional objects from sheet metal, closures and surface treatment. Other approaches will be explored.

ART-250 Advanced Digital Graphic Design
3 credits/5 studio hours
Prerequisite: *ART-150*

This course is a continuation of *ART-150* but will expand on design skills with more intense focus on specific projects such as upcoming events and current design trends. In addition, the student will enhance technical awareness of digital hardware and software as it relates to contemporary standards.

ART-252 Painting 3
3 credits/5 studio hours
Prerequisite: *ART-222*

This course is a continuation of *ART-222*. Emphasis is on developing a personal style through a series of works. Studio exercises may include the human figure and still life.

ART-253 Raku—Low Fire Ceramics 2
3 credits/5 studio hours
Prerequisite: *ART-153*

This course is a continuation of study in low firing processes concentrating on Raku firing, kiln design, kiln building and glaze composition. Students will use their technical expertise to create more ambitious and individual forms.

ART-256 Printmaking 3
3 credits/5 studio hours
Prerequisite: *ART-229*

This is a course designed to develop the student's particular direction in printmaking processes. A personal aesthetic is identified and explored through further understanding of the print medium. Techniques for multi-colored presentations will be examined.

ART-258 Ceramics 3
3 credits/5 studio hours
Prerequisite: *ART-237*

This course builds on previous knowledge acquired in *ART-137* and *ART-237*. Working closely with the instructor the student will further define and refine his/her personal direction in ceramics.

ART-260 European Art and Architecture
3 credits
Prerequisite: Current passport

This course is an on-site survey of European art and architecture. This student will experience first-hand the work of some of the great European artists.

ART-265 Portfolio
3 credits/3 lecture & 5 studio hours

This is a course only for Art and Graphic Communication majors. The course will concentrate on the various aspects of preparation towards job and transferring requirements. This course is designed to better prepare students for the different qualifications in the arts through a portfolio. Different techniques of recording, presenting and cataloging various art works are examined, as well as developing a personal resume. Students should have a credible body of artwork produced under college level instruction available for use in class.

ART-291 Advanced Art Workshop 1, 2, 3, 4
ART-292 3 credits/5 studio hours
ART-293
ART-294

Prerequisites: *ART-122*, *ART-222*, *ART-252* plus permission of the instructor

The student will learn to develop elements of artistic expression through self-analysis of style and direction and in-depth individualized exploration of aesthetics within a specific discipline or media.

American Sign Language (ASL)

ASL-100 Introduction to American Sign Language
1 credit/.5 lecture & 1 lab hours

This course will develop the student's basic skills of receiving and expressing American Sign Language (ASL). Students will develop these skills through exercises in articulation, reception, translation and grammatical patterns.

ASL-101 Elementary American Sign Language 1
4 credits/2.5 lecture & 1.5 lab hours

This course develops the basic skills of receiving and expressing American Sign Language. Class participation includes exercises in articulation, reception, translation, grammatical patterns and description of objects and events.

ASL-102 Elementary American Sign Language 2
4 credits/2.5 lecture & 1.5 lab hours
Prerequisite: *ASL-101*

This course continues to develop the basic skills of receiving and expressing American Sign Language. Class participation includes exercises in articulation, reception, translation grammatical patterns and description of objects and events.

ASL-104 Visual Gestural Communication
3 credits/3.2 lecture hours (13 weeks)

Visual gestural communication (VGC) provides a means of bypassing vocabulary and strict grammar rules of a language and aiming directly at other very important components of effective communication. These include 1) cohesion—the sequencing of relevant pieces of communication so that they hang together and make sense; 2) monologic discourse—the rules of building sequences to a point of

climax and resolution in narratives; 3) dialogic discourse—the rules of turn taking and interrupting in dialogic discourse; and 4)stylistics—the confidence, character and personality expressed while communicating. All four of these variables are essential for fluent language use and can be practiced via VGC, even though VGC is not itself a language.

ASL-109 Deaf Culture
3 credits/3 lecture hours
Prerequisite: *ASL-101*

The Deaf community is a complex and diverse community with a rich heritage and prosperous future. This course focuses on three aspects of the Deaf community and culture: 1) historical perspectives and cultural norms within the Deaf community; 2) diversity within the Deaf community; and 3) artistic expression and humor.

ASL-201 Intermediate American Sign Language 1
3 credits/2.5 lecture & 1 lab hours
Prerequisite: *ASL-102* or department permission

This course increases students' basic skills of receiving and expressing American Sign Language (ASL). Students study translations, grammatical patterns, cultural and literary materials, dialogues and conversational activities.

ASL-202 Intermediate American Sign Language 2
3 credits/2.5 lecture & 1 lab hours
Prerequisite: *ASL-201*

This course builds upon *ASL-201* by increasing students' skills of receiving and expressing American Sign Language (ASL). Students study translations, grammatical patterns, cultural and literary materials, dialogues and conversational activities. Students study components of visual gestural communication in this course.

ASL-212 American Sign Language Literature
3 credits/2 lecture and 1 lab hours

This course provides an advanced investigation of American Sign Language (ASL) literature, concentrating on the features of ASL narratives and a history of Deaf artists. Instruction will focus on story-telling techniques and the organization of ASL narratives.

Automotive Technology (ATE)

ATE-101 Basic Automotive Service
2 credits/2 class hours

This course will introduce the student to the automotive service repair industry. This course covers the fundamentals of automotive service, personal and shop safety, vehicle care and maintenance and minor automotive services.

ATE-103 Automotive Systems—Minor Service
3 credits/2 lecture & 2 lab hours

This course introduces the student to shop operations that would be performed by an entry-level technician. This includes an introduction to shop safety, the use of basic shop equipment, hand tools and service information for factory-recommended repair procedures. The student will learn the use of measuring equipment including micrometers, calipers and dial indicators. The course includes service procedures for lubrication, routine maintenance, basic repairs, tire repair and new car pre-delivery inspection. Certain course sections will be manufacturer specific.

ATE-106 Emission Inspector Certification
1 credit/1 class hour

This course is a Pennsylvania State-directed Emission Inspector Certification program. It is designed for anyone wishing to become Pennsylvania certified to perform emission inspections on passenger cars and light trucks. This course is graded on a pass/fail basis.

ATE-108 State Inspection Certification

1 credit/1 class hour

This course is a Pennsylvania State-directed Safety Inspection Certification program. It is designed for anyone wishing to become Pennsylvania certified to perform safety inspections on motor vehicles. This course is graded on a pass/fail basis.

ATE-121 Electrical Systems and Power Accessories

3 credits/2 lecture & 2 lab hours

This course covers electrical principles, including voltage, resistance, current flow, series and parallel circuits and Ohm's Law relating to the automobile. This course also covers the operation, testing and repairing of the starting and charging systems, including electrical accessories. Certain course sections will be manufacturer specific.

ATE-122 Electronic Systems

3 credits/2 lecture & 2 lab hours

Prerequisite: *ATE-121*

This course includes the theory, operation and application of electronic sensing devices. The computer process of sensing a condition, deciding on an output and controlling the output will be covered in detail. Students will study computer networking as it applies to the vehicle. Students will use specific test equipment to interface with the vehicle's computer system to analyze and diagnose vehicle faults. Certain course sections will be manufacturer specific.

ATE-126 Steering and Suspension

4 credits/2 lecture & 4 lab hours

This course introduces students to industry-recognized diagnosis and replacement of steering components in power steering systems and suspension systems. Topics include tire repair and replacement, computerized wheel balancing, suspension and steering component inspection, strut service and computerized four-wheel alignment. Certain course sections will be manufacturer specific.

ATE-130 Automotive Brake Systems

3 credits/3 lecture

Prerequisite: *ATE-103*

This course covers the diagnosis, troubleshooting and repair of disc and drum brake systems, power brake boosters, master cylinders, wheel cylinders and related components. Certain course sections will be manufacturer specific.

ATE-131 Major Engine Service

4 credits/3 lecture & 2 lab hours

This course will introduce students to major engine repair using industry-approved procedures. Emphasis will be placed on component identifications, the proper use of measuring tools and determining the reusability of parts to restore engines to factory approved specifications. Students will be able to make clearance checks, replace piston and rings, inspect and replace crankshaft bearings, service valve train components and make all required timing adjustments. Diagnosis of internal engine component failures using industry-recognized tools and techniques will also be covered. Certain course sections will be manufacturer specific.

ATE-151 Automotive Climate Systems

3 credits/2 lecture & 2 lab hours

This course covers the principles of refrigeration, air conditioning controls and the diagnosis, trouble-shooting and repair of automotive heating and air conditioning systems. Certain course sections will be manufacturer specific.

ATE-160 Advanced Automotive Electricity/Electronics

3 credits/3 class hours

Prerequisite: *ATE-122*

This course reinforces the theories and approaches learned in *ATE-121* and *ATE-122* by extending the student's skill level by performing the latest in diagnostic

technology. Using shop manuals and technical bulletins, combined with the latest diagnostic equipment, students will practice troubleshooting systems such as anti-lock brakes, electronic steering and suspension controls, electronic body controls, anti-theft systems and other systems as released by the manufacturers. Students will be introduced to hybrid safety and design. Certain course sections will be manufacturer specific.

ATE-206 Automotive Industry Supervision

4 credits/4 class hours

This course is to provide an overview of the management techniques used in the automotive service industry and to prepare the student for a supervisory role in the independent shop or a dealership. Content areas include: marketing techniques, personnel management, work scheduling, job estimating, customer relations and automotive parts and service merchandising.

ATE-207 Advanced Engine Performance

4 credits/2 lecture & 4 lab hours

Prerequisite: *ATE-245*

This course covers the terminology, theory and operation of the computerized on-board diagnostic (OBD) system found on current vehicles. Students will apply their knowledge of the ignitions, fuels, emissions and engines to diagnose vehicle drivability-related problems. Students will use specific test equipment and procedures to isolate vehicle problems and utilize the chassis dynamometer to complete OBD II monitors and diagnose vehicle faults. The use of hybrid technology to enhance engine performance and economy will be covered. Some course sections will be manufacturer specific.

ATE-230 Engine Performance 1

3 credits/2 lecture & 2 lab hours

Prerequisites: *ATE-122 & ATE-131*

This course provides a study of the conventional, electronic and distributorless/coil over-plug ignition systems. Students will become acquainted with automotive ignition systems and troubleshoot and/or diagnose ignition problems. An introduction to chassis dynamometer operation and safety will be covered. Emphasis is placed on troubleshooting and the proper use of electronic test equipment. Certain course sections will be manufacturer specific.

ATE-234 Standard Transmissions, Transaxles and Drivetrain

3 credits/3 lecture & 2 lab hours

This course will introduce the student to the design, assembly, operation and diagnostic procedures for clutches, manual transmissions, transaxles, differential components and drive axle components. Drive train vibration analysis and noise correction will also be covered. Certain course sections will be manufacturer specific.

ATE-235 Automatic Transmissions and Transaxles

5 credits/3 lecture & 5 lab hours

This course will introduce the student to the theory and practical application of the automatic transmission and transaxle. Transmissions and transaxles are studied with emphasis on diagnosis and repair of hydraulic systems, mechanical systems and electronic control systems. On-car diagnostic procedures will be practiced in conjunction with industry-recognized service manual information. Certain course sections will be manufacturer specific.

ATE-245 Engine Performance 2

4 credits/2 lecture & 4 lab hours

Prerequisite: *ATE-230*

This course covers, in detail, the theory, operation and diagnosis of computerized fuel injection and emission control systems. The student will verify the operation of fuel and emission control systems utilizing diagnostic test equipment to include a chassis dynamometer. Certain course sections will be manufacturer specific.

ATE-250 Automotive Internship 1

1 credit/400 practicum hours

Prerequisites: *ATE-101* & department recommendation

This internship adds a professional opportunity for “hands-on” experience with all the skills and knowledge gained in the automotive program courses. Employment with a commercial auto or truck repair business with a minimum of 400 verifiable working hours is required to complete this course. The work hours logged must be in ASE categories A1 through A8.

ATE-251 Automotive Internship 2

1 credit/400 practicum hours

Prerequisites: *ATE-250* & department recommendation

This internship is a continuation of Automotive Internship 1 (*ATE-250*) to further provide students a professional opportunity for “hands-on” experience with all the skills and knowledge gained in the automotive program courses. Employment with a commercial auto or truck repair business with a minimum of 400 verifiable working hours is required to complete this course. The work hours must be logged in ASE categories A1 through A8.

Aviation Technology (AVT)**AVT-101 Private Pilot Theory**

3 credits/3 class hours

Corequisite: *AVT-103*

This course provides a study of the principles of flight, specifically covering all data needed to obtain a private pilot certificate as regulated by the Federal Aviation Administration (FAA—Part 141). On completion of *AVT-101*, *AVT-103* and *AVT-105*, the student should be able to pass the FAA written examination for private pilot certification.

AVT-103 Air Traffic Control System

3 credits/3 class hours

Corequisite: *AVT-101*

This course is a study of the development, growth and usage of the air traffic control system with emphasis on its use in the United States. The course will also introduce common aviation terminology and expand upon basic Private Pilot aeronautical knowledge.

AVT-105 Flight/Private

3 credits/1 class & 4 lab hours

Prerequisite: Second-class medical student pilot certificate

Corequisite: *AVT-101*

This course provides the student with flight instruction and experience at a Federal Aviation Administration (FAA), Part 141 approved flight school. The student will complete the dual and solo flight time requirements including pre- and post-flight briefings and required stage exams. A valid second class medical certificate is required to begin this course. The student must pass the FAA private pilot practical exam to obtain a private pilot certificate in order to successfully complete the course.

AVT-110 Aviation Meteorology

3 credits/3 class hours

Corequisite: *AVT-101*

This course provides a study of weather and safe aircraft flight. Topics include effect of air pressure, temperature, moisture, fronts, thunderstorms and related meteorological phenomena. Students use all available weather forecasting and reporting data to promote safe flight.

AVT-111 Flight Theory/Instrument

3 credits/3 class hours

Prerequisites: *AVT-101*, *AVT-103*, & *AVT-105*

This course covers the aeronautical knowledge needed to sit for the Federal Aviation Administration (FAA), Part 141 Instrument Pilot Knowledge exam. Successful completion of this course will authorize the student to sit for the exam.

AVT-115 Flight/Instrument

3 credits/1 class & 4 lab hours

Prerequisites: *AVT-101*, *AVT-103* & *AVT-105*Corequisite: *AVT-111*

This course provides the student with the required flight training to obtain the instrument rating. The course includes necessary flight training as well as the requisite stage exams while preparing a student for the Federal Aviation Administration (FAA) instrument pilot practical exam. All training follows FAA Part 141 regulations. A second class medical certificate is required to take this course. Successful completion of this course requires obtaining the instrument rating by passing the FAA instrument pilot practical exam.

AVT-116 Navigation

3 credits/3 class hours

Prerequisite: *AVT-103*

This course is a study of air navigation beginning with a review of pilotage and dead reckoning and continuing through the use of available radio guidance systems, on-board radar and flight director. Plotters, navigation computers, aerial charts and FAA publications and manuals are studied.

AVT-201 Aircraft Systems

3 credits/3 class hours

Prerequisite: *AVT-101*

This course is a study of the components and operation of the systems of an aircraft, including hydraulic, electrical, fuel, oil, pressurization, mechanicals, anti-icing and the interrelationship of directional guidance. Also studied are engine/pro propulsion systems ranging from basic piston engines to sophisticated jet propulsion.

AVT-205 Flight—Commercial 1

4 credits/2 class & 4 lab hours

Prerequisite: *AVT-111*, *AVT-115*Corequisite: *AVT-211*

This course will develop the commercial pilot skills necessary for the Federal Aviation Administration (FAA) commercial pilot practical exam. The course provides instruction and flight experience including pre and post flight briefings as well as the dual and solo flights necessary to complete the approved hours for the commercial pilot exam. A second class medical certificate is required to take this course.

AVT-211 Flight Theory Commercial

4 credits/4 class hours

Prerequisite: *AVT-111*, *AVT-115*Corequisite: *AVT-205*

This course will provide the aeronautical knowledge necessary to receive authorization to sit for the Federal Aviation Administration (FAA) Part 141 commercial pilot knowledge exam. The course provides instruction and flight experience and includes complex aircraft operations, understanding of commercial regulations and multi-engine principles of flight.

AVT-215 Flight/Commercial 2

4 credits/2 class & 4 lab hours

Prerequisites: *AVT-205* & *AVT-211*

This course is a continuation of the commercial flight course. It includes the Federal Aviation Administration (FAA) required hours of instruction in a complex aircraft and flight experience including pre and post flight briefings as well as dual and solo flights. A second class medical certificate is required to take this course. For successful completion of the course, the student must successfully pass the FAA Part 141 commercial pilot practical exam.

AVT-216 Flight Safety
3 credits/3 class hours
Prerequisites: *AVT-201 & ENG-101*
Corequisite: *AVT-211*

This is a course in safe flight from pre-flight planning through the requirements for accident reports. Sources include the Airman's Information Manual, FAA Regulations and FAA-sponsored materials.

AVT-217 Legal Environment of Aviation
3 credits/3 class hours
Prerequisites: *AVT-101 & ENG-101*

This course is a study of law affecting the aviation industry including administrative agencies, liability, negligence, aircraft accident reporting, airline and various particular applications.

AVT-220 Multi-engine Theory
1 credit/1 class hour
Prerequisites: *AVT-103 & AVT-105*

In this course students will acquire the aeronautical knowledge needed to meet the requirements specified in the FAA Regulations-Part 141 for the multi-engine pilot written examination.

AVT-225 Multi-engine Flight
1 credit/1 class hour
Prerequisite: *AVT-105*
Corequisite: *AVT-220*

An FAA 141 approved fixed base operator will give multi-engine flight training in modern twin-engine aircraft. The course is designed to give a pilot a minimum of 10 hours of flight instruction including 10 hours of oral instruction and briefing. Successful completion will be passage of the FAA Multi-engine Pilot Rating Flight Test.

AVT-250 Certified Flight Instructor Airplane Theory
3 credits/3 class hours
Prerequisite: *AVT-211*

This course prepares the commercial pilot to meet the FAA 141 ground requirements for the CFI-A certification. A minimum of 40 hours instruction in practice teaching, theory review and the knowledge necessary to pass the FAA CFI-A written exam, as well as the FAA Fundamentals of Instruction Written Exam.

AVT-255 Certified Flight Instructor Airplane Flight
1 credit/1 class hour
Prerequisite: *AVT-215*
Corequisite: *AVT-250*

This course prepares the commercial pilot to meet the FAA 141 flight requirements for the CFI-A certification. A minimum of 20 hours of flight instruction in practice teaching, flight theory and analysis of flight maneuvers.

AVT-260 Certified Flight Instructor Instrument Theory
2 credits/2 class hours
Prerequisite: *AVT-250*

This course prepares the commercial pilot to meet the FAA 141 ground requirement for the CFI-I certification. A minimum of 30 hours of instruction in practice teaching of instrument flight theory and the knowledge necessary to pass the FAA CFI-I Written Examination.

AVT-265 Certified Flight Instructor Instrument Airplane Flight
1 credit/20 lab hours
Prerequisites: *AVT-250 & AVT-255*
Corequisite: *AVT-260*

This course prepares the commercial pilot to meet the FAA 141 flight requirements for the CFI-A certification. A minimum of 20 hours of flight instruction in practice teaching, flight theory and analysis of flight maneuvers.

Biology (BIO)

BIO-100 Life Science
3 credits/3 class hours

This is an introduction to biology for non-biology majors. The course introduces fundamental concepts pertaining to the cell, multicellular organisms and environmental relationships. This course does not satisfy a biology requirement for the biology major.

BIO-103 Introduction to Human Biology
3 credits/3 class hours

This course familiarizes students with the basic structure and functions of the human body. It deals with the chemical, cellular and physiological principles on which human life is based. The normal organization and function of the body's organ systems are covered along with selected disorders. This course does not satisfy a biology requirement for the biology major.

BIO-107 Pharmacology
3 credits/3 class hours

This course is an introduction to drug information for health professionals or paramedic personnel. This course surveys the pharmacokinetics of drugs, drug calculation, mechanisms of drug action, side effects and the toxic effects of drugs. Also included are specific clinical conditions and the underlying pathophysiology requiring drug intervention.

BIO-110 Introduction to Biological Science
4 credits/3 lecture & 3 lab hours



This course is an introduction to fundamental life processes. Emphasis is on molecular biology that includes the study of micro and macro molecules. Cellular biology is also emphasized including structure, function, reproduction and genetics. This course incorporates an introduction to laboratory skills that includes the scientific method, metric system and microscopy.

Many institutions will accept this course as a science elective for non-biology majors. This course does not satisfy a biology requirement for biology majors. Students should consult a transfer counselor.

BIO-115 Human Biology in Health and Disease
5 credits/4 lecture & 3 lab hours

This course is an introduction to human anatomy and physiology and provides an overview of specific organ systems. The common diseases in each of the organ systems as well as common diagnostic procedures and therapeutic measures are studied.

BIO-117 Introduction to Nutrition
3 credits/3 class hours

This is a course which introduces the principles of nutrition. The course stresses a scientific foundation for nutrition that allows students to develop a personal diet and dietary practices that are associated with good health. Emphasis is placed on nutritional literacy with regard to the distinguishing information based on science from information based on unsubstantiated claims.

BIO-120 Human Reproduction and Sexually Transmitted Disease
3 credits/3 class hours

This is a course which introduces the anatomy and physiology of male and female reproductive systems along with topics such as pregnancy and contraception. The second part of the course focuses on human sexuality and sexually transmitted diseases.

BIO-121 Principles of Sustainability
3 credits/3 class hours

This course is designed to allow a student to develop an understanding of sustainable systems from an environmental, economic and equity (social justice) point of view. Students will learn to critically evaluate these concepts when considering personal, business and community issues.

BIO-123 Medical Biology and Terminology
3 credits/3 class hours

This is a course that develops a working knowledge of the medical biology and terminology used by medical personnel. It familiarizes students with basic terms in anatomy, physiology and the pathology of the human body. The terminology is presented system by system. This course does not fulfill the science requirement for graduation in a degree program.

BIO-133 Environmental Science
3 credits/3 class hours

This is a course to develop understanding of ecosystem structure and function, population dynamics, use of natural resources, disposal of waste materials and current topics in environmental science.

BIO-140 Food Microbiology
3 credits/2 lecture & 2 lab hours
Prerequisite: College-level reading

This is a course intended for non-science majors who require a basic knowledge of microbes affecting food. The course provides a broad introduction to cells and their components, the distinct features of microbes and their role in food spoilage and food borne illnesses. Additional topics discussed include: aseptic techniques, food testing and the effectiveness of sanitation techniques.

BIO-150 Environmental Seminar
1 credits/1 lecture hour

This course deals with the identification of and the possible solutions for regional environmental issues. Students learn to critically evaluate these concepts while considering personal, business and community issues. Local experts discuss environmental topics with students and field trips to appropriate local sites are taken.

BIO-151 General Biology 1
4 credits/3 lecture & 3 lab hours
Prerequisites: Eligibility for *ENG-101*, *MAT-108* & *BIO-110*
or two high school science classes (one a biology with lab) with a grade of C or better in the last five years



This course introduces students to atomic structure, important bioorganic molecules, cellular structure and function, cellular reproduction, genetic principles and biotechnology. Selected topics include an overview of cellular biochemistry, with emphasis on cellular respiration and photosynthesis. The accompanying laboratory program allows students to practice scientific procedures by conducting investigations which are coordinated with lecture topics.

This course transfers to most four-year institutions. Students should consult a transfer counselor.

BIO-152 General Biology 2
4 credits/3 lecture & 3 lab hours
Prerequisite: *BIO-151*



In this course there is an emphasis on plants and animals, particularly with regard to evolution, phylogeny and physiology. Darwinian principles of evolution and natural selection are underlying themes throughout the semester. Also included is a study of population genetics and mechanisms of speciation and conservation biology. Students are introduced to the development of organ systems throughout plant and animal groups. The laboratory program presents the domain and kingdom classification systems from the viewpoint of phylogeny and anatomy.

BIO-160 Introduction to Human Pathology
3 credits/3 class hours
Prerequisite: *BIO-110* or *BIO-151*

This is a course that introduces students to the major medical and surgical diseases. Basic biological concepts essential to the understanding of diseases and disease processes are stressed. Etiology, diagnoses and stages of the disease process are presented.

BIO-161 Anatomy and Physiology 1
4 credits/3 lecture & 3 lab hours
Prerequisite: *BIO-110* or *BIO-151*



This is a course in systemic human biology for students in allied health, nursing, physical education and other fields requiring a background in human biology. The focus of the course is normal anatomy and physiology, with reference to pathological situations as appropriate. The course focuses on body organization; tissues; and the integumentary, skeletal-articular, muscular, nervous and the endocrine systems.

BIO-162 Anatomy and Physiology 2
4 credits/3 lecture & 3 lab hours
Prerequisite: *BIO-161*



This is a course in systemic human biology for students in allied health, nursing, physical education and other fields requiring a background in human biology. The focus of the course is normal anatomy and physiology, with reference to pathological situations as appropriate. The course includes the reproductive, circulatory, lymphatic, respiratory, acid-base/fluid/electrolyte balance, urinary and digestive systems.

BIO-175 Microbiology
4 credits/3 lecture & 3 lab hours
Prerequisite: *BIO-110* or *BIO-151*

This course is a study of the form, function and environment of microorganisms with emphasis on those which are pathogenic. Topics include epidemiology, immunology, genetics and control of microbes. Microbiological techniques such as principles of asepsis, identification of microorganisms, microscopic observation of specimens, staining procedures and cultivation of microbes are included.

BIO-201 Botany
4 credits/3 lecture & 3 lab hours
Prerequisite: *BIO-151*

This is a course that includes a detailed examination of the plant kingdom with the major concentration on the vascular plants. The major plant divisions are studied with respect to their anatomy, physiology, life cycles, evolution and ecology. A comparison of bacteria, algae, fungi and higher plants is included in the course.

BIO-202 Zoology
4 credits/3 lecture & 3 lab hours
Prerequisite: *BIO-151*

This course is a survey of selected phyla of the animal kingdom. Each phylum is studied with respect to its phylogenic position. Anatomy and physiology of representative species are studied. Ecological and economic importance of selected species are presented.

BIO-206 Animal Behavior
4 credits/3 lecture & 3 lab hours
Prerequisite: *BIO-151*

This course is an introduction to the study of animal behavior. The course covers the how (ethology) and why (behavioral ecology) of animal behavior. Physical mechanisms as well as the evolutionary and ecological importance in the development of behavior are covered.

BIO-207 Genetics
4 credits/3 lecture & 3 lab hours
Prerequisite: *BIO-151*

This is a course which introduces the principles involved in the transmission of inherited characteristics as revealed by classical and modern investigations. Special concepts include the chromosome theory, cytogenetics and genetic imbalance, mechanisms and significance of DNA mutation and DNA repair, Mendelian and multifactorial inheritance, the chemical structure of genes, applied molecular genetics, gene expression and regulation of gene action.

BIO-209 Cardiopulmonary Anatomy and Physiology

4 credits/3 lecture & 3 lab hours

Prerequisite: *BIO-115* or *BIO-162*

This is a course providing a conceptual and technical presentation of cardiopulmonary anatomy and physiology for students in specific health programs.

BIO-212 Radiobiology

2 credits/2 class hours

Prerequisite: *BIO-151* or *BIO-161*

This is a course which introduces the properties of different types of radiation and their biological effects, both beneficial and harmful. The course details the effects of radiation at the molecular, cellular, tissue and organ system level.

BIO-216 Cell Biology

3 credits/3 class hours

Prerequisite: *BIO-151*

This is a course which emphasizes the relationships between the molecular structure of organisms and their functions. Regulation of cell processes in response to changes in both the intra and extra cellular environment are discussed.

BIO-230 Research Methodology and Quality Assurance

3 credits/3 lecture

Prerequisite: *BIO-151* & *MAT-108*

This course provides students with the basics of conducting proper scientific research in a laboratory. Specific topics include process of science, use of scientific literature sources, critical article review and analysis, presentation of experimental data and basic methods and procedures of quality assurance (procedures of good manufacturing and writing standard operating procedures). Both research and quality assurance includes skill standards developed for working in the bioscience industry.

BIO-240 Environment Biology

4 credits/3 lecture & 3 lab hours

Prerequisite: *BIO-151*

This is a course which introduces the diverse elements that make up an organism's environment. Biotic and abiotic factors which influence the environment are studied along with energy flow through ecosystems. Population and community structures are studied with regard to stability and change. The effects of human intervention on aquatic and terrestrial ecosystems are discussed. Students may be expected to participate in field experiences off campus and for extended periods of time.

BIO-241 Pathophysiology

4 credits/4 class hours

Prerequisites: *BIO-161* & *BIO-162*

This course provides an in-depth study of the predisposing factors and direct causes of diseases as well as their effects on the body. The course includes a systematic approach to the basic disease processes in terms of etiology, symptomatology, general pathological changes, diagnostic procedures and treatment.

Building Construction Technology (BLC)

BLC-103 Construction Planning and Control

3 credits/3 class hours

This is a course in the step-by-step procedures and organizational planning necessary for program construction projects using critical path method (CPM).

Topics include manual and computer methods of construction, job scheduling, organization and time planning, the CPM network and monitoring of construction progress, cost controlling and determining the applications and advantages of the CPM.

BLC-121 Construction Materials and Methods

3 credits/3 lecture hours

This is a comprehensive analysis of building materials, products, processes and systems used in various types of building construction. Students will investigate material usage, building systems and methods of construction. Additionally, students will evaluate techniques covering material performance, selection and building construction installation procedures.

BLC-191 Construction Industry Supervision

3 credits/3 lecture hours

In this course students will study human relations with an emphasis on the subject of motivational strategies. Students will learn how to develop their leadership and supervisory potential through communication analysis and effective problem-solving techniques.

BLC-192 Construction Contracting

3 credits/3 lecture hours

Prerequisite: Eligible for *DVS-101* or higher

This course will present the overall picture of project management, including its function, objectives and preparation strategies. Practices for execution of projects will be outlined and discussed. This course will be presented from the point of view of an operating construction company and the organization.

BLC-203 Surveying

4 credits/2 lecture & 2 lab hours

Prerequisite: *MAT-114* or knowledge of basic trigonometry

This course focuses on building site layout and preparation. Studies include surveying techniques, adjustment and care of surveying equipment.

BLC-294 Construction Estimating 1

3 credits/3 class hours

Prerequisite: *BLC-121* or prior knowledge of building construction materials & methods

This course will teach basic techniques for estimating utilizing the quantity survey method. Emphasis will be placed on uniform method of entering the description and dimensions and computing the quantities of materials for the various items of work encountered in general building construction, including excavation, concrete, form work, masonry, carpentry, structural steel and building finishes. Students will learn how to prepare quantity surveys for construction materials that normally fall under the responsibility of a general contractor; electrical and mechanical estimating are beyond the scope of this course.

BLC-295 Construction Estimating 2

3 credits/3 class hours

Prerequisite: *BLC-294*

This is an advanced general construction estimating course designed for the building industry to further prepare students to enter jobs which require skills used in the development of complete construction estimates by the quantity survey method. Emphasis will be placed on pricing of direct labor costs, materials, equipment, subcontractor costs, project overhead and markup. Each student will prepare cost estimates for construction materials that normally fall under the responsibility of a general contractor; electrical and mechanical estimating are beyond the scope of this course. Students will adjust portions of a national construction cost database by substitution local labor and material costs. A discussion of green materials and LEED certification will be reviewed in the course.

BLC-296 Advanced Computer Estimating

3 credits/3 class hours

Prerequisites: *BLC-294* & *BLC-295*

The purpose of this course is to use the estimating skills acquired in *Building Construction Estimating 1* and *Building Construction Estimating 2* in a hands-on computer environment to increase productivity. The student will prepare estimates for construction items that normally fall under the responsibility of a general contractor; electrical and mechanical estimating are beyond the scope of this course.

Biotechnology (BTC)**BTC-100 Survey of Biotechnology**

2 credits/2 class hours

This course introduces both nonscience and science majors to the fields of biotechnology and molecular biology. Topics include the history of DNA technology, contemporary DNA technology, demonstrations of biotechnology methods, ethics, seminars and field trips.

BTC-101 Biotechnology Lab 1

4 credits/3 lecture & 3 lab hours

Prerequisites: *BTC-100*, *BIO-151*, & *MAT-108*Corequisite: *CHM-151* or *CHM-120*

This course introduces the basic concepts and laboratory skills used in the biotechnology workplace. Basic concepts include applied mathematics for the biosciences, safety in the laboratory, appropriate laboratory record-keeping, computer resources for biotechnology and standard laboratory practices. Special concepts include basic knowledge and operational skills for scientific equipment used in biotechnology, general molecular biology techniques and bioscience problem-solving applications.

BTC-102 Bioethics Seminar

1 credit/1 class hour

Prerequisite: *BTC-100* or *BTC-101*

This course will cover ethical decision making and how it relates to the field of biotechnology. Current events and legal aspects in the discipline will be discussed. Course topics include bioethics, research ethics and social and legal aspects of the Human Genome Project. Students will be required to articulate their viewpoints in a written and oral presentation.

BTC-103 Bioinformatics

3 credits/3 class hours

Prerequisites: *BCT-101* & *MAT-165*

This course provides an introduction to some of the important fundamental skills sets in bioinformatics. In-depth descriptions of methods and algorithms provide background, while hands-on experience with software provides practical experience. Concepts and approaches to DNA and amino acid sequence alignment, homology, conserved domain identification, phylogenetic inference, array-based transcriptomics, quantitative Polymerase Chain Reaction (PCR) analysis and peptide identification searches are presented. Basic computer skills are required.

BTC-202 Biotechnology Lab 2

4 credits/2 lecture & 6 lab hours

Prerequisite: *BCT-101*

This course builds on the concepts and laboratory skills introduced in Biotechnology Laboratory 1. Special concepts will include advanced molecular biology methods used in protein and nucleic acid analysis, enzyme mediated reactions, cell culture techniques, DNA sequence interpretation and gene amplification.

BTC-203 Cell Biology/Immunology Lab

1 credit/3 lab hours

Prerequisites: *BIO-151* & *CHM-151*

This is a course for biology and biotechnology students that provide hands-on laboratory exercises as well as the written communication of laboratory experiments. Modern laboratory techniques will be used to study cell biology and immunology. Course topics include basic histology and immunology.

BTC-204 Biotechnology Internship

2 credits/2 hours/120 practicum hours

Prerequisites: *BTC-101*, 2.00 GPA

This course provides practical work experience at one of the affiliated biotech industries or a university research facility. Techniques learned in biology/biotechnology labs will be applied in an actual laboratory setting to give the student more experience while learning practical applications for laboratory procedures.

Business (BUS)**BUS-101 Introduction to Business**

3 credits/3 class hours

This course is a survey of modern business practices. This course may not be taken if student has earned six or more credits in other business courses.

BUS-103 Principles of Management

3 credits/3 class hours

This is an introduction to the theory and principles of organization and management. The management process is studied, including the areas of planning, organizing and control.

BUS-104 Principles of Marketing

3 credits/3 class hours

This is a study of the process of planning and executing the conception, pricing, distribution and promotion of products that will fulfill consumer needs and wants and satisfy the goals of the individual organization.

BUS-108 Principles of Finance

3 credits/3 class hours

Prerequisite: *ACC-104*

This course is an introduction to the principles of finance, including the concepts of money and interests, forms of business enterprises, capitalization of corporation and financial reports.

BUS-110 Personal Finance

3 credits/3 class hours

This is a course in the management of personal finances. Topics include the budgeting of income and the care and proper use of checking accounts. Attention is given to insurance, various features of US savings bonds and other forms of savings, home ownership, securities and the stock market, income taxes, retirement planning and estates.

BUS-117 Public Relations

3 credits/3 class hours

This course presents a survey of the role of public relations in marketing communications. Studied are the relationships of public relations to marketing practices, consumerism, ethics, profitability, social responsibility, government and the law. Channels of communication and other tools of public relations are examined.

BUS-122 Business Statistics

3 credits/3 class hours

This is a study of statistical methods as they apply to business problems. Areas included are probabilities, binomials, normal distributions and hypothesis testing.

BUS-130 Business Communications

3 credits/3 class hours

Prerequisite: Eligibility for *ENG-101*

This course develops a student's skills in writing effective business letters, reports and research projects. Verbal communication skills and the preparation of resumes and other job related materials are studied.

BUS-140 Introduction to e-Commerce

3 credits/3 lecture hours

This class is designed to provide the student with thorough knowledge of e-commerce concepts and terminology. It will cover e-commerce applications, methodologies that address business solutions needed for electronic procurement, supplier management and customer relationship management. Real-life examples and case studies will be examined to provide the student with working knowledge of these concepts.

BUS-143 Internet Marketing

3 credits/3 lecture hours

This course will analyze the various aspects of marketing as they relate to the world of e-business. The marketing mix and marketing strategies as they pertain to online applications will be explored. The course emphasizes marketing principles, theories and practices, rather than the technical aspects of web development and e-commerce.

BUS-151 Social Theory of Business Ethics

3 credits/3 class hours

Prerequisite: *BUS-103*

This course presents an analysis of the manager as an individual and as a member of the corporate structure. The course includes the following topics: business attitudes, job satisfaction, philosophy of profit, business and social responsibility.

BUS-200 Principles of Supervision

3 credits/3 class hours

This is an introduction to the methodology of supervision. Emphasis is placed on building effective work relationships, clarity of communications, dealing with group behavior, handling daily conflicts and controlling the work flow.

BUS-201 Human Resource Management

3 credits/3 class hours

This is a survey of current practices and procedures in human resource management and the study of functions such as recruitment, selection, training, compensation and maintenance of the workforce.

BUS-204 Labor Relations

3 credits/3 class hours

Prerequisite: *BUS-101*

This course is an analysis of collective bargaining as well as the causes and possible solutions to conflict between management and labor. The course includes the following topics: wages, pensions, working conditions, safety and union recognition, wage and salary administration practices, recruitment, training programs and procedures.

BUS-210 Principles of Retailing

3 credits/3 class hours

This course is a study of retailing from the viewpoint of the owner and manager. The topics include organization of the retail firm, establishment of stores, customer needs, purchasing, pricing, financing, advertising, selling, planning and control.

BUS-211 Principles of Advertising

3 credits/3 class hours

This is an introduction to advertising. Emphasis is on the purpose of advertising, the ways firms use advertising and sales promotion as part of their total marketing plans and the means for determining the need for a complete sales campaign. Topics include market research, media evaluation, ad preparation and sales promotion.

BUS-212 Principles of Selling

3 credits/3 class hours

This is a study of the techniques of salesmanship. Topics include the analysis of customer need, selection of prospects, the sales approach, the sales presentation, overcoming customer objections, closing the sale and suggestion selling.

BUS-221 Production Management

3 credits/3 class hours

This course is an introduction to the characteristics and techniques applicable to product or operations management. The emphasis is on decision making in operational areas such as planning and control, cost reduction techniques, inventory control, production engineering, quality control, materials management, value engineering and the use of statistics and quantitative techniques in arriving at sound business decisions.

BUS-240 Small Business Management 1

3 credits/3 class hours

This is a course for those who want to manage a small business. Emphasis is on management principles and their application to problems associated with the operation of a small business.

BUS-245 International Business

3 credits/3 class hours

This is an introduction to international business that will cover topics of international finance, international marketing, international management and international human resources management. Several parts of the world will be highlighted to allow the student an opportunity to see the differences in conducting business from country to country. The course will also cover terminology specific to international business.

BUS-251 Business Law 1

3 credits/3 class hours

This course presents a study of law and the court system in business. Topics include the law of contracts, enforceable agreements, operation and discharge as well as remedies at law and in equity.

BUS-252 Business Law 2

3 credits/3 class hours

Prerequisite: *BUS-251*

This course is an examination of the laws of partnerships, corporations, property and title. Specialized business law relationships including landlord-tenant, insurer-insured, sales and warranty contracts, bailments and the law of negotiable instruments are studied.

Carpentry (CAR)**CAR-101 Carpentry 1**

6 credits/4 lecture & 4 lab hours

This course prepares students with the professional skills and competencies they will need to work as commercial carpenters. This course includes laboratory sessions and provides an opportunity for hands-on training. Topics include safety, structural framing, interior systems and concrete framing.

CAR-102 Carpentry 2
6 credits/4 lecture & 4 lab hours
Prerequisite: *CAR-101*

This course prepares students with the professional skills and competencies they will need to work as commercial carpenters. This course includes laboratory sessions and provides an opportunity for hands-on training. Topics include roof framing, interior ceiling systems, concrete systems and scaffolding.

CAR-105 Carpentry Drafting/Blueprint Reading 1
2 credits/2 class hours

This course deals with the interpretation of technical drawings, isometric drawings, and building plans. Students interpret three dimensional, sectional, schematic and exploded views. Leadership in Energy and Environmental Design (LEED) concepts will be discussed.

CAR-106 Carpentry Drafting/Blueprint Reading 2
2 credits/2 class hours

This course deals with the interpretation of technical drawings, isometric drawings, and building plans. Students interpret three-dimensional, sectional, schematic, and exploded views. Leadership in Energy and Environmental Design (LEED) concepts will be discussed.

CAR-115 Mathematics for Carpenters 1
3 credits/3 class hours

This course provides a foundation of mathematics applied to the carpentry trade. Students will practice computational skills and apply analytical solutions to carpentry projects using measurements, geometry, speed squares, sliding t-levels, combination squares and framing squares.

CAR-116 Mathematics for Carpenters 2
3 credits/3 class hours
Prerequisite: *CAR-115*

This course provides a foundation of mathematics applied to the carpentry trade. Students will practice computational skills and apply analytical solutions to carpentry projects using measurements, geometry and algebra.

CAR-201 Carpentry 3
6 credits/4 lecture & 4 lab hours
Prerequisite: *CAR-102*

This course prepares students with the professional skills and competencies they will need to work as commercial carpenters. This course includes laboratory sessions and provides an opportunity for hands-on training. Topics include trusses, intersecting roofs, exterior finishes, insulation and cabinet installation.

CAR-202 Carpentry 4
6 credits/4 lecture & 4 lab hours
Prerequisite: *CAR-201*

This course prepares students with the professional skills and competencies they will need to work as commercial carpenters. This course includes laboratory sessions and provides an opportunity for hands-on training. Topics include door installation, advanced tools, rigging and welding.

CAR-205 Carpentry Drafting/Blueprint Reading 3
2 credits/2 class hours
Prerequisite: *CAR-106*

This course deals with the interpretation of technical drawings, isometric drawings, and building plans. Students interpret three-dimensional, sectional, schematic, and exploded views. Leadership in Energy and Environmental Design (LEED) concepts will be discussed.

CAR-206 Carpentry Drafting/Blueprint Reading 4
2 credits/2 class hours
Prerequisite: *CAR-205*

This course deals with the interpretation of technical drawings, isometric drawings, and building plans. Students interpret three-dimensional, sectional, schematic and exploded views. Leadership in Energy and Environmental Design (LEED) concepts will be discussed.

CAR-215 Mathematics for Carpenters 3
2 credits/2 class hours
Prerequisite: *CAR-116*

This course provides a foundation of mathematics applied to the carpentry trade. Students will practice computational skills and apply analytical solutions to carpentry projects using measurements, geometry and algebra.

CAR-216 Mathematics for Carpenters 4
2 credits/2 class hours
Prerequisite: *CAR-215*

This course provides a foundation of mathematics applied to the carpentry trade. Students will practice computational skills and apply analytical solutions to carpentry projects using measurements, geometry and algebra.

Computed-assisted Tomography (CAT)

CAT-201 Computed Tomography Instrumentation and Equipment Procedures
4 credits/4 lecture hours
Prerequisite: Acceptance into CAT program
Corequisites: *CAT-202 & CAT-203*

This is a course in medical computed tomography for certified technologists. Included are a history of medical imaging in radiology sciences, advanced principles of image reconstruction for human anatomy utilizing radiographic computed tomography techniques, essential elements of medical computer systems, patient positioning for scanning protocols and data acquisition systematic procedures.

CAT-202 Cross-sectional Anatomy for Computed Tomography Imaging
2 credits/2 lecture hours
Prerequisite: Acceptance into CAT program
Corequisites: *CAT-201 & CAT-203*

This is a course in computed tomography cross-sectional anatomy for certified technologists utilizing medical cross-sectional radiographs to identify cranial, thoracic, abdominal and musculoskeletal systems. Each system will be demonstrated in a transverse, sagittal, coronal and oblique computed tomography image.

CAT-203 Patient Care/Radiation Safety for Imaging Technologist
2 credits/2 lecture hours
Prerequisite: Acceptance into CAT program
Corequisites: *CAT-201 & CAT-202*

This is a course in computed radiographic patient care and safety for certified technologists. Included are the principles of radiation protection for the patient, computed scanning technologist and medical team. Production and control of the computed x-ray beam for scanning procedures and equipment techniques are studied.

CAT-204 Clinical Applications of Computerized Tomography
4 credits/240 clinical hours
Prerequisites: *CAT-201, CAT-202 & CAT-203*
Corequisite: Clinical agency assignment

Assigned to affiliate agencies, certified technologists perform all routine and advanced computed tomography procedures under the supervision of a Radiologist and certified CT scan technologist. The student gains experience in imaging

techniques, quality assurance, axial, coronal and sagittal sectional procedures. Clinical education assignments are made by faculty and students are responsible for their own transportation, parking and meals. This course is graded on a pass/fail basis.

Civil Engineering Technology (CET)

CET-140 Site Plan Drafting

3 credits/2 lecture & 4 lab hours

Prerequisite: *EDD-101*

This course provides training and background to produce civil engineering working drawings using computer-aided drafting techniques. Emphasis will be on site plan development and the preparation of drawings and specifications for land development. Topics include maps, surveys, site plans, utilities, subdivision planning, roads, topography and grading storm water drainage, sanitary sewer considerations and the basic use of GPS systems.

CET-201 Materials of Construction

4 credits/4 class hours

This course is a study of the materials used in construction. Materials include wood, masonry and concrete, steel and non-ferrous metals, bitumens, roofing, flooring and siding, sealants and finishes. Green and sustainable materials are discussed.

CET-202 Soils in Construction

4 credits/3 lecture & 2 lab hours

Prerequisite: *PHY-113*

This course is a study of the composition, classification and processing of soils and their influence on the construction process. Laboratory tests will be performed on soils and aggregate to determine their physical and mechanical properties. Topics include soil properties, soil testing, detailed computations, evaluation of testing methods and results, excavation and types of foundations.

CET-215 Site Plan Development

4 credits/4 class hours

This course focuses on site planning and design that takes into account all physical problems or assets of the land. Emphasis is placed on the task of moving people, buildings and vehicles into a functional order to produce a logical, aesthetic solution. Analysis of the profitability of land development and green and sustainable building sites are discussed.

Chemistry (CHM)

CHM-109 Introduction to Chemistry

4 credits/3 lecture & 2 lab hours

Prerequisite: *MAT-090*



This is an introductory course incorporating the concepts of chemical structure, bonding and stoichiometric relationships. Students with weak backgrounds in Chemistry are advised to take this course before enrolling in General Chemistry 1. This course has a laboratory component.

CHM-110 Introductory Chemistry

3 credits/3 class hours

Prerequisite: *MAT-090*



This is an introductory course incorporating the concepts of chemical structure, bonding and stoichiometric relationships. Students with weak backgrounds in chemistry are advised to take this course before *General Chemistry 1*. Students who wish may take *CHM-111* at the same time.

CHM-111 Introductory Chemistry Laboratory

3 credit/1 lecture & 2 lab hours

Prerequisite: *MAT-090* and (*CHM-110* with a grade C or better)

Corequisite: *CMH-110*



This is a laboratory course for non-Chemistry majors emphasizing basic chemical laboratory techniques. The experiments performed provide an understanding or show a practical application of the fundamental principles underlying chemical structure, bonding and stoichiometric relationships.

CHM-118 Chemistry of Art

3 credits/2 lecture & 2 lab hours

This is a laboratory science elective that deals with fundamental principles of chemistry. Principles such as atomic structure, bonding, properties of light and chemical reactions are studied in relation to canvas board, microscopes, computers and cameras. This course is suggested for students in fine or commercial art, humanities, education or science.

CHM-120 Bio-organic Chemistry

4 credits/3 lecture & 3 lab hours

Prerequisites: *CHM-109*, *CHM-110/111* or equivalent high school chemistry

This course is an introduction to the elements of general, organic and biological chemistry which are essential to the allied health professions. Principles of carbon chemistry are developed and related to more important aspects of biological chemistry.

CHM-151 General Chemistry 1

4 credits/3 lecture & 3 lab hours

Prerequisites: *CHM-109* or *CHM-110/111* or B or better in high school chemistry within the past five years & *MAT-108* or *MAT-111* or equivalent.



This is a chemistry course appropriate for science and engineering majors. The topics include: measurements, classification and properties of matter, atomic and molecular structure, chemical bonding, periodicity, stoichiometry, thermochemistry, chemical reactions and the structure. Laboratory experiments deal with the quantitative and qualitative determination of physical and chemical properties of chemical substances.

CHM-152 General Chemistry 2

4 credits/3 lecture & 3 lab hours

Prerequisite: *CHM-151*



This course focuses on intermolecular forces, properties of solids and liquids, solution theory, acid base theory, chemical kinetic, chemical equilibrium, chemical thermodynamics and electrochemistry. Laboratory includes experiments related to the aforementioned topics and introduction to the qualitative analysis of inorganic ions.

CHM-201 Organic Chemistry 1

4 credits/3 lecture & 4 lab hours

Prerequisite: *CHM-152* or permission of instructor

The course covers the chemistry of the organic compounds of carbon. This includes the bonding, structure (including stereochemistry), nomenclature, physical properties, reactions and reaction mechanisms. The alkane, alkene, alkyne, alkyl, halide, alcohol, ethers and epoxides functional groups are studied in detail. Laboratory is an introduction to basic organic lab operations, such as separation, extraction and determination of physical properties.

CHM-202 Organic Chemistry 2

4 credits/3 lecture & 4 lab hours

Prerequisite: *CHM-201* or permission of instructor

This course covers the chemistry of the organic compounds of carbon. This includes the bonding, structure (including stereochemistry), nomenclature, physical properties, reactions and reaction mechanisms. The dienes, aromatics, acids, acid derivatives, aldehydes, ketones, amines, carbohydrate, lipids and amino acids functional groups are studied in detail. Laboratory is an introduction to identification of organic compounds by spectroscopic and NMR data and synthesis of organic compounds.

Computer & Information Technology (CIT)**CIT-100 Computer Fundamentals and Applications**

3 credits/3 class hours

This is a general computer literacy course. Students learn computer fundamentals (hardware, software and using a Microsoft Windows operating system), essential applications (word processing, spreadsheets, database and presentation software), working online (networks, using the Internet and email) and the impact of computing and the Internet on society. Students develop skills with common applications to use a computer as a tool, make informed decisions concerning computer generated information and obtain basic information systems concepts and terminology.

CIT-102 Computer Keyboarding

3 credits/3 class hours

This course provides a mastery of the keyboard (letters, numbers and symbols) by touch on a personal computer, using Microsoft Word to facilitate typing skills in generating and formatting mailable letters, reports, tables and memos. The minimum speed at end of course is 30 words per minute accurately. Note: This course cannot be used to satisfy a required CIT elective in any program.

CIT-109 Fundamentals of Programming Using 3-D Animation

3 credits/3 class hours

Prerequisite: Basic skills using a personal computer & operating system

This course is an introduction to computer programming using 3-D animation. The course covers fundamental concepts of programming using the visually-oriented instructional program called Alice. Alice is an object-based teaching tool that enables students to visualize abstract concepts common to any Object-Oriented Programming (OOP) language. This course is a general elective for CIT majors and a CIT elective for non-CIT majors.

CIT-111 Introduction to Programming: Java

4 credits/4 class hours

Prerequisites: Basic skills using a personal computer & operating system; eligibility for *MAT-090*

This course is an introduction to program design, analysis and programming fundamentals using the Java language. Topics include the software development process, problem-solving techniques, simple language basics, data representation and storage, program control structures, classes, and their methods.

CIT-115 Introduction to Information Technology

3 credits/3 class hours

Prerequisite: Basic skills using a personal computer & operating system

This course explores technical issues involved with computers and information technology. Topics include computer hardware and components, operating systems, file storage, networking fundamentals, digital media, database systems and the Internet structure & organization. Students research various information technology issues using the Internet and in-class or simulated lab exercises in a personal computer environment.

CIT-120 Networking

3 credits/3 class hours

Prerequisite: *CIT-115*

This course introduces students to computer networking fundamentals. Topics include: network design, network hardware, network operating systems software, data communications, configuration and installation, internetworking and troubleshooting basic network problems. Using a Microsoft Windows server-based LAN environment, students practice network administration concepts and activities.

CIT-125 Web Development

3 credits/3 class hours

Prerequisites: Basic skills using a personal computer & operating system; high school algebra

This course focuses on developing skills necessary to design, create and enhance web pages for personal and business use. Students will acquire hands-on experience in creating and publishing web pages that include text, hyperlinks, images, tables, frames, forms, sound and video. Topics include: Cascading Style Sheets, JavaScript, XML, Graphics and other web media and website development using a web authoring tool.

CIT-130 Object-Oriented Programming 1: Java

4 credits/4 class hours

Corrected Prerequisite: *CIT-111* or with instructor's permission

This course uses the skills gained in *CIT-111* and expands on the concepts of the software development process, data representation and storage, program control structures, objects and classes. Additional topics include event handling, arrays and window based graphical user interfaces (GUI).

CIT-135 Introduction to Mobile Apps Programming

3 credits/3 class hours

Prerequisite: *CIT-111* or with instructor's permission

This course is an introduction in creating applications or apps using the Java object-oriented computer programming language and a mobile operating system. Topics include the Integrated Development Environment (IDE) and the Software Development Kit (SDK) technologies, object-oriented programming, interactive activity classes and the activity life cycle, program controls and graphical user interfaces, graphics processing, content providers, Web service access and Web application publishing.

CIT-140 Office Productivity Applications

4 credits/4 class hours

Prerequisites: Basic skills using a personal computer or operating system & some basic exposure to Microsoft Office; high school algebra

This course provides students with knowledge and skills to effectively use spreadsheet and database productivity applications in a work environment. Students learn through applied and project-based activities that go beyond the mechanics of the software. It engages students to utilize critical thinking activities for applied learning and problem-solving. Topics include Microsoft Excel, Access and business applications integration.

CIT-141 Word Processing

3 credits/3 class hours

Prerequisites: Basic skills using a personal computer & Windows operating system, keyboarding & some basic exposure to Microsoft Office

This course introduces basic and intermediate word processing concepts and applications. Topics include preparation of a variety of documents and mastery of specialized software functions. Upon completion, students should be able to work effectively in a computerized word processing environment using Microsoft Word.

CIT-142 Desktop Publishing Concepts

3 credits/3 class hours

Prerequisites: Basic skills using a personal computer & Windows operating system, keyboarding & experience with Microsoft Word

This course introduces the fundamentals of word and image production using a personal computer. This course provides hands-on development that emphasizes the elements of page composition, publication design, text construction, graphs and business applications. Upon completion, students should be able to work effectively in producing flyers, proposals and brochures in a computerized office environment using Microsoft Word and Publisher.

CIT-145 Programming in C

3 credits/3 class hours

Prerequisite: *CIT-111* or strong previous programming experience

This is a course to develop a working knowledge of C. Topics include: program structure, data types and variables, bit operators, control structures, input and output, arrays, pointers and an introduction to data structures. This is not an introduction to programming using C, it is C programming for programmers.

CIT-150 PC Components and Operating Systems

3 credits/3 class hours

Prerequisite: *CIT-115*

This course provides students with the knowledge and skills involved with managing and maintaining a personal computer environment. Topics include: system architecture, boot process, command line interface, motherboards, memory, installing & optimizing storage devices, input/output devices, multimedia devices, managing & supporting a Windows operating system environment, networked computers, printers and troubleshooting and maintenance fundamentals.

CIT-155 Excel Spreadsheets

3 credits/3 class hours

Prerequisite: Basic skills using a personal computer and Windows operating system, keyboarding and basic exposure to Microsoft Office. Ability to effectively manage Windows files and folders.

This course is a comprehensive use of electronic spreadsheets in solving business and technical problems using Microsoft Excel. Students learn through applied and project-based activities that go beyond the mechanics of the software. It engages students to utilize critical thinking activities for applied learning and problem solving. Topics include preparation of a variety of documents and mastery of specialized software functions.

CIT-161 Visual Basic: Windows Programming

4 credits/4 class hours

Prerequisite: *CIT-111* or previous experience with an object-oriented programming language

This course introduces students to developing applications in a Windows environment using Visual Basic. The course emphasizes designing graphical user interfaces/dialogues and event driven programming. Topics include creating and using classes, the design of the graphical user interface, human-computer interacting, testing and evaluation, rapid prototyping, design tools, database access with SQL and ADO.NET.

CIT-175 Cyberspace Vulnerabilities and Risks

3 credit/3 lecture hours

This course introduces students to the fundamentals of Cybersecurity, such as cybersecurity goals, vulnerabilities, threats, and risks. Students also learn to use the methods and tools for cybersecurity vulnerability scanning and risk assessment.

CIT-180 Computer Forensics 1

3 credits/3 class hours

Prerequisite: *CIT-115* or instructor approval

This course introduces students to the fundamentals of the computer forensics field and technology. Students will obtain essential knowledge of the computer forensics profession, legal issues and procedures of computer investigations and digital evidence management, industry-standard computer forensic tools, file systems, data recovery and collection and sample case evaluations. Each student is required to sign an ethical agreement with the instructor.

CIT-181 Principles of Information Security

4 credits/4 class hours

Prerequisite: *CIT-115* or instructor approval

This course provides students necessary background in the technical realities and legal and theoretical principles of computer and information security to help them identify and evaluate computer security crimes and incidents. Topics include information security components and models, legal and ethical issues in information security and privacy, basics of computer networks and data communication, common computer and network system threats, attacks and vulnerabilities, as well as information security risk and damage analysis and assessment.

CIT-185 Network Security

3 credits/3 class hours

Prerequisite: *CIT-175*

This course highlights the models and protocols essential to securing wired and wireless networks. Students also learn to capture and analyze network traffic, identify network security threats, and apply and evaluate network security controls.

CIT-186 Intrusion Detection and Prevention

3 credits/3 lecture hours

Prerequisite: *CIT-175*

This course covers the basic theory and practice of detecting and preventing intrusions and attacks in cyberspace. The study emphasis is on methods and tools to monitor for and identify system vulnerabilities and threats and prevent attacks.

CIT-205 Help Desk and User Support

3 credits/3 class hours

Prerequisites: *CIT-115* & *CIT-140*

This course focuses on information and services that today's computer users require from user support specialists to enhance productivity and to resolve problems. Topics include an overview of the emerging user support services field, hardware and software evaluation, facilitation of product standards, needs assessment, system installation, user training, documentation preparation, troubleshooting and other forms of assistance. Problem solving, communication skills and interpersonal relations will be emphasized throughout the course.

CIT-206 Administrative Technology and Procedures

3 credits/3 class hours

Prerequisite: *CIT-141*

This course is a comprehensive application of office technology skills using various computer programs to complete common business tasks including business writing, document formatting, telecommunications, records management, presentations and a variety of essential skills required in today's business office.

CIT-215 Systems Analysis and Design

3 credits/3 class hours

Prerequisite: Last or next-to-last term of a CIT certificate/degree program or permission of the instructor

Students utilize a system development methodology through team-based projects that demonstrate their information technology skills. Topics include life cycle phases; determination of user system requirements; logical and physical design; test planning; implementation planning; performance evaluation; software package evaluation and acquisition; prototyping; structured and object-oriented methodologies; development and adherence to the system life cycle standards; and designing interfaces and dialogues. This course encourages interpersonal skill development with clients, users, team members and others associated with development, operation and maintenance of the system. This course also acts as a capstone for CIT programs, allowing students to achieve a better perspective of the academic, personal and professional requirements of their chosen IT profession.

CIT-220 Linux Operating System

3 credits/3 class hours

Prerequisite: *CIT-115*

This course introduces students to the Linux operating systems. Lecture and classroom labs utilize a Linux operating system environment to explore the following topics: Linux installation, Bash shell, command line interface, file systems, file maintenance tools & commands, window manager configuration and simple shell scripting. The course is intended for students with some experience of other operating systems but with little or no experience with Linux and can be used in preparation for various Linux certification examinations.

CIT-230 Database Systems

4 credits/4 class hours

Prerequisite: Programming experience required

This course covers information systems design and implementation within a database management system (DBMS) environment. The use of relational database technology is emphasized in the course. Students learn to create data models of user's needs, gain foundation skills in database design and learn to use standard structured query language (SQL) to interact with databases. Topics covered include the relational database model, SQL, entity relationship modeling, normalization of database tables, database design, distributed database systems and client/server architectures. Students will use a commercial DBMS for their project development.

CIT-235 Web Database Systems

4 credits/4 class hours

Prerequisite: *CIT-161* or *CIT-130*Corequisite: *CIT-230* or instructor's permission

This course focuses on building web-based online applications in a client/server environment. Students implement e-commerce database-driven applications. Topics include: building and maintenance of databases, database programming, web forms and the use of various web development technologies to implement the design. Hands-on labs utilize software such as SQL Server, VB.NET, ASP.NET and ADO.NET.

CIT-244 Object-Oriented Programming 2: Java

4 credits/4 class hours

Prerequisite: *CIT-130*

This course builds on the concepts of software design and development introduced in *CIT-130*. Review basic Object Oriented design and program structure in the creation of Java applications. The focus of this course is an Object Oriented design, data encapsulation, graphical user interfaces, exception handling, multi-threading, Input/Output processes and data structures.

CIT-245 Data Structures and Programming: C++

4 credits/4 class hours

Prerequisite: *CIT-130*

This is a course in software design and development that focuses on data abstraction and implementation of information structures. The course introduces the object-oriented language C++. Topics include arrays, pointers, list, stacks, queues and trees.

CIT-250 Internetworking of Computers

3 credits/3 class hours

Prerequisite: *CIT-120*

This course introduces students to the essential concepts and technical skills necessary to establish an Internet or Intranet within an enterprise and the use of TCP/IP as a routable network protocol. Windows Server is used as a vehicle for both discussion and related lab activities. Topics include planning and installation, diverse client support, multiple protocol support, domain management, Novell and Macintosh connectivity, remote access server, active directory services and troubleshooting. Detailed coverage is also provided on TCP/IP issues such as IP addressing, bridging and routing, DHCP and naming services.

CIT-251 Windows Server Operating System

4 credits/4 class hours

Prerequisite: *CIT-120*

This course presents lectures and hands-on labs involving Windows Server administration, as well as technical support knowledge and skills necessary to install, upgrade and maintain a single LAN that uses Windows Server. Students learn and practice the following network administration concepts: planning for server hardware and network protocols, planning the active directory and security, server installation, server configuration, configuring storage, backup options, managing accounts, managing printers, remote access and virtual private networks, managing Internet and network operability, server monitoring and optimization, network monitoring and troubleshooting.

CIT-255 Web Server Administration

3 credits/3 class hours

Prerequisite: *CIT-120*

This course provides technical information and hands-on lab activities involved with administering a web server on the Internet or intranet. Topics include web server and proxy server overview, Internet protocols and ISP connection options, HTTP and FTP protocols, web server planning and operating system platforms, server configuration and publishing documents, server-side programming, network security, web client/server security, CGI security and secure online transactions.

CIT-280 Computer Forensics 2

4 credits/4 class hours

Prerequisites: *CIT-180*, *CIT-181*

This course provides students the opportunities to apply the fundamentals of computer forensics to the processing and analysis of real or hypothetical cases. Students will have substantial hands-on experience in problem-solving and in using computer forensic knowledge and tools to identify, recover, collect, process, analyze, document and present digital evidence in sample cases of computer crimes or incidents. The hands-on experience includes work on file and data recovery, password cracking and examination and analysis of email and network intrusions.

CIT-281 Project in Computer Forensics
2 credits/2 class hours
Prerequisites: *CIT-180, CIT-181*
Corequisite: *CIT-280*

This course is an advanced level practicum for students in the Computer Forensic Technology program. Students will gain comprehensive experience and demonstrate their competencies in applying the knowledge and skills learned in this program to real world or hypothetical cases of computer security crime or incident. While students are encouraged to identify and work on projects in actual government agencies or business organizations, they may also work on equivalent hypothetical cases mutually agreed to between the students and the instructor. The course work should culminate into an individual or team portfolio that can be used to evaluate the students' competencies in the program.

CIT-282 Advanced Cybersecurity Topics
3 credits/3 class hours
Prerequisite: *CIT-185*

This course covers advanced and emerging topics in Cybersecurity. The current emphasis in the course is on mobile device security and cloud security.

CIT-285 Cybersecurity Capstone
3 Credits/3 class hours
Prerequisite: Instructor approval

This course, which must be taken in the final semester, is the exit course for the program. With the instructor's guidance and approval, eacjc-101ch student will work on and complete a portfolio-type project on a specific cybersecurity problem using the learning from previous courses in the program and additional research.

Specialty Courses

CIT-600 Introduction to Windows
1 credit/1 class hour

This course is an introduction to using personal computer in a Windows environment. Coverage includes computer components and their use, using an editor and simple word processor, the graphical user interface and terminology, executing programs, managing programs, files and directories, transferring data between applications, other basic computer operations and using a browser. It is intended for the complete novice. The course is graded on a pass/fail basis.

CIT-601 Introduction to Internet Research
1 credit/1 class hour
Prerequisite: Basic skills using a personal computer & operating system.

This course introduces students to using the Internet as an information retrieval tool and teaches strategies for locating and analyzing information. The course is designed to help students develop the basic information literacy skills necessary for college course work, general research and for lifelong learning in an information-centered society. Students considering taking a web-based or web-enhanced class at CCAC will also benefit from the discussion and use of the Blackboard facility. This course is graded on a pass/fail basis.

CIT-602 Presentation Graphics: PowerPoint
1 credit/1 class hour
Prerequisites: Basic skills using a personal computer & operating system & some basic exposure to Microsoft Office.

This course is an introduction to the use of presentation graphics software to provide professional presentations using Microsoft PowerPoint. Topics include using the software and working with master slides. This course is graded on a pass/fail basis.

CIT-604 Electronic Spreadsheets: Excel
1 credit/1 class hour
Prerequisites: Basic skills using a personal computer & operating system & some basic exposure to Microsoft Office

This course is an introduction to the use of electronic spreadsheets in solving business and technical problems using Microsoft Excel. Topics include basic spreadsheet concepts involving designing spreadsheets, formulas, functions and macro instructions. This course is graded on a pass/fail basis.

CIT-606 Database Management: Access
1 credit/1 class hour
Prerequisites: Basic skills using a personal computer & operating system & some basic exposure to Microsoft Office

This course is an introduction to the use of database management software using Microsoft Access. Topics include basic database concepts, creating a simple database, navigation, sorting and searching, creating forms, queries, reports and labels. This course is graded on a pass/fail basis.

CIT-607 Office Management: Outlook
1 credit/1 class hour
Prerequisites: Basic skills using a personal computer & Windows operating system & some basic exposure to Microsoft Office.

This course focuses on developing Microsoft Outlook skills necessary to send email, keep a calendar, store notes, organize tasks and keep track of contacts in a small office or home environment. This course is graded on a pass/fail basis.

CIT-608 Desktop Publishing
1 credit/1 class hour
Prerequisites: Basic skills using a personal computer & operating system & some basic exposure to Microsoft Office.

This course is an introduction to integrated text and graphics processing software, enabling a user to produce high quality documents such as presentation reports, marketing literature, newsletters and system documentation. This course is graded on a pass/fail basis.

CIT-615 Computer Applications in Health Care
1 credit/1 class hour
Prerequisites: Basic skills using a personal computer & operating system & some basic exposure to Microsoft Office.

This course provides an overview of actual and potential uses within the healthcare system. Emphasis is on learning about computer applications and their uses specific to nursing/allied health care. A hands-on component is included as part of the course. This course is graded on a pass/fail basis.

CIT-617 Introduction to Microsoft Project (Corrected)
1 credit/1 class hour
Prerequisite: Basic skills using a personal computer & operating system & some basic exposure to Microsoft Office

This course is an introduction to the usage of project management software using Microsoft Project. Topics include project management concepts and applications, task project schedules, project management tools and cost and resource allocation to effectively manage projects.. This course is graded on a pass/fail basis.

CIT-620 Developing Web Pages Using Web Authoring Software
1 credit/1 class hour
Prerequisite: Previous programming experience with HTML.

This course provides an introduction to designing web pages using web authoring software. The course is graded on a pass/fail basis.

CIT-641 Computer Information Security

1 credit/1 class hour

Prerequisite: Regular experience using computers & Internet

This course is an introduction to practical computer and data security topics for all users, including business professionals and home users. Coverage includes general information security concepts, personal computer security, Internet and email security, wired and wireless network security and organizational data security and risk assessment. The course is graded on a pass/fail basis.

Criminal Justice & Criminology (CJC)**CJC-101 Introduction to Criminal Justice**

3 credits/3 class hours

This course is a study of crime, societal reaction to crime and the components of the criminal justice system, law enforcement, the courts and corrections. The student is introduced to the philosophical and historical backgrounds as well as their purposes and functions of each component. The major theories of crime causation, control and rehabilitation of the offender are discussed.

CJC-102 Introduction to Corrections

3 credits/3 class hours

This course is designed to provide students with an overview of the U.S. correctional system. The philosophy, ethical dilemmas and methods of imposing sanctions upon offenders in the criminal justice system will be explored in depth. Exploration of the theories and practice in probation, parole, community-based services, jails, prisons and capital punishment will comprise much of the course.

CJC-124 Juvenile Justice and Juvenile Delinquency

3 credits/3 class hours

This course is a study of delinquent and criminal behavior of adolescents as it relates to the history of juvenile justice philosophy and policy in the United States. Causations as well as treatment and prevention programs are considered. The proper handling and referral of juveniles involved in criminal and status offenses are discussed. Issues involved in the operation of juvenile courts and court related programs are studied. Juvenile drug addiction, mental illness and habitual offenders are discussed.

CJC-151 Criminal Justice System Law

3 credits/3 class hours

This course examines criminal, constitutional and procedural law. The basic constitutional rights applicable to those involved in the criminal justice system from arrest to sentencing are discussed. The development of public policy in the administration of criminal justice and the legal principles for determining criminal and civil liability are studied.

CJC-152 Ethics in Criminal Justice

3 credits/3 class hours

This course is a study of ethical issues and dilemmas encountered by the professional in the fields of criminal justice. Corruption, brutality and morality are discussed in relation to the duties in criminal justice organizations.

CJC-201 Fundamentals of Criminal Investigation

3 credits/3 class hours

This course is an introduction to criminal investigation procedures including theory, techniques and problems. Case preparation, investigative techniques, questioning of witnesses and suspects and collection and preservation of evidence are studied.

CJC-203 Evidence and Procedures

3 credits/3 class hours

This course is a study of the principles, duties and mechanics of criminal justice procedures in the United States and the Commonwealth of Pennsylvania as they apply to search and seizure, arrest and investigations. Also considered is the evaluation of evidence and proof with regard to kind, degree, admissibility, competence and weight. The course emphasizes rules of evidence at the operational level of law enforcement.

CJC-204 Criminal Justice System Organization and Administration

3 credits/3 class hours

This is a course of study involving organization and administration on law enforcement agencies. Topics include functions and activities, planning and research, public relations, personnel and training, inspection and control and policy formulation in criminal justice system agencies.

CJC-205 Introduction to Forensics

3 credits/3 class hours

This course is a study of the scientific aspects of criminal investigation. Included are the study of fingerprints, the application of forensic sciences, and the collection and examination of evidence. The student learns the capabilities of the advanced police science laboratory in the study of firearms, hair, fibers, blood, paint, tools, poisons and other material.

CJC-206 Police Operations

3 credits/3 class hours

This course is a study of law enforcement from an operational perspective. Law enforcement functions such as patrol, communications, investigations, traffic, special operations and other line and staff functions are reviewed. Officer safety and duty-related stress are also examined.

CJC-207 Introduction to Criminology

3 credits/3 class hours

This course is a survey of the patterns and trends in adult criminal behavior and juvenile delinquency analyzed in terms of various theories of such behavior. Students will also examine types of crime and the administration of justice. Material is presented describing the types and amount of crime in the United States. Characteristics such as age, race, gender and class of offender types are discussed. The interaction between society, the criminal justice system and the offender is examined. The current correctional practices that focus on the goals, organization, functions and operations of state, county and local correctional systems are examined. Theories on crime causation are analyzed.

CJC-209 Community-Based Corrections

3 credits/3 class hours

This course is designed to provide students with an overview of the U.S. correctional system, its history, development and contemporary practices. The philosophy, ethical dilemmas and methods of imposing sanctions upon offenders in the criminal justice system will be explored in depth. Exploration of the theories and practice in probation, parole, community-based services, jails, prisons and capital punishment will comprise much of the course.

CJC-211 Treatment of Offenders: Issues and Strategies

3 credits/3 class hours

This is an examination of the history and philosophy of treatment, the structure of the correctional system and the legal basis for treatment. Consideration is given to the history of corrections and how that history has shaped treatment approaches. This course focuses on treatment modalities presently employed in working with offenders. This course also examines issues of public safety, security and raises questions about whether any treatment methods are, in fact, effective.

CJC-214 Criminal Justice Administration Practicum
3 credits/1 class & 2 practicum hours
Prerequisite: Criminal Justice/Corrections Major with at least 45 credits or permission of the instructor

This course is designed to provide the student with practical experience in a criminal justice project/agency.

Culinary Arts (CLR)

CLR-100 Introduction to Foodservice
3 credits/3 class hours

This is a course in the history of cuisine and the contribution of leading culinarians. Various types of foodservice establishments and organization within each type, as well as future trends in the foodservice industry, are studied.

CLR-102 Food and Beverage Service
3 credits/3 class hours

This is a course in the dining service appropriate for coffee shops, dining rooms, banquets and buffets. Included are liquor laws and the service of legal beverages.

CLR-105 Supervision and Training
3 credits/3 class hours

This is a course in the supervision and training of employees. Topics include the development of public relations with other departments, group techniques, methods of improvement and development and cost consciousness.

CLR-110 Applied Foodservice Sanitation and Safety
3 credits/2 lecture & 2 lab hours
Corequisite: *CLR-110L*

This is a course in sanitation and safety in food service. Topics include food spoilage, food-borne illnesses, food protection, equipment care and personal hygiene. Emphasized is the role of the foodservice industry in the protection of the public's health. The student prepares to take the National Sanitation examination.

CLR-117 Applied Sciences of Culinary Arts Theory
3 credits/2 lecture & 2 lab hours
Corequisite: *CLR-117L*

This is a course in the fundamentals of food preparation, service procedures, sanitation and safety practices in the foodservice business. Controls and management function are discussed.

CLR-118 Applied Science of Culinary Arts Practice
3 credits/2 lecture & 2 lab hours
Prerequisite: *CLR-117*

This is a course in the fundamentals of food preparation, service procedures, sanitation and safety practices in the foodservice business. Controls and management function are discussed.

CLR-119 Elements of Nutrition
3 credits/3 class hours

This is a course in basic concepts of nutrition and diet therapy using normal nutrition as the basis for diet modification.

CLR-121 Culinary Arts Practicum 1
2 credits/

A qualified chef, who is a member of the American Culinary Federation, will supervise this on-the-job apprentice training. Upon successful completion of this course, the student will be able to apply food preparation and presentation techniques and gain experience in all phases of foodservice operation.

CLR-201 Baking 1
3 credits/2 lecture & 2 lab hours
Prerequisites: *CLR-201*

This is a course in baking which involves preparation of yeast rolls, breads, pies, cakes, cookies, tarts, doughnuts, holiday specialties and tortes. Topics include proper use and care of equipment, sanitation and hygienic work habits and legal health requirements.

CLR-202 Food Service Specialties—Garde Manger 1
3 credits/2 lecture & 2 lab hours

This is a course in special Garde-Manger techniques such as ice and tallow sculpturing. Manipulation of tools is emphasized. Buffet showpieces such as watermelon baskets, table arrangements of fresh fruits and vegetables and accent decorative showpieces are made. The art of pulled sugar is introduced.

CLR-203 Food Service Specialties—Garde Manger 2
3 credits/2 lecture & 2 lab hours

This is a course in advanced Garde-Manger techniques, such as aspic-pates, chaud-froid, terrines, galantines and sauces. Manipulation of tools is emphasized. Buffet table arrangement and organization are included.

CLR-205 Purchasing Procedures
3 credits/3 class hours

This is a course in purchasing, purchasing techniques and laws governing the food industry.

CLR-210 Baking 2
3 credits/1 lecture & 2 lab hours
Prerequisite: *CLR-201*

Upon successful completion of this course, the student will be able to demonstrate a working knowledge of the preparation of specialty baking products.

CLR-211 Menu Design
3 credits/3 class hours

This is a course in menu design. Included are principles and practices of pricing menus, ordering, converting recipes from small to large quantities, various types of menus and food preferences of the public. The principles of nutrition for planning well-balanced menus receive special emphasis.

CLR-220 Applied Foodservice Production
3 credits/3 lab hours
Prerequisites: *CLR-110, CLR-117, CLR-118 & CLR-202*

This course is designed to help the student's transition from basic to intermediate food skills. Upon successful completion of this course, the students will be able to demonstrate the skills necessary to prepare secondary sauces as well as a range of American regional cuisines. This course consists of lecture, demonstration and participation in food preparation.

CLR-228 Advanced Food Preparation
3 credits/2 lecture & 2 lab hours
Prerequisites: *CLR-118 & CLR-220*

Upon successful completion of this course, the student should be able to demonstrate an understanding of the advanced skills necessary for preparing international cuisine.

CLR-230 Culinary Arts Externship

4 credits/300 lab hours

Prerequisites: CLR-117, CLR-118 & CLR-201

Corequisite: CLR-202

Students enrolled in the chef's non apprenticeship option program are required to complete a minimum of 300 hours of practical experience. This course provides the student with an opportunity to apply the basic techniques developed in the classroom and laboratory to an actual foodservice operation. This course-externship may only be taken after successful completion of: *Applied Science of Culinary Arts Theory, Applied Sciences of Culinary Arts Practice and Foodservice Specialties 1—Baking*. In addition, the student must be currently enrolled in or have completed *Garde Manger 1*, to be eligible for externship.

Court Reporting (CRT)**CRT-100 Court Reporting Orientation**

1 credit/1 class hour

This course introduces the students to the profession of court reporting. Topics include the history of court reporting, educational requirements, the duties and responsibilities of court reporters, professional organizations, certification testing, and career options in the fields of judicial, freelance, closed captioning and Computer Aided Realtime Translation (CART). Speakers include practicing court reporters from local firms and courts. A field trip to a closed captioning agency is offered. This course is open to any student with an interest in the court reporting profession.

CRT-101 Court Reporting 1

4 credits/4 class hours

Corequisite: CRT-103

This course introduces the student to the theory of writing conflict-free machine shorthand outlines. The student will develop the ability to write words, sentences and paragraphs through daily dictation and drills. The student will demonstrate the ability to write Literary material in realtime at 60-80 words per minute.

CRT-102 Court Reporting 2

3 credits/3 class hours

Prerequisite: CRT-101

Corequisites: CRT-104 & CRT-205

This course is a continuation of the conflict-free theory for writing machine shorthand. The student will demonstrate skill building through dictation, readback of notes, machine practice and transcription. Instruction is placed on writing terminology that requires multi-strokes and developing skill in writing every word of the English language.

CRT-103 Machine Shorthand Theory

4 credits/4 class hours

Corequisite: CRT-101

This course introduces the student to the theory of writing conflict-free machine shorthand outlines. The alphabet, briefs and phrases and fingering exercises will be taught. The student will develop the ability to write words, sentences and paragraphs on the Stenograph machine through daily dictation and drills.

CRT-104 Speedbuilding

3 credits/3 class hours

Prerequisite: CRT-101

Corequisites: CRT-102 & CRT-205

This course uses dictation and practice of Literary and Question and Answer material. The goal is 90-110 words per minute for five minutes with transcription accuracy at 95 percent or better. Dictation and transcription skills are emphasized and tested.

CRT-106 Question & Answer 1

3 credits/3 class hours

Prerequisites: CRT-102 & CRT-104

Corequisites: CRT-107 & CRT-108

This course emphasizes speed development and readback of Question and Answer material. Appropriate abbreviations and phrases used in testimony are reviewed. Colloquy designations are stressed in multi-voice material. The goal is writing 120-140 words per minute for five minutes with transcription accuracy of 95 percent or better using Case CATalyst software.

CRT-107 Jury Charge 1

3 credits/3 class hours

Prerequisites: CRT-102 & CRT-104

Corequisites: CRT-106 & CRT-108

This course emphasizes speed development and readback of Jury Charge material. Appropriate abbreviations and phrases used in Jury Charge are reviewed. The goal is 120-140 words per minute for five minutes with transcription accuracy of 95 percent or better using Case CATalyst software.

CRT-108 Literary 1

3 credits/3 class hours

Prerequisites: CRT-102 & CRT-104

Corequisites: CRT-106 & CRT-107

This course emphasizes speed development of Literary material. Oral note reading is also stressed. The goal is writing 100-120 words per minute for five minutes with transcription accuracy of 95 percent or better using Case CATalyst software.

CRT-111 Court Transcription 1

3 credits/3 class hours

This course offers an introduction to court reporting transcript production, including matters of English grammar, usage, and punctuation in combination with formatting of text to accurately reflect the verbatim, spoken word in text documents. Reinforcement and development of language skills and transcript-related computer skills are emphasized.

CRT-205 Machine Shorthand Companion

3 credits/3 class hours

Prerequisites: CRT-101 & CRT-103

Corequisites: CRT-102 & CRT-104

This course is offered in conjunction with CRT-102. In this course students are drilled on machine shorthand theory. Emphasis is placed on developing skill and proficiency in the mastery of the complete theory of machine shorthand writing. The course focuses on the development of accurate writing skills and understanding of theory principles. Dictation and drill are conducted daily.

CRT-206 Question and Answer 2

3 credits/3 class hours

Prerequisite: CRT-106

Corequisites: CRT-207 & CRT-208

This course emphasizes speed development and readback of Question and Answer material. Appropriate abbreviations and phrases used in testimony are reviewed. Colloquy designations are stressed in multi-voice material. The goal is writing 150-160 words per minute for five minutes with transcription accuracy of 95 percent or better using Case CATalyst software.

CRT-207 Jury Charge 2

3 credits/3 class hours

Prerequisite: CRT-107

Corequisites: CRT-206 & CRT-208

This course emphasizes speed development and readback of Jury Charge material. Appropriate abbreviations and phrases used in Jury Charge are reviewed. The goal is 140-160 words per minute for five minutes with transcription accuracy of 95 percent or better using Case CATalyst software.

CRT-208 Literary 2
3 credits/3 class hours
Prerequisite: *CRT-108*
Corequisites: *CRT-206 & CRT-207*

This course emphasizes speed development of Literary material. Oral note reading is also stressed. The goal is writing 120-140 words per minute for five minutes with transcription accuracy of 95 percent or better using CaseCATalyst software.

CRT-211 Court Transcription 2
3 credits/3 class hours
Prerequisite: *CRT-111*

This course covers court reporting procedures and the proper transcript format for depositions and trials. Current methods of producing the transcript are reviewed. Students are required to build a personal computer dictionary. A mock deposition and recording are used as learning tools.

CRT-216 Question and Answer 3
3 credits/3 class hours
Prerequisite: *CRT-206*
Corequisites: *CRT-217 & CRT-218*

This course emphasizes speed development and readback of Question and Answer material. Appropriate abbreviations and phrases used in testimony are reviewed. Colloquy designations are stressed in multi-voice material. The goal is writing 180 words per minute for five minutes with transcription accuracy of 95 percent or better using Case CATalyst software.

CRT-217 Jury Charge 3
3 credits/3 class hours
Prerequisite: *CRT-207*
Corequisites: *CRT-216 & CRT-218*

This course emphasizes speed development and readback of Jury Charge material. Appropriate abbreviations and phrases used in Jury Charge are reviewed. The goal is 160-180 words per minute for five minutes with transcription accuracy of 95 percent or better using Case CATalyst software.

CRT-218 Literary 3
3 credits/3 class hours
Prerequisite: *CRT-208*
Corequisites: *CRT-216 & CRT-217*

This course emphasizes speed development and readback of Literary material. The goal is writing 150 words per minute for five minutes with transcription accuracy of 95 percent or better using Case CATalyst software.

CRT-226 Question and Answer 4
3 credits/3 class hours
Prerequisite: *CRT-216*
Corequisites: *CRT-227 & CRT-228*

This course emphasizes speed development and readback of Question and Answer material. Appropriate abbreviations and phrases used in testimony are reviewed. Colloquy designations are stressed in multi-voice material. The goal is writing 225 words per minute for five minutes with transcription accuracy of 95 percent or better using Case CATalyst software. This proficiency must be demonstrated three times.

CRT-227 Jury Charge 4
3 credits/3 class hours
Prerequisite: *CRT-217*
Corequisites: *CRT-226 & CRT-228*

This course emphasizes speed development and readback of Jury Charge material. Appropriate abbreviations and phrases used in Jury Charge are reviewed. The goal is 200 words per minute for five minutes with transcription accuracy of 95 percent or better using Case CATalyst software. This proficiency must be demonstrated three times.

CRT-228 Literary 4
3 credits/3 class hours
Prerequisite: *CRT-218*
Corequisites: *CRT-226 & CRT-227*

This course emphasizes speed development and readback of Literary material. The goal is writing 180 words per minute for five minutes with transcription accuracy of 95 percent or better using Case CATalyst software. This proficiency must be demonstrated three times.

CRT-251 Court Reporting 6
3 credits
Prerequisite: *CRT-104*

This course emphasizes speed development in Literary, Jury Charge and Question and Answer material. The course prepares the student to increase speed and accuracy through weekly testing. The goal is to write machine shorthand tests for five minutes with transcription accuracy of 95 percent or better using Case CATalyst software.

CRT-252 Court Reporting Internship
3 credits/3 class hours
Prerequisite: *CRT-218*

This course is a practical work experience for the court reporting student, arranged in consultation and conjunction between the internship student, the supervising faculty member and the internship site. The student spends no less than 40 verified hours writing judicial, closed captioning or Computer Access Realtime Translation (CART) material under the supervision of a court reporter. To complete the course the student will produce 40 pages of transcript for grading purposes and write a narrative detailing their internship experience. The course consists of scheduled classroom sessions with the instructor, individual appointments and on-the-job training. Students are assigned to Judicial, Freelance, Closed Captioning and CART environments.

Central Service Technician (CST)

CST-103 Inventory Management for Central Service
3 credits/3 class hours
Prerequisite: Acceptance to the Central Service Technician program
Corequisite: *SUR-110* or employed central service technician

This course is a central service certification preparatory course. The student will be introduced to the expanding roles of the Central Service Technician as it relates to all areas of the institution. This course will include an introduction to the anatomical systems and medical terminology as they relate to hospital equipment. Theory will include basic anatomy and the corresponding equipment, inventory management and distribution, risk management, reusable versus disposable products, inventory control, purchasing, off-site warehousing and regulatory agencies. There will be a review of all aspects of central service including sterilization, disinfection, packaging, instrumentation, human relationship skills and teamwork.

CST-112 Central Service Clinical
6 credits/24 clinical hours per week
Prerequisite: Acceptance into the Central Service Technician Program
Corequisite: *SUR-110*

This is a course in which students are assigned to various clinical sites under the supervision of a surgical technology instructor. Students will gain exposure to the various aspects of central service to obtain direct experience in instrumentation and processing, decontamination, sterilization, wrapping, equipment maintenance, distribution and case cart systems.

Dance (DAN)

DAN-101 Modern Dance 1
3 credits/1 class & 2 studio hours

This course is an introduction to modern dance. Students will gain an understanding of dance as an art form. Various dance techniques will be explored to further the student's physical and kinesthetic abilities. Aesthetic analysis of a variety of dance styles will provide an understanding of the communicative potential of dance. No prior dance training is required.

DAN-102 Modern Dance 2
3 credits/1 class & 2 studio hours
Prerequisite: *DAN-101*

In this class, students will increase the technical skills acquired in Modern Dance 1. Muscular strength, flexibility and cardiovascular capacity will be increased. Compositional tools will be presented, enabling the students to use dance as a means of artistic expression.

DAN-130 Dance Practicum 1
3 credits/3 class & 3 studio hours

In this class there is the practical application of dance performance techniques. Students will participate in both student and faculty choreographed works, culminating in a fully produced dance concert in the South campus Theatre. All aspects of dance performance, choreography and production will be explored and refined.

DAN-131 Dance Practicum 2
3 credits/1 class & 2 studio hours
Prerequisite: *DAN-130*

This course is an intensive study in the practical application of dance performance techniques. Students will participate in both student and faculty choreographed works, culminating in a fully produced dance concert. All aspects of dance performance, choreography and production will be explored and refined.

DAN-201 Modern Dance 3
3 credits/3 class & 2 studio hours
Prerequisites: *DAN-101 & DAN-102*

This is an intermediate level technique class; students will increase their muscular strength, flexibility, kinesthetic awareness and cardiovascular capacity. Modern dance exercises will be presented to enhance the student's spatial and rhythmic awareness. Choreographic techniques for small groups will be explored.

DAN-202 Modern Dance 4
3 credits/3 class & 2 studio hours
Prerequisites: *DAN-101, DAN-102 & DAN-201*

In this class, students will refine their skills as dancers. Advanced level exercises will challenge the students physically and artistically. Performance techniques will be developed as well as choreography for large groups.

DAN-230 Dance Practicum 3
3 credits/1 class & 2 studio hours
Prerequisite: *DAN-131*

This course is a continuation of the intensive study in the practical application of dance performance techniques. Students will participate in both student and faculty choreographed works, culminating in a fully produced dance concert. All aspects of dance performance, choreography and production will be explored and refined.

DAN-231 Dance Practicum 4
3 credits/1 class & 2 studio hours
Prerequisite: *DAN-230*

This course is an intensive study in the practical application of dance performance techniques. Students will participate in both student and faculty choreographed works, culminating in a fully produced dance concert in the South Campus Theatre. All aspects of dance performance, choreography and production will be explored and refined.

Dietetics (DIT)

DIT-102 Dietetic/Food Service Orientation
3 credits/3 class hours

This is an introductory course that provides the student with an overview of both the foodservice and clinical aspects of the professional role of the dietetic technician and the dietary manager in a variety of settings. Field visits and guest speakers enhance content.

DIT-103 Nutrition Assessment
2 credits/2 class hours
Corequisite: Concurrent course in nutrition or department approval

This course introduces the student to the application of the basic principles of normal nutrition. Students will learn how to collect data and interpret data to be used by a DTR or made available to an RD for interpretation. This course includes practice in completing diet history, calculation of nutrient composition of the diet using a computer program and skin fold measurements.

DIT-104 Foods
3 credits/3 lecture
Corequisite: *DIT-105*

This course provides the scientific and consumer aspects of food. A working knowledge of principles of food preparation is combined with menu planning, recipe analysis, and costing.

DIT-105 Foods Lab
1 credit/3 lab hours
Corequisite: *DIT-104*

This is the study of and application of the basic principles of food preparation which includes the study of soups and sauces, starch foods, meats and poultry, fish, shellfish and eggs and desserts. The course culminates in a final luncheon project planned and prepared by the class. In addition proper use and care of equipment, sanitation and safe work habits is included.

DIT-106 Fundamentals of Nutrition
3 credits/3 class hours

This is an introductory course which focuses on the major nutrients, including carbohydrates, fats, protein, vitamins, minerals and water. Throughout the course, practical application of information is emphasized. Special topics addressed include: weight control, eating disorders and sports nutrition. This course is open to non-dietetics majors.

DIT-110 Food Service Production and Purchasing
3 credits/3 class hours

This course studies the tools of management as they relate to food service. Topics include safety, sanitation, master menu development, recipe standardization, food and menu cost analysis, facilities, planning, design and equipment selection for a foodservice department.

DIT-113 Dietetic Practicum Seminar
2 credits/2 class & 30 Practicum hours
Prerequisites: *DIT-102, DIT-103, DIT-104, DIT-106, DIT-110, DIT-114, DIT-125 & ALH-140*
Corequisite: *DIT-201*

Provided concurrently with *Dietetic Practicum 1*, this course presents a review of the material presented in *Fundamentals of Nutrition, Foods, Foodservice Production and Purchasing and Medical Nutrition Therapy*. In addition to providing didactic support for the practicum it enables the students to share and gain by their individual experiences.

DIT-114 Medical Nutrition Therapy

4 credits/4 class hours

Prerequisites: *DIT-103 & DIT-106*

Corequisite: *ALH-140*

This course introduces the student to the concept of modifying the general diet to meet various medical conditions. Principles of patient interviewing, analysis of the patient's nutritional needs and the interpretation of food restrictions in menu planning and food shopping are presented. The physical, psychological and social needs of the patient are presented with emphasis on nutritional consequences. This course includes the study of nutritional care of the patient with upper and lower gastrointestinal disorders, weight management, diabetes and related endocrine disorders, coronary heart disease, atherosclerosis, enteral feeding, TPN, liver disorders, renal disease, cancer, AIDS/HIV and feeding disabilities.

DIT-125 Food Protection Certification

2 credits/2 class hours

This course meets the requirements mandated by the Pennsylvania Food Employee Certification Act. Topics included are the types and characteristics of pathogenic bacteria, most common types of food borne illnesses, hazard analysis critical control point (HACCP) system and proper procedures for receiving, storing, preparing and handling foods. This course emphasizes practical application of safe food handling techniques to protect the public health. Students are eligible to sit for a nationally recognized certification exam. This examination is a component of this course.

DIT-201 Dietetic Supervised Practice 1

5 credits/240 practicum hours

Prerequisites: *DIT-102, DIT-103, DIT-106, DIT-110, DIT-114 & DIT-125*

Corequisite: *DIT-113*

This course provides an orientation to the practice of dietetics in a healthcare facility under the supervision of a Registered Dietitian (RD). The principles of nutrition care and foodservice operations are observed and practiced.

DIT-208 Community Nutrition

4 credits/4 class hours

Prerequisite: *DIT-114*

This course applies the principles of nutrition presented in *Introduction to Nutrition and Medical Nutrition Therapy* to the community setting. The nutritional requirements of individuals in various segments of the life cycle are presented. Community programs that help meet the nutritional requirements of individuals throughout the life cycle are highlighted. Patient education techniques are presented.

DIT-209 Dietetic Supervised Practice 2

4 credits/2 clinical & 240 practicum hours

Prerequisites: *DIT-114 & DIT-208*

This course is planned to give each student the opportunity to apply principles discussed in *Medical Nutrition Therapy* in a community nutrition setting. It is expected that students will learn how community nutrition is similar to and different from clinical nutrition. Each student will be expected to complete a project suggested by the practicum supervisor. The project should be one that fulfills a need of the practicum.

DIT-210 Human Resource Management for Dietetics

3 credits/3 class hours

This course provides an overview of the organization and management of foodservice in the healthcare industry. Topics include the management of food production personnel, selection process, orientation and training of new and established employees, job analysis procedures, employee evaluation procedures and the principle of work simplification.

DIT-212 Food Service Systems

3 credits/3 class hours

Prerequisites: *DIT-104, DIT-110, DIT-125 & DIT-210*

This course provides information on the food management practices in the hospitality and healthcare industry. It deals with the various foodservice systems, styles of food service, principles of kitchen design, menu merchandising, environmental and waste management systems and management of information systems.

DIT-214 Dietetic Seminar

1 credit/1 class hour

Prerequisite: Successful completion of two terms in the Dietetics program

This course provides the student with skills necessary to be successful in the completion of the national registry exam and job search process. In addition, this course will review the process of establishing a professional portfolio, making application for and maintaining registration status.

Diagnostic Medical Sonography (DMS)

DMS-102 Introduction to Clinical Experience: Patient Care and Ethical/Legal Issues

2 credits/3 lecture per week for 3 weeks,

3 lab hours per week for 5 weeks &

4 clinical hours per week for 7 weeks

Prerequisites: Acceptance to the DMS program, *BIO-161, BIO-162, ENG-101, MAT-108, PHY-100*

Corequisite: *DMS-105*

This course is designed to offer the student a first hands-on clinical experience. In the clinical setting the emphasis is placed on familiarizing the student with imaging equipment controls, transducer position relative to the anatomy to be scanned, scanning techniques for the various protocols and patient care procedures. The lecture portion of this course presents the physical and emotional assessment of the patient, medical asepsis, body mechanics, medical emergencies, professional ethics, medical and legal issues as well as relative medical/legal terminology. The lab portion consists of demonstration and practice in these areas. The clinical portion of this course introduces the student to the healthcare setting and enable students to scan patients.

DMS-103 Abdominal, Obstetrical and Gynecological Ultrasound

4 credits/3 lecture & 2 lab hours

Prerequisites: *BIO-162, DMS-102, DMS-105, MAT-108 & PHY-100*

Corequisites: *DMS-113 & PHY-127*

This course will present an intense study of the abdominal, pelvic and fetal structures that can be evaluated employing ultrasound as an imaging modality. The student is provided with information concerning the normal ultrasound appearance of tissues, organs and systems within the abdomen, pelvis and fetus. Ultrasound images representative of normal states will be presented and correlated with examinations performed with other diagnostic modalities. Technical information such as procedural and scanning techniques are discussed throughout the course.

DMS-104 Cardiac Ultrasound

4 credits/3 lecture & 2 lab hours

Prerequisites: *BIO-162, DMS-102, DMS-105, MAT-108 & PHY-100*

Corequisites: *DMS-114 & PHY-127*

This course focuses on the ultrasonic investigation of the heart. Echocardiography is viewed from both an historical, as well as state-of-the-art perspective. The anatomy and physiology, particularly the cross-sectional anatomy of the mediastinal contents, will be reviewed. Echocardiograms representative of normal cardiac anatomy will be presented and compared with examinations performed by other diagnostic modalities. Procedural and scanning techniques are presented, as well as sonographic positioning unique to echocardiography.

DMS-105 Cross-sectional Anatomy for Ultrasonography

4 credits/2 class & 2 lab hours

Prerequisites: Acceptance to the DMS program, *BIO-161*, *BIO-161*, *ENG-101*, *MAT-108*, *PHY-100*Corequisite: *DMS-102*

This course will consider the human anatomy through the evaluation of sagittal, transverse and coronal body sections. Organs and structures of the head, neck, thorax, abdomen, pelvis and extremities will be presented and correlated with pictorial sections obtained through cadaver dissection. Cadaver pictorial sections will be correlated with ultrasound, MRI and CAT images.

DMS-113 Ultrasound Clinical 1/Abdomen-OB/GYN

2 credits/8 clinical hours per week

Prerequisites: *BIO-162*, *DMS-102*, *DMS-105*, *MAT-108* & *PHY-100*Corequisites: *DMS-103* & *PHY-127*

This clinical course offers the student participation in the various steps involved in the ultrasound examination of the patient. The student shares responsibility with the abdominal, obstetrical and gynecological clinical instructor for scheduling, identifying and preparing the patient for examination. The student assures that patient preparation is properly followed for the given examination, scans the patient and develops skills in examination progression. The student gains skill and confidence in presenting the case before the interpreting physician.

DMS-114 Ultrasound Clinical 1/Cardiac

2 credits/8 clinical hours per week

Prerequisites: *BIO-161* *DMS-102*, *DMS-105*, *MAT-108* & *PHY-100*Corequisites: *BIO-162*, *DMS-104* & *PHY-127*

This clinical course offers the student participation in the various steps involved in cardiac ultrasound examination of the patient. The student shares responsibility with the cardiac clinical instructor for scheduling, identifying and preparing the patient for examination. The student assures that patient preparation is properly followed for the given examination. The student scans the patient and develops skills in examination progression. The student develops skill and confidence in presenting the echocardiographic study to the interpreting physician.

DMS-115 Ultrasound Clinical 2/Abdomen-OB/GYN

4 credits/40 clinical hours per week for six weeks

Prerequisites: *DMS-103*, *DMS-113* & *PHY-127*

The student develops skills in scanning, interpretation of the sonogram and in recognizing normal anatomical variations. The student gathers pertinent clinical data in order to understand the total medical picture of the patient prior to the ultrasound examination. The student presents cases to the interpreting physician. The student becomes familiar with portables, surgical and special sonographic procedures and assist in these areas. (The student is assigned to a full-time clinical experience over six weeks.)

DMS-116 Ultrasound Clinical 2/Cardiac

4 credits/40 clinical hours per week for six weeks

Prerequisites: *DMS-104*, *DMS-114* & *PHY-127*

This clinical course offers the student participation in the various steps involved in cardiac ultrasound examination of the patient. The student shares responsibility with the clinical instructor for scheduling, identifying and preparing the patient for examination. The student assures that patient preparation is properly followed for the given examination. Skills in scanning that have been developed in *DMS-114 Cardiac Clinical 1* and *DMS-104 Cardiac Ultrasound* are further advanced. Skills in patient scanning and examination progression are developed. The student gains skill and confidence in presenting the case to the interpreting physician. (The student is assigned to a full-time clinical experience over six weeks.)

DMS-125 Vascular Ultrasound

4 credits/3 lecture & 2 lab hours

Prerequisites: *BIO-162*, *DMS-102*, *DMS-105*, *MAT-108* & *PHY-100*Corequisites: *DMS-135* & *PHY-127*

Theory and practical application are combined to progress the beginning student's ability to scan and read normal vascular examinations by semester's end. The theory portion of the course will consist of learning normal anatomy, sonographic characteristics and the hemodynamic principles of the peripheral vascular system, the cerebral vascular system and the vessels of the abdomen. Instrumentation, scanning techniques, audible signals made by normal blood flow and position of the transducer for each vessel will be covered in the laboratory portion of the course.

DMS-135 Ultrasound Clinical 1/Vascular Ultrasound

2 credits/8 clinical hours a week

Prerequisite: *BIO-162*, *DMS-102*, *DMS-105*, *MAT-108* & *PHY-100*Corequisites: *DMS-125* & *PHY-127*

This clinical course offers the student participation in the various steps involved in the ultrasound examination of the patient. The student shares responsibility with the vascular instructor for scheduling, identifying and preparing the patient for examination. The student assures that patient preparation is properly followed for the given examination, scans the patient and develops skills in examination progression. The student gains skill and confidence in presenting the case before the interpreting physician.

DMS-137 Ultrasound Clinical 2/Vascular

4 credits/40 clinical hours per week for six weeks

Prerequisite: *DMS-125*, *DMS-135* & *PHY-127*

This clinical course offers the student progressively greater participation in the various steps involved in the vascular examination of the patient. Skills in scanning that have been developed in previous clinical courses are utilized. The student develops skills in recognizing normal anatomy as well as pathology. Progression of the examination is performed by the student under the direct supervision of the clinical instructor. The student continues to gather pertinent clinical information in order to understand the total medical picture of the patient prior to the vascular examination. The student is introduced to and assists in portable examinations and special procedures. The student gains skill and confidence in presenting the case before the interpreting physician. (The student is assigned to a full-time clinical experience over six weeks.)

DMS-203 Advanced Abdomen and Small Parts Ultrasound

5 credits/4 lecture & 2 lab hours

Prerequisite: *DMS-115*Corequisites: *DMS-210* & *DMS-223*

This course will be divided into two learning modules. The first module lasting five weeks will consist of lecture and lab covering normal and abnormal ultrasound appearance of the thyroid, breast, scrotum and prostate. Scanning techniques of those structures will also be covered. The second module lasting 10 weeks will consist of lecture only and cover pathological conditions of the abdominal organs. Ultrasound images representative of disease states of organs and systems of the abdominal cavity will be presented and correlated with examinations performed with other diagnostic modalities. Relevant histologic aspects of various pathological conditions will be discussed and correlated with their acoustical properties and ultrasound characteristics. Clinical features, laboratory data and the pathophysiology of pertinent diseases will be presented.

DMS-204 Advanced Cardiac Ultrasound

5 credits/5 class hours

Prerequisite: *DMS-116*Corequisites: *DMS-210* & *DMS-224*

This course is for ultrasound students specializing in echocardiography. Abnormal cardiac anatomy and physiology will be studied. M-mode, two-dimensional, continuous wave, pulsed wave and color flow doppler will be correlated with pathologies. Echocardiographic tapes and case studies will be presented and correlated with clinical features of cardiac pathology. Cardiac surgical procedures and pharmacology will be studied.

DMS-207 Advanced Vascular Ultrasound

5 credits/5 lecture hours

Prerequisite: *DMS-137*Corequisites: *DMS-210 & DMS-235*

This is a continuation of *Vascular Ultrasound* in which the emphasis is placed on pathological states of the peripheral vascular, cerebrovascular and abdominal vascular systems. This course will offer valuable information on Doppler vascular imaging to sonographers planning to sit for the vascular boards. Technical information such as spectral analysis in Doppler, hemodynamics of the circulatory system as well as scanning techniques and protocols will be covered.

DMS-210 Ultrasound Instrumentation and Quality Control

3 credits/2 lecture & 2 lab hours

Prerequisites: *PHY-127, DMS-115, DMS-116 & DMS-137*Corequisites: *DMS-203, DMS-204, DMS-207, DMS-223, DMS-224 & DMS-235*

This is a course which combines theory and practice in ultrasound instrumentation and quality control. Topics include functions of the components of processing, scan converter displays, image and display techniques, film and methods of permanent image recording, ultrasound transducers, operating standards, equipment calibration, resolution, gray scale photography and film critique.

DMS-211 Breast Ultrasound

3 credits/3 lecture hours

Prerequisites: Radiography Certification (RT)R, current student in an accredited DMS program, graduate from an accredited DMS program or certification by ARDMS in any specialty;

DMS-292 or PHY-127

This course is designed to provide knowledge based instruction in the area of breast sonography. Topics to be discussed will be, normal anatomy of the adult breast, various pathologies of the breast including benign conditions as well as malignant diseases. Additional topics to be discussed will be sonographic characteristics of normal anatomy and pathological lesions. Normal and pathological states will be correlated with mammographic findings. Various biopsy techniques of the breast will also be discussed.

DMS-223 Ultrasound Clinical 3/Abdomen–OB/GYN

6 credits/24 clinical hours per week

Prerequisite: *DMS-115*Corequisites: *DMS-203 & DMS-210*

The student will have the opportunity to refine skills in scanning, interpretation of the sonogram and in recognizing normal anatomical variations as well as pathology. The student will be able to gather pertinent clinical data in order to understand the total medical picture of the patient prior to the ultrasound examination. The student will be responsible for becoming familiar with portable, surgical and special sonographic procedures and will assist in these areas.

DMS-224 Ultrasound Clinical 3/Cardiac

6 credits/24 clinical hours per week

Prerequisite: *DMS-116*Corequisites: *DMS-204 & DMS-210*

This clinical course offers the student progressively greater participation in the various steps involved in the cardiac ultrasound examination of the patient. The student will share with the clinical instructor responsibilities for scheduling, identifying and preparing the patient for examination. The student will assure that patient preparation is properly followed for the given examination. Skills in scanning that have been developed in previous lecture/lab and clinical courses will be utilized. Progression of the examination will be performed by the student under direct supervision of the clinical instructor. Competencies in advanced echocardiographic techniques will be developed. Skill and confidence in presenting the echocardiographic examination to the interpreting physician will be developed.

DMS-225 Ultrasound Clinical 4/Abdomen–OB/GYN

6 credits/24 clinical hours per week

Prerequisites: *DMS-203, DMS-210 & DMS-223*Corequisites: *DMS-227 & DMS-228*

This course will offer the student an opportunity to refine skills in scanning, interpretation of the sonogram and recognize normal anatomical variations and pathology. The student will be able to gather pertinent clinical data in order to understand the total medical picture of the patient prior to the ultrasound examination. The student will become familiar with portable, surgical and special sonographic procedures, will assist in these areas and will be encouraged to seek additional experience in carotid Doppler and peripheral vascular Doppler examinations.

DMS-226 Ultrasound Clinical 4/Cardiac

6 credits/24 clinical hours per week

Prerequisites: *DMS-204, DMS-210 & DMS-224*Corequisite: *DMS-228*

This clinical course will offer the student increased participation in the cardiac ultrasound examination of the patient. The student will share with the clinical instructor responsibility for scheduling, identifying and preparing the patient for examination. The student will assure that the patient preparation was properly followed for the given examination. Skills in scanning that have been developed in previous lectures/labs and clinical courses will be utilized. Progression of the examination will be performed by the student under direct supervision of the clinical instructor. Competencies in advanced echocardiographic techniques will be developed.

DMS-227 Advanced OB/GYN Ultrasound

3 credits/3 class hours

Prerequisites: *DMS-203, DMS-210 & DMS-223*Corequisites: *DMS-225 & DMS-228*

This course will provide students specializing in the general tract with information concerning the abnormal ultrasound appearance of tissues, organs and systems of the female pelvis and fetus. Ultrasound images representative of disease states will be presented and correlated with examinations performed with other diagnostic modalities. Relevant histologic aspects of various pathological conditions as well as congenital anomalies of the fetus will be discussed and correlated with their acoustical properties and ultrasound characteristics. Clinical features, laboratory data and the pathophysiology of pertinent diseases will be presented. Technical information, such as procedural and scanning techniques will be discussed throughout the course.

DMS-228 Doppler Vascular Sonography

4 credits/3 lecture & 2 lab hours

Prerequisites: *DMS-203, DMS-204, DMS-210 & DMS-223 or DMS-224*Corequisites: *DMS-225 & DMS-227 or DMS-226*

This course will combine theory and practical application to advance the technical skills of both the experienced and the new sonographer. This course will offer valuable information to those sonographers planning to sit for the RVT boards and introduce the new sonographers to Doppler Vascular Imaging. Normal as well as pathological states of the peripheral and cerebrovascular system will be covered. Technical information such as protocols, spectral analysis in Doppler and scanning techniques will be taught as well as hemodynamics of the circulatory system and the physics and instrumentation of Doppler. During the practical lab experience the student applies classroom learning to scanning problems.

DMS-235 Ultrasound Clinical 3/Vascular
6 credits/24 clinical hours per week
Prerequisite: *DMS-137*
Corequisites: *DMS-207* & *DMS-210*

This clinical course offers the student experience in developing clinical skills in recognizing pathology or abnormal anatomy. The student will have the opportunity to maintain skills previously learned and to continue to develop new scanning skills. The student will continue to develop skills in the progression and completion of the examination. The student will begin to become independent of the clinical supervisor in the performance of the ultrasound examination. The student will assist in portable examinations and special procedures. Gaining skill and confidence in presenting the case before the interpreting physician will continue during this clinical experience. (Three full-time days per week)

DMS-237 Ultrasound Clinical 4/Vascular
6 credits/24 clinical hours per week
Prerequisites: *DMS-207*, *DMS-210* & *DMS-235*
Corequisite: *DMS-239*

The student will have the opportunity to refine skills in scanning. Interpretation of the presenting clinical signs and symptoms will be one of the objectives for this clinical course. Accuracy in recognizing anatomical variations and pathology, completing the examination in a timely manner and presenting the findings to the interpreting physician will be the main objective for this clinical rotation. The student will continue to perform portable examinations and assist the physician and clinical instructor in any special procedures. (Three full-time days per week.)

DMS-239 Abdominal/OB-GYN/Cardiac Ultrasound
4 credits/3 lecture & 2 lab hours
Prerequisites: *DMS-207*, *DMS-210* & *DMS-235*
Corequisite: *DMS-237*

The course is for the ultrasound student specializing in Vascular ultrasound and is designed to offer the student basic knowledge and understanding of Abdominal/OB/GYN and Cardiac ultrasound. Scanning techniques will also be covered. Relevant histologic aspects of various pathological conditions will be discussed and correlated with their acoustical properties and sonographic characteristics. Clinical features and laboratory data of pertinent diseases will be presented.

DMS-292 Vascular Physics and Instrumentation
3 credits/3 lecture hours
Prerequisite: Registered/Registry eligible sonographers,
RT currently working as a sonographer.

This course is designed to provide theory instruction in the areas of ultrasound instrumentation and in the areas of ultrasound instrumentation and quality control. Initially, the student will be provided with information pertinent to the function of various components of the ultrasound system and their integration into an ultrasound unit. Modes of operation, signal processing, scan converter displays, image and display techniques, methods of permanent image recording and ultrasound transducers are some of the topics which will be discussed. Technical information and practical instruction to promote an understanding of the use of technical controls and their effect on image quality will be provided. Ultrasound physics and its proper application toward vascular hemodynamic evaluation of the human body will be presented.

Developmental Studies (DVS)

DVS-060 College Academic Strategies
2 credits/2 class hours
Prerequisite: Reading placement test
Corequisite: *DVS-070*

This course helps students acquire strategies essential for college study including taking classroom notes, developing time management skills, preparing for tests, organizing a notebook and developing communication skills. In addition, students learn basic research skills.

Students must earn a C grade or better to register for the next course in this discipline or to use this course as a prerequisite for a course in another discipline.

DVS-070 College Reading 1
4 credits/4 class hours
Prerequisite: Reading placement test
Corequisite: *DVS-060*

This course provides instruction in basic comprehension and vocabulary skills. Students develop awareness of themselves as readers by employing metacognitive strategies. Additionally, students learn to identify and utilize organizational patterns and apply critical reading skills in making judgments about texts. *DVS-070* will normally be followed by *DVS-101* unless the student's progress has been so accelerated in *DVS-070* that the department advises against a subsequent course.

Students must earn a C grade or better to register for the next course in this discipline or to use this course as a prerequisite for a course in another discipline.

DVS-101 College Reading 2
3 credits/3 class hours
Prerequisite: *DVS-070*

This course emphasizes the application of study and reading strategies that are initially presented in College Reading 1. Students are required to apply study and reading strategies in understanding textbook and supplementary readings. They are also taught the significance of experiential background for reading comprehension and the importance of identifying and responding to the author's purpose for writing. Students are encouraged to see reading, writing, and studying as interconnected, interactive processes

Students must earn a C grade or better to register for the next course in this discipline or to use this course as a prerequisite for a course in another discipline.

DVS-103 Advanced College Reading and Study Skills
3 credits/3 class hours
Prerequisite: Reading placement test

This course develops the specific college reading skills and learning strategies which will enable the student to read academic texts efficiently, effectively and independently. The course emphasis is on the transfer and practical application of comprehension, critical thinking, vocabulary, and study skills to college-level text material.

Students must earn a C grade or better to register for the next course in this discipline or to use this course as a prerequisite for a course in another discipline.

Early Education & Child Development (ECD)

ECD-101 Introduction to Early Education and Child Development
3 credits/3 lecture hours

This course provides the student with an introduction to the history and trends in early education and child development. Students will explore career options, professional expectations and techniques for teaching, working and interacting with diverse populations of children and their families. A weekly field observation in early childhood programs, schools, agencies or therapeutic setting is required. Students must have three current clearances: FBI Fingerprint Clearance, a Pennsylvania State Police Criminal History Clearance and a Pennsylvania Department of Public Welfare Child Abuse History Clearance and meet the local requirements of the field placement site.

ECD-103 Infant and Toddler Development
3 credits/3 lecture hours

This course is an overview of physical, cognitive, emotional and social development from conception through toddlerhood. A range of theoretical viewpoints, research findings and practical issues will be considered in attempting to understand this period of development. The dynamic nature of development and the uniqueness of each individual and families with infants and toddlers will be emphasized. Professionalism in working with diverse infants, toddlers and their families will be examined.

ECD-104 Preschool Development

3 credits/3 lecture hours

This course is an overview of physical, cognitive, emotional and social development during the preschool years, ages 3–6. A range of theoretical viewpoints, research findings and practical issues will be considered in attempting to understand this period of development. The dynamic nature of development and the uniqueness of each individual preschool aged child and the family with preschool aged children will be emphasized. Professional standards for working with preschool aged children and their families will be stressed.

ECD-105 Early Childhood Development: Birth to Age 6

3 credits/3 lecture hours

This course is an overview of physical, cognitive, emotional and social development in children, from birth to age six. A range of theoretical viewpoints, research findings and practical issues will be considered in examining this period of development. The dynamic nature of development and the unique characteristics of each developing child and family with young children will be emphasized. Professional standards for working with infants, toddlers and preschool aged children and their families will be stressed. A weekly field observation in early childhood programs, schools, agencies or therapeutic settings is required. Students must have three current clearances: FBI Fingerprint Clearance, a Pennsylvania State Police Criminal History Clearance and a Pennsylvania Department of Public Welfare Child Abuse History Clearance and meet the local requirements of the field placement site.

ECD-107 Health and Safety of Children

3 credits/3 lecture hours

This course is an introduction to promoting children's health, safety, nutrition and physical development through informed practice. Childhood illnesses and their care, Basic Life Support (BSL), first aid training and strategies for ensuring children's health and safety in an early childhood setting are discussed. Nutrition and exercise needs of children birth to age 9 and movement activities that facilitate coordination and lay the foundation for later academic success are examined. A weekly field observation in early childhood programs, schools, agencies or therapeutic setting is required. Students must have three current clearances: FBI Fingerprint Clearance, a Pennsylvania State Police Criminal History Clearance and a Pennsylvania Department of Public Welfare Child Abuse History Clearance and meet the local requirements of the field placement site.

ECD-113 Middle Childhood and Adolescent Development

3 credits/3 lecture hours

This course provides an overview of physical, cognitive, emotional and social development from middle childhood through adolescence, ages 7 to early adulthood. A range of theoretical viewpoints, research findings and practical issues will be considered in examining this period of development. The dynamic nature of development and the uniqueness of each individual child and the family with middle childhood aged children and/or adolescents will be emphasized. Professional standards for working with 7 year olds to young adults and their families will be stressed. A weekly field observation in early childhood programs, schools, agencies or therapeutic setting is required. Students must have three current clearances: FBI Fingerprint Clearance, a Pennsylvania State Police Criminal History Clearance, and a Pennsylvania Department of Public Welfare Child Abuse History Clearance and meet the local requirements of the field placement site.

ECD-130 Practicum: Infant and Toddler

3 credits/1 lecture & 6 practicum hours

Corequisite: *ECD-103*

This course provides direct experience with children through supervised field placement in an early childhood setting. Students will develop and apply skills in observation, interaction, empathy and acting in a professional manner. Students meet in a weekly seminar in addition to a six-hour per week field placement where they interact with children, professionals in the field and often parents. Students must be eligible for clearances from the Pennsylvania State Police Criminal History Check and the Pennsylvania Department of Public Welfare Child Abuse History Check. In addition they may be required to verify that they meet the standards required by the practicum agencies.

ECD-135 Practicum: Observation and Assessment

3 credits/2 lecture & 3 practicum hours

Prerequisite: *ECD-101*

This course examines effective methods for observing, assessing and documenting young children's behavior for the purpose of planning developmentally appropriate curriculum, activities, environments and interactions. Students will meet in a weekly seminar and obtain direct experience in observing and assessing children through a 45-hour supervised field experience in an early childhood setting, school, agency or therapeutic setting. Students must have three current clearances: FBI Fingerprint Clearance, a Pennsylvania State Police Criminal History Clearance and a Pennsylvania Department of Public Welfare Child Abuse History Clearance and meet the local requirements of the field placement site.

ECD-202 Children With Special Needs

3 credits/3 lecture hours

This course is for students seeking an understanding of children with special needs. Special education past, present and future is examined. Included are topics related to working with children with sensory, behavioral, physical, language, cognitive and learning differences. This content covers definitions, classifications, causes, incidence, approaches to treatment, social implications, attitudes, diversity, perceptions and professionalism. A weekly field observation in early childhood programs, schools, agencies or therapeutic setting is required. Students must have three current clearances: FBI Fingerprint Clearance, a Pennsylvania State Police Criminal History Clearance and a Pennsylvania Department of Public Welfare Child Abuse History Clearance and meet the local requirements of the field placement site.

ECD-210 Clinical Skills With Children

3 credits/3 lecture hours

Prerequisite: *ECD-202* or permission of instructor

This course prepares students to work with children and adolescents who have special needs in school, recreation, or therapeutic environments using accepted techniques and practices. Topics include therapeutic perspectives, discipline and control issues and techniques, behavioral techniques including behavior modification and forms of intervention. Students will also explore strategies in working with groups, including group planning and group dynamics, the use of games and activities for therapy and assessment, collaboration with family and other professionals and clinical observation skills. A weekly field observation in early childhood programs, schools, agencies or therapeutic setting is required. Students must have three current clearances: FBI Fingerprint Clearance, a Pennsylvania State Police Criminal History Clearance and a Pennsylvania Department of Public Welfare Child Abuse History Clearance and meet the local requirements of the field placement site.

ECD-211 Family Systems

3 credits/3 lecture hours

This course provides a study of family relations in our society. Emphasis is on family values and expectations, as well as other social issues and how they influence the growth and development of the child. Included are issues of professionalism in dealing with diverse families, poverty, families in crisis, divorce, working parents, single parenting, ethnic, cultural and lifestyle differences, illness and death and the role of siblings and other relatives.

ECD-212 Language, Literacy and Literature in Early Childhood

3 credits/3 lecture hours

Prerequisite: *ECD-101*

This course will provide an overview of language and literacy development in young children (birth to age nine). The relationship between oral and written language will be investigated. Students will examine and evaluate a wide variety of quality literature that can be used to facilitate children's emerging language and literacy skills. Developmentally appropriate strategies for addressing the PA Early Learning Standards for language and literacy, the role of teachers and parents in promoting communication and early literacy and in creating print-rich environments will be explored. A weekly field observation in early childhood programs, schools, agencies or therapeutic setting is required. Students must have three current clearances: FBI Fingerprint Clearance, a Pennsylvania State Police Criminal History clearance and a Pennsylvania Department of Public Welfare Child Abuse History clearance and meet the local requirements of the field placement site.

ECD-214 Curriculum for the Early Childhood Classroom

3 credits/3 lecture hours

Prerequisite: *ECD-101* or permission of instructor

This course examines strategies and methods for preparing integrated curricula that facilitate learning and provide meaningful connections for young children. Students examine early childhood curriculum models and utilize the PA Early Learning Standards to plan, create and assess developmentally appropriate environments and experiences that include children of various ages, cultures and abilities. Using play, literacy and the arts as a foundation, emergent studies in mathematics, social studies, science and computers in the classroom are explored. A weekly field observation in early childhood programs, schools, agencies or therapeutic setting is required. Students must have three current clearances: FBI Fingerprint Clearance, a Pennsylvania State Police Criminal History Clearance and a Pennsylvania Department of Public Welfare Child Abuse History Clearance and meet the local requirements of the field placement site.

ECD-218 Child Care Management and Administration

3 credits/3 lecture hours

This course is for students who are interested in the day-to-day operation of managing a facility for young children. Students will examine how to develop, organize, staff, maintain, fund and evaluate quality child care programs and classrooms. Topics also include styles of management, supervision, diversity, developing interpersonal relationships with staff, planning and leading staff meetings, promoting positive staff relationships and professional development. A weekly field observation in early childhood programs, schools, agencies or therapeutic setting is required. Students must have three current clearances: FBI Fingerprint Clearance, a Pennsylvania State Police Criminal History Clearance and a Pennsylvania Department of Public Welfare Child Abuse History Clearance and meet the local requirements of the field placement site.

ECD-240 Practicum: Pre-K-4

3 credits/1 lecture & 6 practicum hours

Prerequisites: *ECD-101* & *ECD-135*

This course provides direct experience with children aged birth to 9 years in a supervised early childhood program, school or therapeutic setting. Students record observations, plan and implement age-appropriate activities and refine professional skills. Students meet in a weekly seminar in addition to an eight hour per week field placement where they interact with children, professionals in the field and parents. Students must have three current clearances: FBI Fingerprint clearance, a Pennsylvania State Police Criminal History Clearance and a Pennsylvania Department of Public Welfare Child Abuse History Clearance and meet the local requirements of the field placement site.

Economics (ECO)**ECO-102 Principles of Macroeconomics**

3 credits/3 class hours



This course is an introduction to the economic activity of the nation, introducing basic concepts and institutions. Emphasis is on aggregate income and spending, the government fiscal and monetary policy, national income accounting, economic growth and comparative economic systems.

ECO-103 Principles of Microeconomics

3 credits/3 class hours



The course is an introduction to the activities of individual economic units, such as industries, companies, households and consumers. The course emphasis is on markets, the price system and the allocation of resources as they affect the consumer, the producer and the economy.

Electrical Construction Technology (ECT)**ECT-101 Electrical Construction Technology 1**

8 credits/4 class & 4 lab hours

Prerequisite: Acceptance into the ECT Program

This course presents an understanding of the International Brotherhood of Electrical Workers (IBEW), National Electrical Contractors Association (NECA) and the National Joint Apprenticeship Training Committee (NJATC) as they exist on a national and local level and the history of the labor movement. The course presents basic scientific information about the nature of matter as it relates to understanding electrical theory and principles by which all electrical devices operate. Students will be introduced to the structures, elements, functions and characteristics of DC circuit and workplace safety, as well as mathematical equations/computations and basic blueprint reading on a residential level. A separate laboratory experience will provide the student with opportunities to apply and work with concepts learned in the classroom setting.

ECT-151 Electrical Construction Technology 2

8 credits/4 class & 4 lab hours

Prerequisite: *ECT-101*

This course introduces the apprentice to the study of the National Electrical Code (NEC) that provides the rules, regulations and provisions that govern a "Safe Installation" for the electrical industry. Further, the course presents scientific information about the nature of electrical theory as it pertains to AC theory. Building on the principles of residential blueprint reading, this course teaches the necessary concepts to properly design and lay out circuits from basic to more elaborate conduit bending for residential and commercial projects. Building on the history of the International Brotherhood of Electrical Workers (IBEW), National Electrical Contractors Association (NECA) and the National Joint Apprenticeship Committee (NJATC), this course discusses parliamentary procedures and the Construction Organizing Membership Education Training Program (COMET). A separate laboratory experience will provide the student with the opportunity to apply and work with concepts learned in the classroom setting.

ECT-201 Advanced Electrical Construction Technology 1

8 credits/4 class & 4 lab hours

Prerequisite: *ECT-151*

This course involves solving complex problems through Kirchhoff's Laws and Thevenin and Norton's theorems. Design, construction, operating characteristics and application of electrical devices such as the semiconductor and zener diode are also presented. Building on previously discussed National Electrical Code (NEC) topics, grounding is discussed in its entirety, along with residential and commercial blueprint reading, with an emphasis on commercial blueprint reading. Information on the characteristics of AC/DC motors and their control devices is also presented. A separate laboratory experience will provide the student with opportunities to apply and work with concepts learned in the classroom setting.

ECT-251 Advanced Electrical Construction Technology 2

8 credits/4 class & 4 lab hours

Prerequisite: *ECT-201*

This course presents information necessary to the understanding of digital electronics. The course explores the use of Boolean Algebra as one of the field's basic tools and includes a discussion exploring some of the characteristics of various families of logic circuits, including buffer and inverter logic circuits. Key terms and definitions are reviewed. Power requirements, speed of operations and noise immunity and limits are examined. The types of decision-making logic elements of digital electronic conditions will be verified using procedures performed as part of the course. The course also explores the operational characteristics of NAND, NOR, XOR and XNOR logic gates. The development of logic circuits and controls, switching circuits and fiber optic theory and installation will also be presented. A separate laboratory experience will provide the student with opportunities to apply and work with concepts learned in the classroom.

ECT-291 Instrumentation and Testing for Electrical Construction Technology

8 credits/4 class & 4 lab hours

Prerequisite: *ECT-251*

Building on basic principles learned in previous years of the apprenticeship, this course instructs students on how proportional control systems can be modified to give better control in a critical process. The course includes information on various types of sensors used in process control, safety factors, installation, testing instruments and tests for measuring dielectric quality, locating and testing faults. Students will be presented with information on telephone and alarm systems, security systems, system installations and start-up. A separate laboratory experience will provide the students with opportunities for practical application of concepts learned in the classroom

ECT-295 Journeyman Transition

8 credits/4 class & 4 lab hours

Prerequisite: Inside Journeyman Wireman (IBEW/NJATC) Program

This course is designed for the Inside Journeyman Wireman who has successfully completed an (International Brotherhood of Electrical Workers/National Joint Apprenticeship Training Committee (IBEW/NJATC) approved Journey Wireman Apprenticeship Program. It provides theoretical knowledge and practical experience in the major components of Teledata 1, Teledata 2 and Teledata 3. Information on workplace safety will be featured. A separate laboratory experience will provide the student with opportunities to apply and work with concepts learned in the classroom setting. Successful completion of this course will result in the awarding of advanced standing for *ECT-101*, *ECT-151*, *ECT-201*, *ECT-251* and *ECT-291*.

Engineering Drafting & Design (EDD)**EDD-100 Blueprint Reading**

3 credits/3 lecture hours

This course is a survey of engineering practices, problems, specifications and drawings. Emphasis is placed on the reading of blueprints. Other topics include quantity take-offs of areas and volumes of excavation, volume of reinforced concrete, surface area of concrete form work, mechanical and electrical problems, types of structures, structural shapes and connections.

EDD-101 Engineering Drawing 1

3 credits/2 lecture & 2 lab hours

This is a course in basic drafting techniques used to produce engineering drawings. Conventional drafting and dimensioning practices as outlined by the National Occupational Skill Standards, ANSI and ISO will be used to produce orthographic drawings, pictorial drawings, auxiliary views and section drawings. Technical drawings will be completed using freehand sketching techniques, conventional drawing tools and CAD.

EDD-102 Engineering Drawing 2

3 credits/2 lecture & 2 lab hours

Prerequisite: *EDD-101*

This course is designed to provide a graphical means of solving problems involving true measurements, linear or angular and the solution of spatial relationships of point, lines and planes by means of projection. The course begins with a review of single and multiple auxiliary views and continues with the four basic constructions of descriptive geometry. Emphasis will be placed on complex intersections and surface developments to generate 2D and 3D computer generated surface models.

EDD-120 Introduction to Computer-aided Drafting

4 credits/3 lecture & 2 lab hours

This is a beginning course in computer-aided drafting fundamentals. The student will be introduced to the concepts and techniques used by drafters and designers to create and modify computer generated drawings. Students will learn the commands and functions necessary to input, process and output working drawings to printers and plotters.

EDD-121 Computer-assisted Drafting Applications

4 credits/3 lecture & 2 lab hours

Prerequisite: *EDD-120*

This course is a continuation of the study of computer generated graphics. Students will develop advanced skills in computer based drawing. Students create working drawings for engineering applications. These drawings include orthographic projection concepts, section views, tolerancing and dimensioning, notes, schedules and symbols lists. Drawings will be created using the college's computer graphics system and AutoCAD software.

EDD-135 Introduction to Parametric Modeling

3 credits/2 lecture & 2 lab hours

This course is an introduction to the development of three-dimensional engineering design models using a feature based modeling environment. The techniques of constructing, editing and annotating feature based parametric models will be presented. The application of design variables to parametric features will be used to automate the design and revision process. Projects in the development and presentation of computer generated parametric models using AutoDesk Inventor software will be completed in the engineering graphics and analysis laboratory.

EDD-141 Structural Drafting

3 credits/2 lecture & 2 lab hours

Prerequisite: *EDD-121*

This course emphasizes design drawing and detailing of steel structures. Topics include columns and base plates, beams, structural arrangement drawings and connection details and shop drawings using CAD. Both bolted and welded connections are designed and detailed using AISC standards.

EDD-150 Introduction to Architectural Modeling

3 credits/2 lecture & 2 lab hours

This course is an introduction to the development of computer aided 3-dimensional architectural models using a feature based modeling environment. The techniques of constructing, editing and annotating feature based parametric models will be presented. Projects in the development and presentation of computer generated parametric models using state-of-the-art modeling software such as AutoDesk REVIT will be completed in the Engineering Graphics and Analysis laboratory. Emphasis is on developing basic parametric skills in residential architectural design and drawings. Topics include: drawing lines and shapes, editing tools, sketching capabilities, setting up projects, creating floor plans, roof designs, room layouts, wall and ceiling design, electrical and lighting design, creating parametric elevations, creating schedules and creating construction documentation sets.

EDD-221 Parametric Modeling 2

3 credits/2 lecture & 2 lab hours
Prerequisite: *EDD-135*

This is an advanced course in the development of three-dimensional engineering design models using AutoDesk Inventor feature based modeling software. Students will construct part models using advanced modeling tools. The creation of part models will be used to produce fully annotated detail drawings and assembly drawings, assembly models and animated presentation assemblies. The application of design variables to parametric features will be used to automate the design and revision process.

EDD-222 Customizing the CAD Environment

3 credits/2 lecture & 2 lab hours
Prerequisites: *EDD-120* & *SET-105*

This is an advanced course presenting techniques for operation, programming and management of computer-aided drafting environments. Topics include menu creation and modification, software modification and creation of macros, library creation and file management. Emphasis is on creation of a customized environment for efficient use in specific engineering areas such as electrical, architectural and mechanical fields.

EDD-230 Architectural Drafting

4 credits/3 lecture & 2 lab hours
Prerequisite: *EDD-121*

This is an advanced course in the application of engineering drawing principles to the field of architecture. The creation of working drawings is stressed. Included are site plans, floor plans, foundations, elevations, sections and details and preparation of presentation drawings. Emphasis is on development of skills, speed and adherence to recommended AIA architectural standards.

EDD-240 Mechanical Drafting

4 credits/3 lecture & 2 lab hours
Prerequisite: *EDD-121*

Mechanical drawing is an advanced course in the application of engineering drawing principles to mechanical engineering technology. Emphasized is the preparation of working drawings including such items as assembly drawings, detail drawings, fasteners, gears and cams. Additional topics are presented based on specific drawing applications assigned.

EDD-245 Advanced Engineering Drawing

4 credits/3 lecture & 2 lab hours
Prerequisite: *EDD-230* or *EDD-240*

This is a project-oriented course applying the drawing concepts and techniques of previous course work to practical problems. Development of a portfolio of drawings appropriate to the student's field of interest is emphasized. Included is the application of computers to the engineering environment with topics such as computer-aided drafting, design and manufacturing. The learning outcomes for this course are consistent with the requirements outlined in the National Occupational Skill Standards (NOSS), the American National Standards Institute (ANSI), the American Institute of Architects (AIA) and the International Organization for Standardization (ISO).

Electrical Distribution (EDT)**EDT-103 Overhead Lineworker Maintenance 1**

5 credits/2 lecture & 3 lab hours
Corequisite: *EDT-107*

This course will provide an overview of electrical transmission and distribution systems. The course focuses on the recognition, safe application and care of necessary tools and equipment. Students gain knowledge necessary to pass the commercial driver's license permit test.

EDT-105 Overhead Lineworker Maintenance 2

5 credits/2 lecture & 9 lab hours
Prerequisite: *EDT-103*

This course will provide the knowledge and skills required to properly install three phase primary and secondary conductors. Students will learn the proper installation of overhead and underground residential service lines.

EDT-107 Compliance and Safety Training

3 credits/3 lecture hours
Corequisite: *EDT-103*

This course will provide essential knowledge of federal and state regulations as they relate to work in the electric utility industry. Areas covered will include personal protective equipment, rescue procedures, work area setup, flagging and proper environmental practices.

EDT-109 Basic Electricity

3 credits/2 lecture & 2 lab hours

This course is a study of direct current (DC) and alternating current (AC) in electrical fundamental concepts and circuit analysis. Topics include voltage, current, resistance, impedance, Ohm's law, power, circuit reduction, Kirchoff's network analysis methods, network theorems, capacitors, inductors, transients and sine wave characteristics.

EDT-203 Overhead Lineworker Maintenance 3

4 credits/1 lecture & 9 lab hours
Prerequisite: *EDT-105*

This course will provide students with the knowledge and specialized skills necessary to troubleshoot and repair electrical transmission and distribution systems. Skills development will focus on proper pulling, tensioning and installation of electrical cables.

EDT-204 Underground System Maintenance

3 credits/1 lecture & 6 lab hours
Prerequisites: *EDT-103* & *EDT-105*

This course will familiarize the student with the underground network system and the function of the low- and high tension electrical equipment found within the system. Specific topics will include print reading, enclosed space safety procedures, identification of tools and basic work procedures.

EDT-205 Basic Substation Maintenance

3 credits/1 lecture & 6 lab hours
Prerequisites: *EDT-103* & *EDT-105*

This course will familiarize the student with the function of low- and high-tension electrical equipment found in an electrical substation. Specific topics of study will include print reading, proper names, safety procedures, basic maintenance tasks, basic construction tasks, test procedures and the operation of testing equipment, as well as high-tension switching and clearance procedures.

EDT-206 Meter Training

3 credits/3 lecture hours

This course provides insight to the various types of residential and commercial revenue meters, both single phase and 3 phases. It also identifies safe installation, removal and troubleshooting practices associated with revenue metering.

EDT-207 AC Power

3 credits/2 lecture & 2 lab hours
Prerequisite: *EDT-109*

This course is a study of the effects of inductance and capacitance in series and parallel circuits. Students will learn single phase and three phase alternating current (AC) power characteristics. Topics include single phase and three phase transformer operation, phase to phase and phase to neutral voltage, current and power factor.

EDT-220 Summer Internship

3 credits/9 practicum hours

Prerequisites: *EDT-103 & EDT-105*

This internship is the last phase of the Overhead Lineworker Technology Program. The internship will provide an opportunity for “hands on” experience with all the skills and knowledge gained in the courses of the program.

Education (EDU)**EDU-115 Introduction to PRAXIS 1**

1 credit/1 class hour

This course is an overview of the PRAXIS 1 examination for elementary and secondary education majors and required for teacher certification in Pennsylvania. The course focuses on preparation in the areas of reading, writing and mathematics for students who plan to take this pre-professional skills test. It includes test taking strategies.

EDU-125 Foundations of Middle Level and Secondary Education

3 credits/3 lecture hours

This course provides an introduction to middle level and secondary education including a study of current and past educational practices, historical changes and philosophies of education. Educational beliefs and elements of the teaching profession specific to grades 4–12, as well as the role of education in culture and society are examined. Objectives and methods of middle and secondary school education are also discussed. Ten hours of field experience throughout the semester are required. Students must have three current clearances: FBI Fingerprint Clearance, a Pennsylvania State Police Criminal History clearance and a Pennsylvania Department of Public Welfare Child Abuse History clearance and meet the local requirements of the field placement.

EDU-130 Behavioral Management in the Classroom

1 credit/1 class hour

This course for classroom teachers and aides offers strategies for managing student behavior in the classroom setting. Approaches to preparation, organization and student engagement are examined as ways to avoid problems in the classroom. Also discussed are research-based strategies and practical techniques to use if problems do occur.

EDU-131 Collaborating to Create a Learner-centered Classroom

1 credit/1 class hour

This course will provide teachers and classroom aides with a better understanding of setting up the classroom, documenting student progress, reinforcing and enhancing learning and making modifications and accommodations in the general classroom.

EDU-132 Bully Prevention in Schools

1 credit/1 class hour

This course focuses on creating a classroom climate in which all students feel safe. Topics include a review of the research on the causes and effects of bullying, direct and indirect bullying, and best practices and strategies for meeting the underlying needs of bullies and victims.

EDU-139 Physical Restraints and Other Non-violent Forms of Intervention

1 credit/1 class hour

This course offers classroom teachers and aides an overview of the hierarchy of interventions that may be used with students exhibiting disruptive behavior. Various models of physical restraint, as well as when and how these are appropriately employed, will also be addressed. Local laws and school policies pertaining to the use of physical restraint will be discussed.

EDU-140 Teaching Children With Behavioral Disorders in a Regular Educational Setting

1 credit/1 class hour

This course provides the classroom teacher with information and strategies for teaching students who exhibit behavioral problems associated with attention deficit/hyperactive disorder, oppositional defiant disorder, conduct disorders, social maladjustment and behavioral problems associated with emotional disorders. These students often do not meet Pennsylvania standards for specially designed instruction and thus provide the regular education teacher with unique challenges. The course addresses specific educational and behavioral techniques which increase chances for student success in the regular classroom.

EDU-141 Diverse Learners

1 credit/1 class hour

This course is designed for teachers and others who work with diverse populations in educational systems. The course will focus on a wide range of diversity including language, culture, socioeconomic status, learning styles and exceptionalities. Practical examples of differentiated and adaptive instruction will be presented for use in the classroom. The course will also explore the ways diversity can influence student learning.

EDU-142 Understanding Emotional Intelligence

1 credit/1 class hour

This course focuses on the basics of helping students develop pertinent skills regarding Emotional Intelligence (EQ). Traditional IQ testing is not the best indicator of who will be successful in life. Rather, EQ has been shown to have a high correlation with future achievement. Students will recognize and develop relevant skills pertaining to EQ. Students must learn to be optimistic, delay gratification, control anger, read social situations accurately and show empathy, which are skills that can be taught in a classroom setting.

EDU-143 Working With Multiple Intelligence

1 credit/1 class hour

This course will address the concept of Multiple Intelligence. Traditional learning stresses the development of verbal and problem-solving skills. Research has routinely shown that many students would benefit from a broader approach to education. This course will focus on ways to develop the proposed eight domains of intelligence: verbal/linguistic, visual/spatial, bodily/kinesthetic, logical/mathematical, intrapersonal, interpersonal, musical/rhythmic and naturalistic.

EDU-148 Educators' Role in Workforce Development

1 credit/1 class hour

This course provides an overview of the changing aspects of workforce development and the role of educators in preparing the emerging workforce. Strategies for integrating career development into the curriculum will be presented. Participants will discuss “promising practices” and participate in the development of activities to introduce students to the workforce. The course will have components of interest for all educators: teachers, counselors, librarians, administrators and others.

EDU-155 Humor in the Classroom

1 credit/1 class hour

This course explores the use of humor as a method of creating an environment conducive to learning in a classroom or in other situations where growth and learning are the expected outcomes.

EDU-201 Foundations of Education

3 credits/3 class hours

This course is an introduction to the field of education including a study of current and past educational practices, historical changes and the philosophies of education. Also covered is the relationship of educational beliefs to the role of education in the culture, the democratic ideal, the teacher and the teaching profession. Objectives and methods used in schools are also discussed.

EDU-202 Educational and Assistive Technology

3 credits/3 class hours

Prerequisite: One of the following: *ECD-101, EDU-125, EDU-201* or permission of instructor

This course is for students planning careers in education. Students will examine how to use technology to assist diverse learners to meet designated learning outcomes. The students will learn to prepare and integrate a wide range of multimedia technologies as they develop standards-based instructional units. Students will implement techniques for technology integration that address varied classroom populations. Ten hours of field experience are required throughout the semester. Students must have three current clearances: the FBI Fingerprint Clearance, a Pennsylvania State Police Criminal History Clearance and a Pennsylvania Department of Public Welfare Child Abuse History Clearance and must meet the local requirements of the field placement.

EDU-203 Current Issues in Education

3 credits/3 class hours

Prerequisite: *EDU-201* or IUP's *EL 351*

This course is a study of the issues affecting contemporary public education. Issues studied reflect the broad questions: What are the purposes of education? Who shall be educated? What shall be taught? How shall the curriculum be implemented? Who shall decide? How shall education be financed?

EDU-204 Field Experience in Education

3 credits/2 lecture & 3 lab hours

Prerequisite: *EDU-201* or IUP's *EL351*

This course provides direct experience with children through supervised field placement in an elementary or secondary school setting. Students will develop and apply skills in observation, interaction and professional behavior. Students meet in a weekly seminar in addition to a minimum of 45 hours of observation per semester in a school or other relevant educational setting. Students must have three current clearances: FBI Fingerprint Clearance, a Pennsylvania State Police Criminal History clearance and a Pennsylvania Department of Public Welfare Child Abuse History clearance and meet the local requirements of the schools.

EDU-205 English Language Learners in the Classroom

3 credits/3 lecture hours

Prerequisite: One of the following: *ECD-101, EDU-125, EDU-201* or permission of instructor

This course explores the role of the classroom teacher in meeting the academic needs of linguistically and culturally diverse learners. Topics include an introduction to language acquisition theory, cultural communication and learning styles, the roles of culture in academic achievement and cultural and linguistic bias in instructional strategies, materials and assessment. Ten hours of field experience are required throughout the semester. Students must have three current clearances: FBI Fingerprint Clearance, a Pennsylvania State Police Criminal History clearance and a Pennsylvania Department of Public Welfare Child Abuse History clearance and meet the local requirements of the field placement.

Electrical & Electronic Engineering Technology (EET)**EET-103 Introduction to Electronics**

3 credits/2 lecture & 2 lab hours

Prerequisite: One year of High School Algebra or equivalent with a C or better

This course covers the basic principles of electronics, with a survey of modern electronics, Ohm's Law and power formulas, series/parallel circuits, Kirchhoff's Law, operational amplifiers, timers and selected circuit elements. Theory is applied to laboratory work with a concentration on construction and testing of actual circuits and the use of modern measurement techniques. No previous experience in electronics or science is required.

EET-130 Introduction to Telecommunications

4 credits/3 lecture & 2 lab hours

Prerequisite: *EET-103*

This course provides an overview of basic principles of electronic circuits and their applications to telecommunications. Topics include amplifier circuits and analysis, audio circuits, tuned Radio Frequency (RF) amplifiers, oscillator circuits, receiver circuits and AM and FM modulation. Microwave and satellite communications are introduced.

EET-179 Electrical Power Distribution

3 credits/2 lecture & 2 lab hours

Prerequisite: *EET-103*

This course covers industrial wiring techniques, standards and applications as per the National Electrical code. Students will learn electrical print reading and translation to the necessary wiring panels. Techniques of wiring electrical panels and terminals with proper color coding and labeling methods are covered. Laboratory time will offer the opportunity to practice these and other skills of electrical maintenance.

EET-201 Electronics 1

4 credits/3 lecture & 2 lab hours

Prerequisite: *EET-103*

This course delineates the principles and use of discrete electronic devices such as bipolar and field effect transistors, triac and silicon controlled rectifiers. Students will apply these devices to basic circuits such as small signal and power amplifiers and power control systems.

EET-202 Electronics 2

4 credits/3 lecture & 2 lab hours

Prerequisite: *EET-201*

This course is a continuing study of Electronics 1 and its applications. Emphasis will be on power amplifiers, differential amplifiers, junction gate field-effect transistors (JFETs), metal oxide-semiconductor field-effect transistors (MOSFETs) and thyristors. Detailed analysis of linear op-amp circuits and their applications will be presented. Popular linear integrated circuits (IC) and timers will be covered.

EET-213 Electronic Instruments

4 credits/3 lecture & 2 lab hours

This course is a study of instrumentation for the measurement of current, voltage, power and impedance. Q capacitance and inductance at low and frequencies will also be studied.

EET-240 Electrical Power and Motors

4 credits/3 lecture & 2 lab hours

Prerequisite: *MIT-210* or equivalent

This course delineates the application of electrical theory and use of electrical machinery and equipment. Direct current motors and generators and alternating current machinery such as transformers, single-phase motors, polyphase and induction motors are studied. Typical motor control devices such as diode for alternating current (DIAC), triode for alternating current (TRIAC) and silicon control rectifiers are covered.

EET-245 Electric Motor Control

3 credits/2 lecture & 2 lab hours

Prerequisite: *EET-103*

This course covers the wiring of AC and DC motors for industrial power. Application and troubleshooting of starting circuits, overload protection circuits and emergency stop circuits, including with maintenance and repair, will be covered. The use of test instruments, such as digital multimeters, will be presented. Laboratory work will emphasize skill building in wiring industrial scaled circuits.

Engineering Science (EGR)

EGR-100 Engineering Seminar

1 credit/1 class hour

This course prepares students for careers in engineering and technology. The course assists students in becoming acquainted with methods for solving practical engineering problems. Film and guest lecturers are utilized to describe the character of the work of graduate engineers in each of several engineering professions.

EGR-110 Engineering Surveying

4 credits/3 lecture & 2 lab hours
Corequisite: MAT-114 or previous knowledge of trigonometry

This course is a study of topographic surveying and mapping. Topics include construction surveys and layout, boundary surveys, determination of land areas, methods of collecting and recording data, field and office computations, control surveys, topographic mapping, care and use of surveying equipment, GPS systems and surveying software. Emphasis will focus on topographic surveys using total stations with data collections. Field work includes use of transits, total stations, electronic distance meters, surveyors' tapes, differential levels and data collectors, horizontal measurement, leveling and angle and direction measurements.

EGR-111 Route Surveying

4 credits/3 lecture & 2 lab hours
Prerequisite: EGR-110

This course covers the principal topics of highway surveying including profiles, horizontal and vertical curves, mass diagrams and street layout. Emphasis is on the study of the geometry and field stake-out techniques of circular curves, spiral curves, compound curves, reverse curves, equal-tangent vertical curves, horizontal and vertical alignment design, earthwork quantities and mass diagrams. The student will perform both field and lab work to gather information about a general route to select one or more tentative general routes of a roadway and mark the final location.

English Writing & Literature (ENG)

Courses in developing college writing skills:

ENG-089 Basic Writing Techniques

3 credits/3 class hours
Prerequisite: English placement test

This is a course to help the student who has little writing experience to develop skills and fluency in writing and to detect, diagnose and correct error patterns in focused writings. This is the first of two courses that prepares the student for college-level writing.

Students must earn a C grade or better to register for the next course in this discipline or to use this course as a prerequisite for a course in another discipline.

ENG-095 Basic Technical Writing

3 credits/3 class hours
Prerequisite: English placement test

This is a developmental course designed for students in union-affiliated apprenticeship programs as a prerequisite to ENG-111. Students will learn and review basics of grammar, punctuation and spelling through the writing of short, focused essays, some of which will have technical elements. This course is not intended to replace the ENG-089 and ENG-100 sequence in any other program.

Students must earn a C grade or better to register for the next course in this discipline or to use this course as a prerequisite for a course in another discipline.

ENG-100 Basic Principles of Composition


3 credits/3 class hours
Prerequisite: Passing score on the English placement test or successful completion of ENG-089

This is a writing course in planning, drafting, revising and proofreading the short expository essay in preparation for college-level writing. Special attention is given to skills necessary for developing paragraphs that clarify and support a point of view. This course may serve as a general elective but not as an English or humanities elective.

Students must earn a C grade or better to register for the next course in this discipline or to use this course as a prerequisite for a course in another discipline.

ENG-101 English Composition 1


3 credits/3 class hours
Prerequisite: English placement test or ENG-100 & reading placement test or successful completion of DV/S-101 or DV/S-103.



This is a course that introduces or continues to familiarize students with critical thinking, the principles of academic writing and rudimentary research skills. Through the writing process, students refine topics; develop and support ideas; investigate, evaluate and integrate appropriate sources; edit for effective style and usage; and determine appropriate approaches for a variety of contexts, audiences and purposes.

ENG-102 English Composition 2

3 credits/3 class hours
Prerequisite: ENG-101



This is a course that further develops skills in formal research-based and argumentative writing and emphasizes the use of multi-disciplinary sources.

ENG-103 Technical Communications

3 credits/3 class hours
Prerequisite: ENG-101 or ENG-111

This is a course in the organization and writing of technical descriptions, processing instructions, articles, reports and proposals. This course applies the principles of composition, rhetoric and research to special fields, such as government, business or industry. This course may substitute for ENG-102 in specified technical programs.

ENG-105 Creative Writing

3 credits/3 class hours
Prerequisite: ENG-101

This is a course designed for beginning creative writers. The course will explore the technical devices and elements of craft in at least two of the following genres: short fiction, poetry and drama. Students will apply the elements of craft to their own writing and their classmates' writing through workshops.

ENG-111 Technical English

3 credits/3 class hours
Prerequisite: ENG-095 or score of 79 or higher on English placement test

This is a course to promote effective written technical communication. The student analyzes and synthesizes ideas in technical fields and presents them in report, article and essay form. This course relates to the student's field of study and substitutes for ENG-101 with English department approval and only in specified certificate and apprenticeship programs. Enrollment in this course is dependent on a satisfactory score on the college placement test or successful completion of the appropriate developmental courses.

Courses in understanding literature:

ENG-115 General Literature
3 credits/3 class hours
Prerequisite: *ENG-101*



This is a survey course which examines selected poetry, drama and fiction. Principles of literary criticism are introduced. This course is for students who want an overview of literary works.

ENG-117 Children's Literature
3 credits/3 class hours
Prerequisite: *ENG-101*

This is a course that introduces and surveys children's literature including poetry, picture books, fables, folktales, myths, realistic and fantastic fiction and nonfiction. A reading knowledge of representative, noteworthy children's texts and their evaluative review will be emphasized. Critical issues in children's literature will also be examined and debated.

ENG-118 Women as Writers
3 credits/3 class hours
Prerequisite: *ENG-101*

This is a course in the study of women writers' works: essays, diaries and autobiographies as well as novels, plays and poetry.

ENG-120 The Art of Film
3 credits/3 class hours
Prerequisite: *ENG-101*

This is a course that introduces film as a source of visual literacy, intellectual and artistic enlightenment. It offers a historical perspective while analyzing film as an art form. Films are selected for study of cinematic innovation, genre and directorial artistry.

ENG-200 Dramatic Literature
3 credits/3 class hours
Prerequisite: *ENG-102*

This is a course in the study of plays and critical commentary. Students study tragedy and comedy and the experiments in modern drama that have transformed them.

ENG-201 Poetry
3 credits/3 class hours
Prerequisite: *ENG-102*

This is a course in the study of poems of various periods and types. Emphasis is on the meaning of individual poems and the interplay of sensory images. The course will examine how social and philosophical culture dictate how poetry is written and establish what qualities make great poetry.

ENG-202 Fiction
3 credits/3 class hours
Prerequisite: *ENG-102*



This is a course in the comparative study of the short story and novel. Emphasis is on American and European literary forms.

ENG-203 English Literature to the Eighteenth Century
3 credits/3 class hours
Prerequisite: *ENG-102*

This is a survey course of English literature from the tribal traditions of the Anglo-Saxons through the medieval world and Renaissance to the neoclassical period. Included are such major writers as Chaucer, Shakespeare, Donne, Bacon, Milton, Swift and Johnson.

ENG-204 English Literature From the Eighteenth Century to the Present
3 credits/3 class hours
Prerequisite: *ENG-102*

This is a survey course of English literature from the romantic period to modern times. Included are such major writers as Blake, Wordsworth, Byron, Tennyson, Yeats, Eliot and Joyce.

ENG-205 American Literature to the Civil War
3 credits/3 class hours
Prerequisite: *ENG-102*

This is a survey course of American literature from the colonial period to the Civil War. Included are such major writers as Poe, Hawthorne, Emerson, Thoreau, Whitman and Melville. Also studied are historical, political and philosophical trends important to an understanding of the literature.

ENG-206 American Literature From the Civil War to the Present
3 credits/3 class hours
Prerequisite: *ENG-102*

This is a survey course of American literature from the Civil War to the modern period. Included are such major writers as Dickinson, Twain, James, Crane, Frost, Hemingway, Faulkner and Steinbeck. Also studied are historical, political and philosophical trends important to an understanding of the literature.

ENG-207 African American Literature
3 credits/3 class hours
Prerequisite: *ENG-102*

This is a survey of literature by African Americans from the days of slavery, through Reconstruction, the Harlem Renaissance, the Black Arts Movement, Modernism, from the beginnings of African American writings to 21st century authors. The objective of this course is to view African American literature critically, theoretically, historically and politically.

ENG-209 World Literature to 1650
3 credits/3 class hours
Prerequisite: *ENG-102*

This is a course that surveys the literature of the western and non-western world from ancient times through 1650. Also studied are historical, political and philosophical trends important to the understanding of the literature.

ENG-210 World Literature From 1650 to the Present
3 credits/3 class hours
Prerequisite: *ENG-102*

This is a course that surveys the literature of the western and non-western world from 1650 to the present. Also studied are historical, political and philosophical trends important to the understanding of the literature.

ENG-222 Shakespeare's Plays
3 credits/3 class hours
Prerequisite: *ENG-102*

This course introduces the plays of William Shakespeare. A minimum of six plays selected from the comedies, tragedies and histories are read both as works of literature and as scripts for performance. Included in the course are performances of each play and background information on Shakespearean ideas, images and stage conventions.

ENG-223 Science Fiction
3 credits/3 class hours
Prerequisite: *ENG-102*

This is a course that studies short stories and novels about science, technology or the future. The origins, development and the methods of evaluation are examined.

ENG-272 Seminar in British Theatre

3 credits/3 class hours
Prerequisite: *ENG-102*

This course provides a study of Shakespeare, Elizabethan and modern British theatre; Stratford-on-Avon; study of stage, production, theme and genre of drama.

English as a Second Language (ESL)**ESL-060 ESL—Pronunciation**

2 credits/2 class hours

This course helps students recognize and produce the sounds, stress, rhythm, intonations, contractions and reduced forms of American English. Basic sequences of pronunciation enable learners of English to speak and communicate clearly. ESL tutors are available for remedial work and additional skill development.

Students must earn a C grade or better to register for the next course in this discipline or to use this course as a prerequisite for a course in another discipline.

ESL-070 ESL—Reading

4 credits/4 class hours

This course introduces the international student to the thought patterns of American English in order to develop reading skills. Structural analysis, extracting main ideas, making inferences, scanning for organization, skimming for details, building vocabulary and recognizing and using idioms are taught.

Students must earn a C grade or better to register for the next course in this discipline or to use this course as a prerequisite for a course in another discipline.

ESL-089 ESL—American English Structure

3 credits/3 class hours

This course for non-native English speakers parallels the first-level developmental course in English (*ENG-089 Basic Writing Techniques*). Developing writing, grammar, punctuation and spelling skills produces sentence-level written English. ESL tutors are available for remedial work and additional skill development.

Students must earn a C grade or better to register for the next course in this discipline or to use this course as a prerequisite for a course in another discipline.

ESL-090 ESL—Communicating in English

3 credits/3 class hours

This course is designed to increase fluency and accuracy in communication skills through impromptu speeches, discussion and listening exercises. Students also learn to outline articles of general interest and to take notes from lectures. ESL tutors are available for remedial work and additional skill development.

Students must earn a C grade or better to register for the next course in this discipline or to use this course as a prerequisite for a course in another discipline.

ESL-100 ESL—Composition

3 credits/3 class hours

This course for non-native English speakers parallels the second-level developmental course in English (*ENG-100 Basic Principles of Composition*). Course materials help students make the transition from strings of sentences to paragraph and multiparagraph compositions. Organization, outlining, rhetoric, transitions, punctuation and individualized instruction in advanced writing are emphasized. ESL tutors are available for remedial work and additional skill development.

ESL-101 ESL—Reading 2

3 credits/3 class hours

This course is a continuation of the study of thought patterns of American English through contrastive rhetoric in order to further develop the English reading skills of the international students. Skills taught in *ESL-070* are reviewed. Students learn more advanced skills for critical reading of

college-level writing, such as studying denotation and connotation, using inferences from reading to form related ideas and recognizing the significance of rhetorical organization, including narrative, comparison/contrast and cause/effect.

Ethnic & Diversity Studies (ETH)**ETH-101 Ethnic and Diversity Studies**

3 credits/3 class hours

This introductory survey course embraces differences based on age, race, gender, religion, sexual orientation, national origin or physical or mental ability. Ethnic and Diversity Studies is the study of the social, emotional cultural and historical forces that have shaped the development of America's diverse ethnic and minority groups over the last 500 years. This course should result in an understanding of the factors that create the attitudes and behaviors in the various cultural and minority groups.

ETH-111 The Historical Development of the Black Community in Pittsburgh

3 credits/3 class hours

This course traces the development of the several African American communities in Pittsburgh. It explores the reasons for the establishment of several distinct communities. Among issues covered will be: chain migration, racial climate in Pittsburgh from the beginning of the settlement until the 1950's, the separate "colored" school system and comparisons of the various Black communities. Urban renewal's impact on the destruction of the Hill District will also be examined.

ETH-112 Understanding Violence in America

3 credits/3 class hours

This course explores the history of violence as it relates to the United States of America. It will examine the violence used against Africans, Native Americans, Latinos and the Chinese in the "settlement" of America. Periodical use of violence to achieve national goals will also be explored. Violence taught in games, movies and television will be examined, as will violence in nursery rhymes and children's stories. Particular attention will be paid to violence against ethnic groups. Alternative strategies to violence will also be explored.

ETH-113 Introduction to Black Women and Leadership

3 credits/3 class hours

This introductory course is designed to expose, connect, and equip students with an overview of Black Women in leadership positions from African descent to modern America. It will provide a basic overview of leadership definitions, theories, and concepts. Students will examine powerful Black Women who have demonstrated effective leadership in America, who made contributions that have furthered the process of social change in the African-American culture in the American society.

ETH-114 Achieving Cultural Competence

3 credits/3 class hours

This course will equip students with the tools to understand people of cultures other than their own. Students will be exposed to the aspects of culture that lead to our value systems. They will study how value systems determine behavior and can lead to unfair treatment of others. Students will learn what aspects of our lives are culturally determined. Major aspects of culture will be explored as well as how culture is transmitted, by whom, to whom; sanctions and other issues will be explored.

ETH-119 Diversity Training/Education in America

3 credits/3 class hours

This course examines the phenomenon of diversity training/education in the United States. Students will explore the perceived necessity for such training, how the training often conflicts with strongly-held personal belief systems and the advantages and disadvantages of such training. Training exercises and techniques will be explored. Students will be required, in small groups, to create and conduct their own training sessions.

ETH-121 Current Issues in Ethnic and Diversity Studies

3 credits/3 class hours

This course will explore and provide an overview concerning current issues that ethnic groups face everyday in a rapidly changing diverse society. Differences based on age, race, gender, religion, sexual orientation, national origin, or physical or mental ability will be examined. Students will learn to understand ethnicity and diversity in the context of current issues in modern America.

ETH-122 Race and Ethnic Relations in the Global Economy

3 credits/3 class hours

This course is designed for students to study race and ethnic relationships from a local, national and global perspective. Emphasis is to provide students with a brief historical overview of how ethnic groups have played a major role in shaping modern America and the world. Students will be able to explore races and ethnic relations in the United States, Mexico, Spain, South and Central America, Caribbean, Middle East, Russia, Asia and Africa. Maintenance of ethnic identity, the development of ethnic stereotypes and prejudice and the quality of ethnic relations will be examined.

ETH-123 The Politics of Race, Ethnicity and National Identity

3 credits/3 class hours

This course will explore the concepts of race, ethnicity and national identity as forces for conflict and change worldwide. The continuing conflict between minority groups and the cultural majority in the United States and the renewed concern with immigration will be examined and contrasted with selected struggles plaguing nations in the 21st century. The rise of Islamic fundamentalism, the struggle against apartheid in South Africa, the conflict between Shia and Sunni Muslims, the Palestinian struggle against Israel, the genocide in Burundi and Rwanda between the Tutsi and the Hutu and the violence between Catholics and Protestants in Northern Ireland are examples of the conflicts which will be studied in some detail.

ETH-205 Latino Cultural Studies

3 credits/3 class hours

This is a survey course designed to acquaint students with a historical development of the Latino American culture, socioeconomic experiences, cultural movements and issues in the United States. The course will focus on the rapid construction and transformation of the Latino American's identity from the 1960's onwards.

ETH-206 Asian-American Studies

3 credits/3 class hours

This course will explore the differences and similarities between the different cultures that originate from the continent of Asia. The factors that will be discussed include: cultural differences and similarities, religious differences and similarities, linguistic differences and similarities and each group's collective purpose for immigrating to America. Asian-Americans are often generalized as homogeneous, yet there are so many differences within this ethnic group.

ETH-215 African Art/Artifacts in the Cycle of Life

3 credits/3 class hours

This course examines African art/artifacts from a cultural perspective. Students will learn that these items were not meant as decoration: they are part of the secular and religious life of Africans. Students will also learn how African art led to the creation of the abstract art produced by European masters.

ETH-220 History of the Pittsburgh Civil Rights Movement

3 credits/3 class hours

This course examines the civil rights movement in Pittsburgh. It starts with a brief overview of racial conditions in the United States, with special emphasis on Pittsburgh. The groups that participated in the movement will be discussed as will the individuals involved in seeking racial equality. Students will also learn about the government agencies and businesses confronted. During the movement, the specific techniques used by civil rights groups will be discussed.

Foodservice, Lodging & Recreation Management (FLR)**FLR-101 Introduction to Foodservice, Lodging and Recreation Management**

3 credits/3 class hours

This course is a study of the history, organization, problems, opportunities and possible future trends of the hotel-motel and foodservice industries. The basic functions, procedures and responsibilities of management are explained.

FLR-102 Foodservice 1

3 credits/2 lecture & 1 lab hours

This course is a study of the fundamentals of food preparation, service procedures, sanitation and safety practices of the foodservice business. Controls and management of foodservice operations are also discussed.

FLR-103 Housekeeping and Maintenance Operations

3 credits/3 class hours

This course is a study of the organization and functions of the housekeeping departments of hotel and motel establishments. Selection and care of supplies and furnishings as well as practical problems of housekeeping are considered. Emphasis is placed on safety, sanitation and preventive maintenance. Facilities management will also be discussed.

FLR-105 Human Resources and Ethical Practices

3 credits/3 class hours

This is a course in the techniques involved in hiring, orienting, training, supervising and evaluating employees in hospitality industry. Ethical scenarios are presented and group discussions are emphasized.

FLR-106 Introduction to Casino Gaming

3 credits/3 class hours

This course is designed to acquaint students with all facets of the casino gaming industry within the hospitality industry. The history of gaming, an overview of the games of chance, the economic, sociological and cultural impact of casinos and the future of the industry will be discussed. Emphasis will also be placed on the casino hotels, food and beverage operations and the differentiation of various gaming entities.

FLR-108 Food Safety and Sanitation

3 credits/3 class hours

This course introduces the student to the latest developments and sanitation procedures with the foodservice industry. Government standards, emerging issues and HACCP will be discussed. Upon completion, students are prepared to take the SERVSAFE exam for a food industry certificate.

FLR-109 Foodservice Management

3 credits/3 class hours

This is a course which acquaints the student with the various foodservice establishments. Emphasis will be placed on the physical design of the menu. The principles and practices of pricing menus, types of menus and food preferences of the public will be included. Liquor laws and the service of beverages will be discussed.

FLR-110 Hospitality Control Systems

3 credits/3 class hours

This course increases student awareness of the need for cost controls in this highly diversified, competitive industry. The students will discuss a variety of applicable cost control tools and to interpret terminology and methodology of the various current cost control mechanisms currently being utilized in today's hospitality industry.

FLR-120 Hospitality Law
3 credits/3 class hours

This is a course which examines aspects of hotel and restaurant law, government regulations and insurance and their impact on the hospitality industry. Special emphasis is placed on employee relations, food liability, liquor liability and patron civil rights.

FLR-155 Hospitality Seminar 1
3 credits/3 class hours
Prerequisite: 18 *FLR* credits or permission of instructor

This is a required course consisting of classroom lecture and industry work experience. Student is required to complete 150 hours of work experience in a college-approved hospitality setting. Students will also meet for classroom lecture. Student may choose a lodging or food service establishment for Seminar 1. An alternate establishment must be chosen for Seminar 2.

FLR-201 Front Office Operations
3 credits/3 class hours

This course emphasizes the public relations and responsibilities of the front office staff. Included are hotel organizations, salesmanship, accounting and controls and the legal aspects of inn keeping.

FLR-203 Hospitality Sales and Marketing
3 credits/3 class hours

This is a course in the market analysis of media including: space and outdoor advertising, radio, TV, direct mail and other publicity aids. Both in-house and outside selling are discussed. The course topics include affiliations and allied agencies, individual room business, group business and sales incentives such as specialized facilities, food or beverages.

FLR-225 Quantity Food Production
4 credits/1 lecture & 3 lab hours
Prerequisite: *FLR-102* or permission of instructor

This course is a study of the preparation of food items in large foodservice operation. Emphasis is on the use and care of kitchen equipment, the development of standardized recipes and the calculation of food and labor costs. Experience in planning, preparation and foodservice in the food industry, as well as a segment on transported foods (catering) is included.

FLR-255 Hospitality Seminar 2
3 credits/3 class hours
Prerequisite: 24 *FLR* credits or permission of instructor

This is a required course consisting of classroom lecture and industry work experience. Students are required to gain an additional 150 hours of work experience in a college-approved setting. Students must choose the alternate establishment to what was chosen in Seminar 1.

Foreign Culture & Languages (FCL)

FCL-103 Mythology
3 credits/3 class hours

This course provides a comparative study of major mythologies of the western world (Greek, Roman and Norse (or Teutonic)), with emphasis on the relationship between earlier cultural and contemporary beliefs. The study of mythology provides an awareness of the recurring nature and influence of basic cultural themes as well as the value of myths and legends to the study of modern anthropology, geography, history, psychology, science and sociology and an understanding of advertising, art, journalism, sports and everyday speech.

French Language & Culture (FRE)

FRE-101 Elementary French 1
3 credits/3 class hours
Prerequisites: Eligibility for *ENG-100* & *DVS-101*
or *DVS-103*



This course is designed to encourage the development of communicative proficiency through an integrated approach that incorporates all four language skills: listening, speaking, reading and writing. Grammatical structures, vocabulary and readings are presented as tools for developing good communications skills. In addition, this course aims to promote culture awareness of the French-speaking world.

FRE-102 Elementary French 2
3 credits/3 class hours
Prerequisite: *FRE-101* or with a grade of C or better

This course builds on the skills in Elementary French 1, as students continue to develop their communicative language skills in French. In addition, this course aims to promote cultural awareness of the French-speaking world. It is recommended that students take the next level FRE course (*FRE-201*) within one academic year of the completion of this course.

FRE-201 Intermediate French 1
3 credits/3 class hours
Prerequisite: *FRE-102* with a grade of C or better

This course builds on the skills acquired during the elementary French language sequence. It includes a functional review of the basic language structures and grammar, then introduces more complex structures. The course has a strong cultural component. It is recommended that students take the next level FRE course (*FRE-202*) within one academic year of the completion of this course.

FRE-202 Intermediate French 2
3 credits/3 class hours
Prerequisite: *FRE-201* with a grade of C or better

This course is a continuation of the Intermediate French 1 course. Students continue to refine their language abilities, increase grammar comprehension and enhance their vocabulary. All grammatical structures are covered. The course has a very strong cultural component.

Fire Science Administration (FSA)

FSA-102 Principle of Emergency Services
3 credits/3 class hours

This course provides an overview to fire protection; career opportunities in fire protection and related fields; philosophy and history of fire protection/service; 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 protection functions; basic fire chemistry and physics; introduction to fire protection systems; introduction to tactics and strategy.

FSA-103 Fundamentals of Fire Prevention and Fire Code Enforcement
3 credits/3 lecture hours

This course provides students with fundamental knowledge relating to the field of fire prevention. Topics include the history and philosophy of fire prevention, organization and operation of a fire prevention bureau and use and application of codes and standards. The course covers plan reviews, fire inspections, fire and life safety education and fire investigation.

FSA-105 Introduction to Fire and Emergency Services Administration
3 credits/3 lecture hours
Prerequisite: *FSA-102* or equivalent

This course introduces the student to the organization and management of a fire and emergency services department and the relationship of government agencies to the fire service. Emphasis is placed on fire and emergency service, ethics and leadership from the perspective of the company officer.

FSA-106 Elements of Building Construction
3 credits/3 class hours
Prerequisite: *FSA-102* or equivalent

This course delineates the components of building construction that pertain to fire and safety. The focus of this course is on fire fighter safety. The elements of building construction and design of structures are shown to be the key factors when inspecting buildings, pre-planning fire operations and operating at incidents.

FSA-107 Fire Behavior and Combustion
3 credits/3 class hours
Prerequisites: *FSA-102* or equivalent & demonstrated competency of high school level algebra or equivalent

This course is a study of basic definitions of the physical properties and chemical characteristics applicable to fire; it also discusses combustion, the principles of fire, heat measurement, heat transfer and heat energy sources. Emphasis is on emergency situations and the most favorable methods of handling fire fighting and control.

FSA-201 Fire Protection Systems
3 credits/3 lecture hours
Prerequisites: *FSA-102* or equivalent and demonstrated competency of high school level algebra or equivalent

This course focuses on the features of design and operation of fire alarm systems, water-based fire suppression systems, special hazard fire suppression systems, water supply for fire protection and portable fire extinguishers.

FSA-203 Firefighting Strategy and Tactics
3 credits/3 lecture hours
Prerequisite: *FSA-102* or equivalent

This course provides students with the principles of fire ground control through utilization of personnel, equipment and extinguishing agents.

FSA-205 Principles of Fire and Emergency Services Safety and Survival
3 credits/3 lecture hours
Prerequisites: *FSA-102* or equivalent & *FSA-107* & *FSA-105*

This course introduces students to the basic principles and history related to the national firefighter life safety initiatives. The course focuses on the need for cultural and behavioral change throughout emergency services.

FSA-206 Fire Protection Hydraulics and Water Supply
3 credits/3 lecture hours
Prerequisites: *FSA-102* or equivalent and demonstrated competency of high school level algebra or equivalent

This course provides students with the theoretical knowledge to identify the principles of the use of water in fire protection. Additionally, students will apply hydraulic principles to analyze and solve water supply problems.

FSA-207 Hazardous Materials Chemistry
3 credits/3 lecture hours
Prerequisites: *FSA-102*, *FSA-107* & *CHM-109* or *CHM-110/CHM-111*

This course provides students with basic chemical knowledge related to the categories of hazardous materials, including recognition, identification, reactivity and health hazards encountered by emergency services.

FSA-209 Fire Investigation I
3 credits/3 lecture hours
Prerequisites: *FSA-102* or equivalent, *FSA-105*, *FSA-106* & *FSA-107*

This course provides an overview of the fundamentals and technical knowledge needed for proper fire scene interpretations. This includes recognizing and conducting origin and cause investigations, preservation of evidence and documentation, scene security, motives of fire setters and types of fire causes.

FSA-210 Emergency Services Course Delivery
3 credits/3 class hours

This course is a study of an emergency services instructor's responsibility in idea communication, learning and teaching concepts, job analysis, teaching objectives, instructional aids use and performance objectives.

FSA-211 Fire Administration
3 credits/3 class hours
Prerequisites: *FSA-102* or equivalent & *FSA-105*

This course covers the principles of organization and administration in fire protection services; the structure and function of the department, battalion and company as components of municipal organization; duties and responsibilities of the company officer; a study of human resources management, training, budgeting, records, reports and other relations.

Geography (GEO)

GEO-101 World Geography
3 credits/3 class hours

This course is a survey of the earth's surface, its geophysical features. Climate, soil, natural resources and transportation are studied as they affect economic, political and cultural development.

GEO-103 Geography of US and Canada
3 credits/3 class hours

This course is a study of the United States and Canada, emphasizing cultural development and physical environment. Also studied are the relationships of the two countries to the rest of the world.

German Language & Culture (GER)

GER-101 Elementary German 1
3 credits/3 class hours
Prerequisites: Eligibility for *ENG-100* & *DVS-101* or *DVS-103*

This course is designed to encourage the development of communicative proficiency through an integrated approach that incorporates all four language skills: listening, speaking, reading and writing. Grammatical structures, vocabulary and readings are presented as tools for developing good communications skills. In addition, this course aims to promote culture awareness of the German-speaking world.

GER-102 Elementary German 2
3 credits/3 class hours
Prerequisite: Completion of *GER-101* with a grade of C or better

This course builds on the skills acquired in Elementary German 1, as students continue to develop their communicative language skills in German. In addition, this course aims to promote culture awareness of the German-speaking world. It is recommended that students take the next level GER course (GER-201) within one academic year of the completion of the previous course.

GER-201 Intermediate German 1
3 credits/3 class hours
Prerequisite: Completion of *GER-102* with a grade of C or better

This course builds on the skills acquired during the elementary German language sequence. It includes a functional review of the basic language structures and grammar, then introduces more complex structures. The course has a strong cultural component. It is recommended that students take the next level GER course (GER-202) within one academic year of the completion of this course.

GER-202 Intermediate German 2
3 credits/3 class hours
Prerequisite: Completion of *GER-201* with a grade of C or better

This course continues to refine students' language abilities, increase grammar comprehension and enhance their vocabulary. All grammatical structures are covered. The course has a strong cultural component.

Geology (GGY)

GGY-201 Introduction to Geology
3 credits/2 lecture & 2 lab hours

This is a course for both science and non-science majors. The aspects of physical and historical geology discussed include but are not limited to volcanism, glaciation, stream development, rock formation, geological record and geological time.

GGY-202 Historical Geology
3 credits/2 lecture & 2 lab hours

This is a course for both science and non-science majors dealing with the evolution of the Earth, and of life forms. Principal topics include rocks, fossils, geologic time, stratigraphic principles and evolution.

GGY-203 Physical Geology
4 credits/3 lecture & 2 lab hours

This is a course for both science and non-science majors. It is a systematic study of the physical and historical aspects of the earth including materials of the earth's crust and processes acting upon and beneath the earth's surface. Topics include but are not limited to: minerals, rocks, weathering and mountain building processes, running water, glaciers, earthquakes and volcanoes. Field trips and laboratory work are included.

Health Information Technology (*see Medical Records—MDR*)

Heating & Air Conditioning Technology (HAC)

HAC-101 Basic Electrical Wiring
5 credits/3 lecture & 4 lab hours
Corequisite: *CIT-600*

This course prepares students in the principles of electricity, wiring, electrical controls and motors as they relate to refrigeration, air conditioning and heating in residential and commercial settings. Emphasis is on electricity, electrical components and circuits.

HAC-102 Refrigeration Systems
5 credits/3 lecture & 4 lab hours
Prerequisite: *HAC-101*

This is a course in the design and functions of major components of residential and commercial refrigeration. Topics include the low, medium and high temperature ranges, various defrost systems, specialized system components for commercial refrigeration, recovery and recycling of refrigerants and system operations for charging and servicing.

HAC-107 EPA Refrigerant Certification Preparation
1 credit/1 class hour
Prerequisite: Departmental permission required

This course will assist the student in preparing for the EPA refrigerant usage certification exam. Additionally, the three types of certification (Type I, Type II, Type III) will be reviewed.

HAC-108 Industry Competency Exam Preparation (ICE)
1 credit/1 class hour
Prerequisite: Departmental permission required

This course will assist one in preparing to take the ICE exam. The course will give the participant a general idea of the subject matter that the test will cover, prior to taking the exam.

HAC-120 Acquiring and Using HVAC Technical Documentation
1 credit/1 lecture
Corequisite: *HAC-101*

This is a course in the application of computer programs to acquire and use heating, ventilation and air conditioning (HVAC) technical information. Topics include computer terminology used in building control systems, accessing professional society research and manufacturer and wholesaler web sites for sales literature, service literature, parts information and product-data specifications. Additional topics include storing, downloading, saving, and printing information as well as job searching. This course is graded on a pass/fail basis.

HAC-201 Heating Systems
5 credits/3 lecture & 4 lab hours
Prerequisite: *HAC-101*

This is a course in the major components of gas, oil, electric, hydronic heating systems as they relate to residential and commercial settings. Emphasis is on control devices and troubleshooting.

HAC-202 Air Conditioning Systems
5 credits/3 lecture & 4 lab hours
Prerequisite: *HAC-101*

This is a course in the design and function of components of residential and commercial air conditioning. Topics include whole house and window air conditioners, rooftop units, heat pumps and air cleaning systems. Electrical controls, wiring, troubleshooting and psychrometrics are discussed.

HAC-203 Estimating Thermal Loads
4 credits/4 class hours
Prerequisite: 15 *HAC* credits or departmental approval

This is a computer-based course in load calculations for heating and cooling buildings. Computer software is used to model green building performance in an effort to optimize the design of the HVAC system. American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) and Heating, Refrigeration and Air Conditioning Institute of Canada (HRAI) ventilation standards are included as well as HRAI certification testing. Compliance with ENERGY STAR and LEED certification are discussed. Testing materials and fees for certification are added to this course.

HAC-204 Duct and Hydronic System Design

4 credits/4 class hours

Prerequisite: 15 *HAC* credits or departmental approval

Green building, ENERGY STAR and LEED building certification standards depend on duct and hydronic system design. This course covers Indoor Air Quality (IAQ), duct installation standards, air flow and sizing of ducts as they relate to adequate ventilation, filtration, temperature and humidity control for building performance and comfort. Hydronic system design is included as part of building performance and comfort.

HAC-221 Heating and Air Conditioning Circuits and Controls

4 credits/4 class hours

Prerequisite: 15 *HAC* credits or departmental approval

Green building performance is related to energy usage. HVAC circuits and controls contribute to the efficient use of energy. This course covers the application of elementary two-position control circuits, electronic analog and digital circuits and concludes with an analysis of Display Data Channel (DDC) systems as they relate to the efficient use of energy and comfort.

HAC-222 Pneumatic Controls for HVAC

3 credits/3 class hours

Prerequisite: 15 *HAC* credits or departmental approval

The course includes the setup, adjustment and maintenance of pneumatic control components and systems to assist in green building performance, energy usage and affordability. Pneumatic topics, such as the compressor station, 1-pipe and 2-pipe thermostats, humidistats, single and dual input receiver controllers, relays and final control devices are covered. This equipment is demonstrated in the classroom and includes various manufacturers' devices.

HAC-224 HVAC Installation

3 credits/3 class hours

Prerequisites: *HAC-201* & *HAC-202*

This course focuses on green building performance, which is dependent upon the quality of the installed HVAC system. This course includes the procedures and practices of fabrication, installation, sealing and duct blower testing of a duct system. The course also includes the installation procedures and practices of related components of a furnace and air conditioner installation, including black iron pipe, copper tubing, plastic pipe and Corrugated Stainless Steel Tubing (CSST), along with National Electric Code (NEC) requirements for electrical installations.

HAC-225 Planned Maintenance

3 credits/3 class hours

Prerequisites: *HAC-201* & *HAC-202*

This course focuses on green building performance. ENERGY STAR and LEED building certification standards are reviewed. Planned maintenance (PM) includes the principles, practices and procedures used to complete PM on air conditioners, heat pumps, furnaces and related equipment. PM will ensure the building continues to perform as designed and commissioned.

Heavy Equipment Operators (HEO)**HEO-101 Heavy Equipment Regulation and Safety**

6 credits/4 lecture & 4 lab hours

This course provides students with safety training, both personal and equipment and the industry regulations governing the Heavy Equipment Operator field. This addresses the need to ensure a safe work environment in the heavy equipment portion of the construction industry. The training includes various emergency procedures, pre-operational equipment and soil inspection techniques, and the safety training needed to qualify for the Occupational Safety and Health Administration (OSHA) Construction Outreach completion card. The tasks specific to pipeline construction and distribution work required to complete the Department of Transportation qualification are presented

HEO-102 Equipment Operations 1

6 credits/4 lecture & 4 lab hours

This course provides an introduction to the operation and utilization of the various types of the large, expensive, heavy equipment used in the construction and material/aggregate industries. The student receives step-by-step detail in the proper methods of conducting pre-operation inspections of the equipment. Also covered are the various types of soil and aggregates and the appropriate usage and methods of compaction.

HEO-105 Heavy Equipment Regulations and Safety 2

5 credits/3 lecture & 4 lab hours

Prerequisite: *HEO-101*

This course provides students with an understanding of the hazards, regulations, proper procedures, decontamination and protective equipment associated with the remediation of hazardous waste sites. While outfitted in personal protective equipment on a simulated waste site, students participate in hands-on exercises in the methodology of using equipment to perform remediation tasks.

HEO-106 Equipment Operations 2

6 credits/3 lecture & 6 lab hours

Prerequisite: *HEO-102*

This course covers inspection and uses of various wire ropes, lifting devices and hardware used in hoisting operations. Students are also instructed in the proper application and usage of fuels, lubricants and coolants. The student also learns design and application of tires and tracks utilized in the construction industry. Also covered is the proper maintenance and usage of tires and tracks to prevent premature failure.

HEO-201 Heavy Equipment Regulations and Safety 3

4 credits/3 lecture & 2 lab hours

Prerequisite: *HEO-105*

This course provides an introduction to the components, principles, designs and operation of various systems used in gasoline and diesel engines. Preventive maintenance procedures and troubleshooting techniques are also included.

HEO-202 Equipment Operations 3

7 credits/4 lecture & 6 lab hours

Prerequisite: *HEO-106*

This course covers the work processes and safety methods that must be utilized to complete the numerous tasks assigned to the following equipment: dozer, loader, grader, scrapers, backhoe and excavator. Tasks covered include: excavating, grading, shaping, sloping, cut and fill operations, lifting techniques and hydraulic hammer use. It also covers the tasks and techniques assigned to the rubber-tired excavator or Gradall operator including trenching, sloping and fine-grade operations.

HEO-205 Equipment Operations 4

6 credits/4 lecture & 4 lab hours

Prerequisite: *HEO-202*

This course covers an introduction to a number of different operations and applications used in the heavy equipment construction industry. Welding topics include an introduction to stick, MIG, TIG and gas welding. Included in the course are the proper techniques and safety methods involved with the operation of lattice boom, telescopic boom and crawler mounted cranes. The various equipment used in the paving industry and the basic components and principles of power trains and hydraulic systems are also covered.

HEO-206 Industry Recertifications
5 credits/4 lecture & 2 lab hours

This course is designed to provide the training and instruction needed to be eligible for recertification in the areas of CPR/First Aid, Powered Industrial Truck Operator Safety, Waste Operations Site Worker Recertification and Pipeline Operator. This recertification training meets or exceeds the industry requirements for training and review. An authorized instructor administers the required recertification exams during this course. The course also covers the Mine Safety and Health Administration (MSHA) new miner training.

History (HIS)

HIS-101 History of Western Civilization 1
3 credits/3 class hours



This course presents a survey of the political, economic and social development of European civilization from ancient times to the rise of the nation-state.

HIS-102 History of Western Civilization 2
3 credits/3 class hours



This course is a survey of the political, economic and social and cultural developments of European civilization from the rise of the modern nation-state to the contemporary era.

HIS-104 United States History 1
3 credits/3 class hours



This course is an introduction to the political, economic and social history of the United States from exploration through reconstruction.

HIS-105 United States History 2
3 credits/3 class hours



This course is a survey of the political, economic, social and cultural history of the United States from Reconstruction to the contemporary era.

HIS-110 Introduction to Social Science
3 credits/3 class hours

This course provides a basic understanding of anthropology, economics, history, political science, psychology, sociology and describes the relationships among these social sciences.

HIS-113 History of the Old Testament
3 credits/3 class hours

This course provides a survey of the Old Testament exploring the major books, figures and religious developments of the Hebrews. Texts will be explored in context of literary styles, religious and historical context.

HIS-114 History of the New Testament
3 credits/3 class hours

This course provides a survey of New Testament texts, beliefs and religious practices that shaped early Christianity. Writings will be explored in context of literary style and historical context as well as theological meaning.

HIS-151 History of American Labor
3 credits/3 class hours

This course is a survey of the history of work and the worker in the United States, including major events and developments in American labor history from 1877 to the present.

HIS-203 African American History 1
3 credits/3 class hours

An introduction to the African American experience, beginning in the pre-historic Africa and continuing to 1865 and reconstruction. Topics covered include: African pre-history, Africa before colonization, the development of the Atlantic Slave Trade, slavery in the new world, comparative slave systems (new and old world), resistance to slavery, slave conditions, slavery profits, Abraham Lincoln and Emancipation, the Revolutionary War, the Civil War and Reconstruction.

HIS-205 African American History 2
3 credits/3 class hours

A study of the African American experience in the United States, after emancipation. Topics covered include: a brief review of African American history pre-1865, the historical development of Western racism, the development of African American identity, the development of Black urban ghettos and African American contributions. Also covered: Black flight to the west and northern United States, the end of reconstruction, the development of Civil Rights and the Black Power movements.

HIS-213 Twentieth Century World History
3 credits/3 class hours

This course is an examination of the major trends and contemporary movements in Europe, Asia, Africa and the Americas since 1900 including the two world wars; social and political revolutions; nationalism, imperialism and de-colonization; fascism and communism; the creation of new states; global conflict and peace building.

HIS-219 History of Women
3 credits/3 class hours

This course is a survey of society's definition of the nature and role of women, the actual conditions of women and the feminist response to intellectual, social and political problems. This course will explore the history of women in society with a special emphasis on the United States.

HIS-220 Historical Archaeology
3 credits/3 class hours

This course presents an introduction to the basic techniques, methods and theories of historic archaeology. Emphasis is placed on topics from 18th or 19th century North America that provide insights into employing material objects as scientific data for studying the past.

HIS-222 Pittsburgh: Past, Present and Future
3 credits/3 class hours

This course provides a survey of Pittsburgh's role in the colonial frontier, the westward movement, the development of the Ohio River Valley, the Industrial Revolution as well as its role in developing solutions to contemporary urban problems.

HIS-229 Contemporary United States History
3 credits/3 class hours

This course is designed as a study of the political, social and cultural movements in America during the 20th Century. Topics will include historical time periods.

Homeland Security (HLS)

HLS-101 Orientation to Homeland Security and Emergency Preparedness Planning and Response 3 credits/3 class hours

This course provides a broad overview of homeland security and homeland defense as undertaken in the United States since 9/11. This course provides the student with the generally accepted body of knowledge required of the homeland security professional. The course focuses on the enemies and the threat they pose, the homeland security policies and procedures enacted since 9/11 and the key players at the federal and state and local levels.

The course consists of a complete overview to Homeland Security, Emergency Preparedness and Response. Students will complete the Department of Homeland Security (DHS) online training for Incident Command System 100, 200 and National Incident Management System 700 and 800. Department of Homeland Security (DHS) and Federal Emergency Management Agency (FEMA) certifications are issued following successful completion of these four modules and must be present to instructor before the end of class.

HLS-102 Perspectives on Terrorism 3 credits/3 class hours

This course is an in-depth examination of the criminology of terrorism. The typologies of terrorism, tactics of terrorism, terrorism precursors profiles and basic organizational structures of terrorist groups will be explored. Historical and modern day terrorism throughout the world will also be investigated along with the study of religion and cultural conflict as they relate to terrorism.

HLS-103 Introduction to Physical Security and Deterrents to Terrorism 3 credits/3 class hours

This course will focus on the development and implementation of a Vulnerability Assessment program. Students will look at the Vulnerability Assessment's 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, which is a step-by-step approach to Vulnerability Assessment and identify the application of the program. The student will learn to apply a research methodology for gathering information, conducting investigations, conducting interviews and briefings with the client. 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 cybersecurity to be considered and learn how to apply credibility and nuisance tests. Personnel access, traffic control and other mitigation measures will be covered.

HLS-203 Emergency Medical Services and Health Services Orientation 3 credits/3 class hours

This course is designed to give a student comprehensive knowledge of Emergency Medical Services (EMS) 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, weapons of mass destruction (WMD) medical response priorities and an introduction to disaster medical operations. Students will need to spend three hours in EMS and 3 hours in an emergency room.

HLS-205 Introduction to Homeland Security Grant Writing and Grants 3 credits/3 class hours

This course will focus 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 Pennsylvania Emergency Management Agency (PEMA), Federal

Emergency Management Agency (FEMA) and Department of Homeland Security (DHS) 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. 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 re-enforced and a review of audit and best practice methodology will be reviewed.

HLS-206 Continuity of Operation Planning 3 credits/3 class hours

This course is designed for a broad audience from senior managers to those directly involved in the continuity of operations planning (COOP) effort. This class incorporates the Federal Emergency Management Agency (FEMA) Online Class—IS 547 Introduction to Continuity of Operations and provides a working knowledge of the COOP. 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. Successful completion of a certification exam through the FEMA website is required.

HLS-207 Homeland Security and Emergency Management 3 credits/3 class hours

This course provides the student with a management perspective and understanding of organizations, mitigation, prevention, planning, preparedness, readiness, response and recovery relating to homeland security events. 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 9/11.

Health & Physical Education (HPE)

The following courses introduce you to the listed activity, teach its fundamentals, permit activity time and encourage you to develop lifetime fitness habits.

HPE-101 Aerobic Dance 2 credits/3 activity hours

This is a fitness class using various dance steps and patterns to improve aerobic fitness. This class is designed for non-dancers. All dance styles and steps are incorporated into set routines to popular music. The student is not required to learn or perfect any dance styles or steps. The level of dancing is individual.

HPE-102 Aerobic Fitness 2 credits/3 activity hours

This is a course designed to improve each student's fitness level by providing various types of fitness activities such as step aerobics, circuits, interval training, weights and bands.

HPE-107 Basketball and Softball 2 credits/3 activity hours

This is a course designed to enable students to participate effectively in two sports, basketball and softball. The emphasis in this particular course will be upon the learning of the rules, mechanics, strategies and playing of each individual sport. The course is intended to fulfill the basic physical education requirement at most transfer institutions.

HPE-117 Fitness Walking 1 credit/2 activity hours

The course is designed to give students a positive experience with guidelines for developing various levels of intensity in a wholesome environment. Walking and proper nutritional habits provide a lifetime fitness combination that includes cardiovascular development and weight control.

HPE-121 Racquetball and Paddleball

2 credits/3 activity hours

This course is designed to show progressive techniques for racquetball and paddleball. Each student has the opportunity to perform the skills essential for demonstration of the activity.

HPE-123 Jogging

1 credit/2 activity hours

This course is designed to help the student make the most of their fitness potential with a special emphasis on jogging and running to develop cardiovascular conditioning.

HPE-127 Personal Physical Fitness

1 credit/2 activity hours

This course is designed to provide the student with a basic understanding of the scientific basis of physical fitness. The course is intended to help each student in developing a personal fitness profile and subsequent program of physical activity that will result in healthful living. The course will make use of practical experience and actual participation in fitness activities. Individual progress will be emphasized.

HPE-128 Physical Conditioning and Weight Training 1

2 credits/3 activity hours

This is a course in which the student evaluates his/her own physical status and with the help of the instructor, designs a physical conditioning program to meet personal goals and interest. Areas of concentration are cardiovascular endurance, flexibility, body composition, muscular strength and muscular endurance. Activities generally selected involve aerobic, resistive and flexibility exercises. This course emphasizes proper techniques, purpose of each exercise, safety and how to get expected results from an individualized physical conditioning program.

HPE-129 Physical Conditioning and Weight Training 2

2 credits/3 activity hours

This course enables experienced (HPE-128 preferred) physical conditioning students to continue their exercise program under the supervision and guidance of a qualified instructor. Each student evaluates his/her own health status and participates in a physical condition program designed to meet personal goals and interests. Areas of concentration are cardiovascular endurance, flexibility, body composition, muscular strength and muscular endurance. Students with current high fitness levels may experiment with advanced training techniques to enhance their physical conditioning program.

HPE-135 Yoga 1

2 credits/3 activity hours

This course introduces the student to the basic beginning principles and practices of yoga. It will incorporate the beginning principles of getting to know your body, basic breathing, exercising, positioning and a holistic approach to healthy mind and body. This course will include both theoretical and practical experiences.

HPE-136 Self Defense

2 credits/3 activity hours

This course provides a study of striking techniques from the art of karate along with throws, holds and breakhold techniques from the art of judo and ju-jitsu. Stress is put on the student's need for practical self-defense ability as opposed to tournament competition.

HPE-138 Beginning Swimming

2 credits/3 activity hours

This is a course of instruction in personal safety in the water including basic swimming skills, self rescue and safety skills. Emphasis is given to achieving the skill and confidence necessary to be safe in and around the water.

HPE-141 Aquatic Fitness

1 credit/2 activity hours

This is a course for swimmers who desire to obtain physical and cardiovascular fitness through aquatics.

HPE-142 Aerobic Kickboxing

2 credits/3 activity hours

Aerobic kickboxing takes the music and rhythm of a "traditional" aerobics class and combines it with the techniques of modern kickboxing, providing a safe, non-contact aerobic workout. Students will be led through various aerobic routines as well as learning basic fitness principles.

HPE-147 Tennis and Paddletennis

2 credits/3 activity hours

This is a course designed with the beginning tennis player in mind. The emphasis will be placed on the history and the beginner phases of tennis and paddle tennis play.

Fitness and Sports Management:

These lecture courses inform you about health and fitness and provide you with the knowledge and skills to pursue careers in coaching, physical education and teaching.

HPE-171 Personal and Community Health and Wellness

3 credits/3 class hours

This course provides an overview of personal health and wellness. Active learning experiences encourage the exploration of personal wellness and lifestyle concept. Topics include, but are not limited to: fitness, nutrition, sexuality, smoking, alcohol and substance abuse, stress and emotional wellness. Participation in class activities assists the formulation of an individualized wellness plan.

HPE-172 Foundations of Health and Physical Education

3 credits/3 class hours

This is a course in the historical foundations of the physical education including fundamental principles and the preparation, qualifications, opportunities and functions of the health and physical education teacher and recreation leader.

HPE-174 Coaching and Officiating Sports

3 credits/3 class hours

This course provides an overview of coaching using a technical, psychological and philosophical approach. Latest developments in coaching methods and a history of men's and women's sports are presented. Officiating men's and women's team and individual sports is covered. The structure of officials' organizations and game rules are taught. Clinic sessions and participation in officiating are also part of this course.

HPE-175 Camp Counseling and Administration

3 credits/3 class hours

This is a study of the methods and theories of camp counseling and administration. Field trips and other experiences in camp work with various age groups are part of the course.

HPE-176 Recreation and Group Activities

3 credits/3 class hours

This is a study of working methods with groups in goal-oriented and leisure time activities.

HPE-177 First Aid and Athletic Injuries
3 credits/3 class hours

This course provides students with certification in sport safety and first aid by the American Red Cross and cardio-pulmonary resuscitation by the American Heart Association. In addition, theoretical and practical experience is provided in both the care and prevention of athletic injuries.

HPE-191 Field Work in Health and Physical Education
1 credit/15 practicum hours

These courses enable you to do individual work in physical education. Discuss your specific needs with the physical education faculty before enrolling.

HPE-192 Field Work in Health and Physical Education
2 credits/30 practicum hours

This course offers a student an opportunity to participate in a community, school or after-school program under the direction of a professional.

HPE-193 Field Work in Health and Physical Education
3 credits/45 practicum hours

This course offers a student an opportunity to participate in a community, school or after-school program under the direction of a professional.

HPE-201 Applied Anatomy and Kinesiology
3 credits/3 class hours
Prerequisite: *BIO-110* or *BIO-151*

This course involves the study of the structure of the human body with special emphasis on the skeletal, muscular, cardiorespiratory and nervous systems. Basic principles of kinesiology concerning the analysis of human motion are also included.

HPE-205 Organization and Management of Adult Fitness Programs
3 credits/3 class hours

This is a course designed to provide students with the theoretical and practical experience in organizing and managing physical fitness programs for adults.

HPE-207 Fundamentals of Exercise Physiology
3 credits/3 class hours
Prerequisite: *HPE-201*

This is a course dealing with the basic principles of exercise physiology concerning human responses and adaptations to exercise of varying levels of stress and intensity.

HPE-225 Fundamentals of Fitness Theory, Programming and Assessment
3 credits/3 class hours

This course is designed to provide the theoretical and practical basis to properly select and utilize instrumentation and techniques for physical fitness assessments and exercise prescriptions based on a subject's tolerance for physical activity. Field tests are practiced, analyzed, discussed and validated by laboratory experiences. Special emphasis is given on risk factors, injuries, environmental factors, motivation and their role in the physical conditioning of various populations.

HPE-230 Advanced Physical Training
2 credits/3 activity hours

Advanced physical training is a challenging fitness course that utilizes endurance, strength, agility, coordination and reaction fitness activities in individual and group formats.

Italian Language & Culture (ITA)

ITA-101 Elementary Italian 1
3 credits/3 class hours

Prerequisites: Eligibility for *ENG-100* & *DVS-101* or *DVS-103*

This course is designed to encourage the development of communicative proficiency through an integrated approach that incorporates all four language skills: listening, speaking, reading and writing. Grammatical structures, vocabulary and readings are presented as tools for developing good communications skills. In addition, this course aims to promote culture awareness of the Italian-speaking world.

ITA-102 Elementary Italian 2
3 credits/3 class hours

Prerequisite: *ITA-101* with grade of C or better

This course builds on the skills acquired in Elementary Italian 1, as students continue to develop their communicative language skills in Italian. In addition, this course aims to promote culture awareness of the Italian-speaking world. It is recommended that students take the next level ITA course (*ITA-201*) within one academic year of the completion of this course.

ITA-201 Intermediate Italian 1
3 credits/3 class hours

Prerequisite: *ITA-102* with grade of C or better

The course builds on the skills acquired during the elementary Italian language sequence. It includes a functional review of the basic language structures and grammar, then introduces more complex structures. The course has a strong cultural component. It is recommended that students take the next level ITA course (*ITA-202*) within one academic year of the completion of this course.

ITA-202 Intermediate Italian 2
3 credits/3 class hours

Prerequisite: Earning a C or better in *ITA-201*

This course is a continuation of the Intermediate Italian 1 course. Students continue to refine their language abilities, increase grammar comprehension and enhance their vocabulary. All grammatical structures are covered. The course has a very strong cultural component.

Interpreter for the Deaf Training (ITP) (also see *American Sign Language (ASL)*)

ITP-100 Orientation to Deaf Students in Educational Setting
3 Credits/3 lecture hours

This course will introduce students to the educational needs of children with hearing loss and the role that an interpreter plays in meeting those needs. The causes of hearing loss will be discussed, as will the impact of varying degrees of hearing loss upon an individual's acquisition of speech, language, information and skill. Accommodations for students with special needs beyond those related to hearing loss will be addressed. The history of the education of Deaf and hard of hearing children will be reviewed, with emphasis on the variety of popular philosophies and approaches. The role of the interpreter as part of the K-12 educational team will also be discussed.

ITP-101 Interpreting Lab 1
4 Credits/2 lecture & 2 Lab hours

Prerequisites: *ASL-104* & *ASL-201* or the equivalent of both

This course will present students with an introduction to Demand Control Schema (DC-S) as it applies to professional interpreting. Students will practice making demand control schema decisions that create and encourage a best practice process. Beginning with 1:1 interpreting simulations and progressing to small group interpreting applications, the students will analyze the DC-S rubric and will apply their response to various interpreting situations. They will analyze their responses, collaborate with and provide positive, supportive feedback to their peers using the DC-S rubric

ITP-102 Special Topics Lab 2
4 Credits/2 lecture & 2 Lab hours

This course will engage students in discourse analysis, proper use of the professional register and comparative interpreting styles and settings. Students will review the discourse analysis process for exploring the meaning and complexities of both discourse American Sign Language (ASL) and English in all five register areas. Steps one through five of the ten step discourse model will be addressed, including: prediction, view and recall, content mapping, source language and abstraction. Students will analyze map and re-tell selected text in both ASL and English using the most appropriate register.

ITP-105 Introduction to Interpreting
3 credits/3 lecture & .5 lab hour

This course provides students with an overview of the sign language interpreting field. The history and development of sign language interpreting will be explored. Various models of interpreting will be discussed. Analytical techniques employed by interpreters will be introduced. Laws governing the provision of interpreting services in the state of Pennsylvania will be addressed, along with issues pertaining to qualifications and certifications. Students will have the opportunity to begin consecutive interpreting of selected American Sign Language (ASL) and English texts.

ITP-106 Linguistics
3 credits/2 lecture & 1 lab hour

This course trains students to perform linguistic analyses of American Sign Language (ASL). Emphasis is placed upon examining phonology, morphology, syntax and contacting in English and ASL. Students will review published research and engage in original research regarding use of ASL by Deaf and hearing people.

ITP-107 Interpreting Theory
4 credits/4 lecture hours
Prerequisite: *ITP-105*

This course will further engage students in discussion of interpreting as a profession. Various modes of interpreting will be presented including: Manually Coded English (MCE), Pidgeon Signed English (PSE), Signed Exact English (SEE), Tactile and Low Visual Interpreting (LV). Students will analyze the philosophies and usage of bi-lingual, bi-cultural, conduit, helper and ally modes.

ITP-201 Classroom Interpreting Lab 3
4 credits/2 lecture & 2 lab hours
Prerequisite: *ITP-102*

This course will build subject matter vocabulary while students continue to explore discourse analysis, semantic equivalence and lexical intent. The discourse analysis process for exploring meaning and complexities of both American Sign Language (ASL) and English will continue. Steps six through eight of the ten step discourse model will be addressed, including: retelling in source language, analyzing salient features of the source and target language and visualization mapping. Students will analyze, map and re-tell selected text in both ASL and English using segmented and conceptual interpreting skills. Professional interaction guidelines will also be emphasized.

ITP-202 Interpreting Voice to Sign
3 Credits/2 lecture & 1 lab hours
Prerequisite: *ITP-105*

This course will present students with an introduction to the principles involved in interpreting and transliterating from spoken English to ASL. Basic principles involved in the interpreting process will be reviewed, with emphasis on interpreting and transliterating spoken English texts into signed equivalents. Students will view model interpretations and transliterations, followed by analysis and discussion.

ITP-203 Interpreting Lab 1
4 credits/1 lecture & 3 lab hours
Prerequisites: *ASL-201, ITP-201 & ITP-202*

This lab course is designed to give students hands-on experience through in-class group and individual activities demonstrating actual interpretation and transliteration. Peers will provide feedback using the demand-control schema model and critique for accuracy and grammar. Students will become more familiar with the process of interpreting in primary grade settings.

ITP-204 Interpreting Lab 2
4 credits/1 lecture & 3 lab hours
Prerequisite: *ITP-203*

This lab course is designed to give students hands-on experience through in-class group and individual activities demonstrating actual interpretation and transliteration. Peers will provide feedback using the demand-control schema model and critique for accuracy and grammar. Students will become more familiar with the process of interpreting in middle and high school grade settings.

ITP-205 Non-classroom Interpreting Lab 4
4 credits/4 lecture & 2 lab hours
Prerequisite: *ITP-201 & SPH-101*

This course delineates the connection between educational and community settings. Students will continue to explore discourse analysis, the interpreting process and demand control schema applications. Steps nine and ten of the discourse model will be addressed, including: syntactic message formation, linguistic and cultural competencies, conceptual interpreting and spontaneous interpreting. Student will analyze map and re-tell selected text in both American Sign Language (ASL) and English using conceptual and spontaneous interpreting. Public speaking skills and professional interaction guidelines will also be emphasized.

ITP-206 Interpreter Ethics
4 credits/4 lecture hours
Prerequisite: *ITP-105* or instructor's approval

This course will present students with an overview of the laws which govern our profession, the certifications required and the legal, profession and cultural expectations for the professional interpreter. Students will discuss and review federal, state and local laws and statues as applied to both community and educational situations, including: Health Insurance Portability and Accountability Act (HIPAA), Integrated Disability Education and Awareness (IDEA) PL94-142 and Americans with Disabilities Act (ADA). Students will discuss state certification and registration requirements for both community and educational interpreters including: National Interpreter Certification (NIC), Educational Interpreter Performance Assessment (EIPA), Certificate of Interpretation (CI), Certificate of Transliteration (CT), Oral Interpreting Certificate (OIC) and Certified Deaf Interpreter (CDI). Additionally, students will discuss confidentiality, the Code of Professional Conduct (CPC), cultural mediation and client advocacy.

ITP-207 Interpreting for Special Populations Lab 5
4 credits/4 lecture & 2 lab hours
Prerequisite: *ITP-205*

This course will discuss how to interpret for students and clients who have more than one disability. Students will continue to study, review and apply Demand Control Schema, discourse analysis and sociolinguistic interpreting models while learning how and when to change interpreting styles or modes. Students will be better able to accommodate both hearing and deaf clients when more than one disability is involved.

ITP-250 Educational Interpreting Practicum
4 credits/1 lecture & 6 practicum hours
Prerequisite: All courses must be completed except final semester classes

This course is a field placement practicum in the K–12 educational system under a supervising mentor. The translation and interpreting practicum provides students with the opportunity to experience, understand and gain familiarity with the professional world of translation and interpreting in public and private school systems. Placements will be in two different educational levels, grades K–5, 6–8 or 9–12, lasting eight weeks each.

Journalism (JRN)

JRN-101 Introduction to Journalism
3 credits/3 class hours
Prerequisite: Eligibility for *ENG-101*

This is a course to acquaint the student with the news sources for a journalist or citizen. Methods of news gathering and management are covered, along with economic, social, political, legal and technical problems associated with journalism for newspapers, magazines, television and radio.

JRN-102 Fundamentals of News Reporting
3 credits/3 class hours
Prerequisite: Eligibility for *ENG-101*

This course teaches students to write for various forms of media including newspapers, magazines, websites, radio and television. Students will also learn the laws, ethics and professional standards associated with writing for media.

JRN-103 Introduction to Mass Media
3 credits/3 class hours

This is an introduction to mass media: the role, content, effects and responsibilities of newspapers, magazines, books, radio, television and films are studied.

JRN-106 Principles of Communication
3 credits/3 class hours

This is a course to acquaint students with the techniques of communication and their application. Open to non-journalism majors.

JRN-121 Publications Practicum 1, 2, 3
JRN-122 1 credit/by appointment
JRN-123

These courses provide the student with hands-on experience and guidance in the processes of actual media production.

JRN-150 Copy Editing
3 credits/3 class hours
Prerequisite: Eligibility for *ENG-101*

This course involves the study of copy editing and layout processes with emphasis on editing for accuracy, fairness, readability and design.

Labor & Management Studies (LMS)

LMS-101 Introduction to Labor and Management Studies
3 credits/3 class hours

This course examines labor & management relations in the workplace, the rights and responsibilities of management and bargaining units as defined by the law and collective bargaining agreements, issues pertaining to race, class, gender and work, the historical circumstances and lessons learned that have shaped labor and management relations in the greater Pittsburgh region.

LMS-103 Critical Issues in Pittsburgh Regional Labor and Management Relations
3 credits/3 hours lecture

This course examines concrete economic development projects through the lens of labor & management relations. Learners in this course will critically analyze contemporary labor and management issues within the regional economic and political environment.

LMS-105 Labor and Management Research/Portfolio Development and Application
3 credits/3 hours lecture
Prerequisite: *LMS-101*

This course is designed to provide learners in a contextualized fashion with the tools necessary to conduct social science research related to their professional interest and local work setting with an emphasis on selecting a topic that helps them to effect change within their area of study. In this course, learners will apply their research to the preparation of an electronic (E-portfolio) that demonstrates their learning in the context of the Labor Management Studies (LMS) program goals.

LMS-107 Human Capital in Regional Economic Development
3 credits/3 hours lecture

This course examines the skills and organizational structures necessary for the current and future workplace, identifies resources needed—both natural and human—for a sustainable and productive regional economy.

LMS-109 Pittsburgh Labor and Management in the Global Economy
3 credits/3 hours lecture

This course offers learners an overview of comparative organizational systems as well as trends and practices shaping work in the global economy. Learners will examine the role of labor and management in attracting new regional opportunities from the global community.

Land Administration (LND)

LND-101 Introduction to Land Administration
3 credits/3 class hours
Corequisite: *LND-102*

This course is a study in the principles of oil and natural gas geology, its production, as well as the basics of land ownership. Instruction and discussion will include a primer in petroleum (oil and gas) geology, the history of oil and gas production in the Appalachian Basin, the evolution of land ownership, oil and gas terminology, the development of the oil and gas lease, and an overview of land maps and property descriptions.

LND-102 Real Property for the Oil and Gas Industry
4 credits/4 hours lecture
Corequisite: *LND-101*

This course is a study of the principles of basic property law as it relates to the oil and natural gas industry. Discussion topics and instruction will include the elements of a deed, analysis of conveyances, types of ownership, mineral severance, legal descriptions and recording statutes. Emphasis on property law for the oil and natural gas industry will include additional discussion topics and instruction on oil, gas, coal and other mineral reservations typically utilized in conveyances in the Appalachian region.

LND-103 Oil and Gas Leases
3 credits/3 hours lecture
Prerequisites: *LND-101, LND-102, CIT-155*

This course is a study of the principles of basic oil and gas clauses typically contained in an oil and gas lease. Discussion topics and instruction will include the elements of a lease; rights, duties and obligations of the parties to a lease; calculating production payments; apportioning interests after assignment; effects of forming a pool or unit; and terminating a lease.

LND-104 Contract Law for Oil and Gas Industry

3 credits/3 hours lecture

Prerequisites: *LND-101, LND-102, CIT-155*

This course is a study of the principles of basic contract law as it relates to issues in general business and specifically in the oil and natural gas industry. Emphasis on contract law for the oil and natural gas industry will include additional discussion topics and instruction on contracts utilized in the natural gas industry. The student will learn about various agreements such as farm-ins, farm-outs, communitization, American Association of Petroleum Landman (AAPL) Model Form Operating Agreement and Council of Petroleum Accountants Societies, Inc. (COPAS) Accounting Procedure, various forms of assignments, joint exploration agreements, gas purchase, gas sales, gas distribution, transportation and gathering agreements.

LND-105 Fundamentals of Title Abstracting

4 credits/4 hours lecture

Prerequisites: *LND-101* and *LND-102*Corequisite: *LND-103*

This course is a study of the principles of property title abstracting. The student will understand the process of being able to provide the chain of title for a tract of land including the surface, oil, gas, coal and minerals, as well as the leasehold chain for the property and providing any and all encumbrances on the property.

LND-201 Geographic Information Systems

3 credits/2 lecture and 1 lab hours

This course presents the fundamentals of Geographic Information Systems (GIS) as employed in the contemporary workplace. It is aimed at researchers and analysts from any discipline who want to expand their analytic toolbox. Students build a sequence of skills in Environmental Systems Research Institute (ESRI)'s ArcGIS software and undertake a series of case studies in fields ranging from environmental analysis, epidemiology and law enforcement to energy exploration. Students learn to develop spatial data collections for their discipline or professional needs. The course focuses on applications and problem-solving not computers.

Massage Therapy (MAS)**MAS-101 Massage Therapy Principles and Procedures 1**

4 credits/2 lecture & 4 lab hours

Prerequisite: Acceptance into the MAS program

Corequisites: *ALH-109* & *BIO-161*

This course provides the history of massage from ancient to modern times. Group discussions will introduce students to the concepts of personal health and wellness, scope of practice and legal and ethical issues in the field of massage therapy. Discussions will also include the benefits and precautions for massage and the role of the massage therapist in pain management. Client screening, assessment and informed consent will precede the application of hands-on techniques.

The laboratory portion of this course includes the safe, sanitary and efficient use of massage equipment and supplies, the application of gliding, kneading and percussive strokes, demonstrations of proper body mechanics and lifestyle habits that increase career longevity. Writing clear, concise and accurate treatment notes will conclude each lab session.

MAS-102 Massage Therapy Principles and Procedures 2

4 credits/2 lecture & 4 lab hours

Prerequisites: *BIO-161* & *MAS-101*Corequisite: *BIO-162*

This course provides students with the unique approach to massage known as seated or chair massage. Students continue to build upon previous skills in assessment and charting by documenting sessions and integrating healthcare terminology with therapeutic outcomes. Benefits and precautions for chair massage will be discussed.

In the laboratory portion of the class, students will be introduced to the compression and acupressure strokes common in sports massage and Asian modalities. Introductory palpation exercises will familiarize students with muscle origins, insertions and actions.

To prepare students for possible medical emergencies, this course also provides training and certification in First Aid, Adult and Child CPR.

MAS-201 Massage Therapy Principles and Procedures 3

5 credits/3 lecture & 4 Lab hours

Prerequisites: *BIO-162* & *MAS-102*

This course provides the student with the theory and practical application of the modality known as Swedish, full-body or table massage. Students will become familiar with endangerment sites, contraindications and precautions for massage. A thorough review of skin and musculoskeletal pathologies is included as part of the assessment procedure for Swedish massage. Students will also review palpation of bony landmarks and muscle anatomy in preparation for certification examinations. Laboratory sessions are devoted to the business and practical application of such spa-related services as aromatherapy, hydrotherapy and hot stone massage.

MAS-202 Advanced Clinical Massage Techniques

5 Credits/3 lecture & 4 lab hours

Prerequisites: *MAS-201* & *MAS-211*Corequisite: *MAS-212*

This course examines the role of the massage therapist as a professional member of the healthcare community. Students will explore the connection between massage therapy and other disciplines such as psychology, chiropractic and physical therapy. Discussion will focus on the value of continuing education to advance and enhance therapeutic skills. Strategies on how to open and operate an independent massage therapy practice will be identified and explored in depth.

The laboratory portion of the course is devoted to the practice of advanced clinical techniques used in therapeutic massage. Students will learn integrative deep tissue massage, neuromuscular therapy, trigger point therapy and myofascial release. Soft tissue management continues with acupressure, shiatsu and passive assisted stretching for stress management and pain relief.

MAS-205 Intermediate Massage Therapy, Theory, Techniques and Practice

5 credits/3 lecture & 4 lab hours

Prerequisites: *BIO-110* or *BIO-161* & *BIO-162, BIO-160* or *BIO-171* or *BIO-175* or *BIO-241, MAT-100* or higher, *PSY-101, MAS-101, SPH-101* or *ENG-101*

This second of three sequential courses addresses an overview of anatomy, palpation and kinesiology. Discussions continue covering the five basic massage strokes and the demonstration of their application to the entire body. This course will provide the student with an introduction of massage techniques for table and chair massages. Topics include: screening and interviewing clients, observation and consultation techniques. Students will be responsible for set up, positioning and draping, body mechanics, proper clean-up, sanitation, safety and universal precautions. An introductory discussion of the various massage associations will be covered. The course objectives are enhanced through varied learning experiences including lecture, laboratory, multimedia, readings, professional portfolio and community practice.

MAS-211 Clinical Applications of Massage 1

2 Credits/8 clinical hours

Prerequisites: *BIO-162* & *MAS-102*Corequisite: *MAS-201*

This course affords students the opportunity to practice chair massage skills in a variety of settings off campus. Students are provided with direct, hand-on experience at area hospitals, businesses, community events and college-sponsored activities. Under direct supervision of a clinical instructor, students will set-up and break-down the staging of off-site events, interview and screen potential clients, obtain informed consent, deliver chair massages within a given time frame and document findings

MAS-212 Clinical Applications of Massage 2

2 Credits/8 clinical hours

Prerequisites: *MAS-201 & MAS-211*Corequisite: *MAS-202*

This course provides students with a clinical environment in which to practice the business of therapeutic massage under direct supervision. In the Student Massage Clinic, responsibilities include initial client interviews, communication of proposed treatment plans, obtaining informed client consent and the delivery of therapeutic massage. By conducting the complete appointment, from interview to session goals to treatment planning, students experientially learn the role of a massage clinician. Students will sequentially rotate through clinic roles of administrator, receptionist and student therapist. In addition to providing massage, clinical duties may also include scheduling and confirming client appointments, room set up and breakdown before and after client sessions, sanitation and sterilization of laundry and equipment, selection of appropriate materials and accurate recording of client sessions.

MAS-214 Advanced Massage Therapy, Theory, Techniques and Practice

5 credits/3 lecture & 4 lab hours

Prerequisite: *MAS-205*

This course is designed to provide the student with information concerning professional issues and contemporary practice techniques of massage therapy. Lecture emphasis is placed on the various practice settings for massage therapy in the community. Major concerns of the profession are presented and include ethics, licensure certification, malpractice, client rights, scheduling, medical records, professional literature, personal safety, client safety and continuing education. It provides the student with knowledge and skills essential in developing and marketing a massage practice, preparing a budget, a business plan, reimbursement and quality assurance. Areas covered include personnel and professional skills, time management, employment interviewing, resume writing, cover letter, follow-up correspondence effective communication and problem-solving. The laboratory portion of this course includes the study of advanced contemporary massage techniques and procedures preparing the student for entry level practice as a massage therapist. Competency in chair, table and alternate position massage is attained upon completion of this course.

Mathematics (MAT)**Developmental Mathematics**

MAT-080 and *MAT-090* are designed to prepare the student for college mathematics courses. College placement tests assess the need for these courses. These courses cannot be used for any of CCAC's associate degrees or certificates.

MAT-080 Arithmetic Fundamentals

4 credits/4 class hours

This is a course in the fundamentals of arithmetic computation. Included are such topics as operations with whole numbers, fractions and decimals; percents; ratio and proportion; introduction to algebra; and geometric measures and formulas.

Students must earn a C grade or better to register for the next course in this discipline or to use this course as a prerequisite for a course in another discipline.

MAT-090 Algebra Fundamentals

4 credits/4 class hours

Prerequisite: *MAT-080*

This is a course in the fundamentals of algebra. Included are such topics as the real number system; operations on polynomial expressions containing variables; word problems; special products and factoring; solution sets of equations and inequalities in one variable. Included also are rational expressions and introduction to the rectangular coordinate system.

Students must earn a C grade or better to register for the next course in this discipline or to use this course as a prerequisite for a course in another discipline.

College Mathematics Courses

The courses listed below require college-level mathematics skills and are intended to be transferable courses. As indicated by your placement test scores, you should register for the course(s) that develop the mathematics skills required by your educational plan at CCAC and your transfer school.

MAT-102 Mathematics Concepts

3 credits/3 class hours

Prerequisite: *MAT-090* or equivalent

This is a course in contemporary mathematics for liberal arts and other students not majoring in business or the sciences. Topics include basic mathematical concepts: problem-solving and critical thinking, sets, elementary logic, numeration systems, elementary geometry, counting techniques and elementary probability and statistics. Topics are selected at the discretion of the Mathematics department.

MAT-106 Mathematics for Health Sciences

4 credits/4 class hours

Prerequisite: *MAT-090*

This course presents the mathematical fundamentals necessary to understand the basic principles of health, physics and chemistry. Emphasis is on problem-solving proficiency. Hand-held calculators are used extensively. This course is not a prerequisite for any higher level math course.

MAT-107 Mathematics for Elementary Education

3 credits/3 class hours

Prerequisite: *MAT-090* or equivalent

This course is intended as a pre-service content course for elementary education majors. This course explores the conceptual foundations of the numerical content of the mathematics curriculum in the elementary grades with an emphasis on problem-solving. Topics include operations and properties of whole numbers, integers, fractions and decimals; elementary set theory; number theory and functions.

MAT-108 Intermediate Algebra

4 credits/4 class hours

Prerequisite: *MAT-090*

This is a course in intermediate algebra. Included are such topics as operations with linear, quadratic, rational, absolute value and higher degree polynomial equations and functions; exponents, radicals and complex numbers; Cartesian coordinate system including lines and conic sections; systems of equations.

MAT-110 Mathematics for Elementary Education 2

3 credits/3 class hours

Prerequisite: *MAT-107*

This course is intended for students pursuing a career in teacher education. It is designed as a vehicle to develop a pedagogical framework for teaching mathematics in elementary grades. Students use a variety of materials for learning, work with conceptual models, use these to do mathematics and perform activities that demonstrate competence in communicating mathematics.

MAT-111 College Algebra

3 credits/3 class hours

Prerequisite: *MAT-108* or equivalent

This is a course in college algebra. Included are such topics as the real number system, polynomials, exponents and radicals, relations and functions, systems of equations, matrices and determinants and conic sections.

MAT-114 Mathematics for the Technologies 1

4 credits/4 class hours
Prerequisite: *MAT-090*

This is a course for technology majors. Topics include solutions of equations, formula transformations, systems of equations, coordinate geometry and an introduction to trigonometry.

MAT-116 Mathematics for the Technologies 2

4 credits/4 class hours
Prerequisite: *MAT-114*

This course is a continuation of MAT-114. Topics include functions and graphs, vectors, oblique triangles, exponential and logarithmic functions, complex numbers and conic sections.

MAT-120 Analytical Methods

4 credits/4 class hours
Prerequisite: *MAT-108*

This is a course in selected topics in algebra with emphasis on business and social science applications. Topics include linear and non-linear algebraic functions, exponential and logarithmic functions, systems of linear equations and inequalities, vectors and matrices, linear programming, elementary probability and the mathematics of finance.

MAT-135 Discrete Mathematics

3 credits/3 class hours
Prerequisite: *MAT-108* or equivalent

This is a course recommended for transfer students. Topics included are sets, Boolean algebra, matrices, recursion, induction, number bases, graph theory, functions and permutations.

MAT-137 Introduction to Mathematical Proofs

2 credits/2 class hours
Prerequisite: *MAT-108* or *MAT-111* or equivalent

This is a course for students majoring in mathematics or science. Topics include selected definitions from algebra written in “if and only if” form, definitions, operations and analysis of five basic types of mathematical proofs.

MAT-142 Pre-calculus

4 credits/4 class hours
Prerequisite: *MAT-108* or equivalent



This is a course for students majoring in mathematics, science or engineering. Topics include the real number line, absolute value equations and inequalities, rational functions, exponential and logarithmic functions, polynomial functions and the theory of equations, inverse functions, binomial expansion and mathematical induction.

MAT-147 College Trigonometry

3 credits/3 class hours
Prerequisite: *MAT-108* or equivalent

This is a course for students majoring in mathematics, science or engineering. Topics include trigonometric functions, identities, equations, multiple and half angle formulas, graphs, oblique triangles, inverse trigonometric functions and complex numbers.

MAT-161 Elementary Statistics

3 credits/3 class hours
Prerequisite: *MAT-108* or equivalent
Corequisite: *MAT-111* or equivalent



This is a course for students in programs requiring knowledge of statistics. Topics may include graphing distributions, measures of central tendency and variability, correlation and regression, probability, hypothesis testing using the z, t and CHI square tests.

MAT-165 Probability and Statistics

4 credits/4 class hours
Prerequisite: *MAT-108* or equivalent

This is an introduction to statistical concepts and applications. Topics include descriptive methods, probability theory, probability distribution, sampling distribution, statistical inference and linear regression and correlation. Computers and/or calculators are used for problem-solving.

Career Mathematics

The courses listed below do not build skills for further mathematics education. They apply toward an associate's degree in applied science or an Associate of Science degree in specified programs. They are not intended to be transferable courses. You should consult with your academic advisor before enrollment.

MAT-191 Mathematics for the Industries

3 credits/3 class hours
Prerequisite: *MAT-080* or equivalent

This is a course designed for students in various technology programs with basic preparation in mathematics. Included are such topics as elementary computations with rational numbers, exponents, radicals, metric conversion, ratios and scientific notation, graphing linear equations, using elementary algebra to solve simple and literal equations with applications and solving various technical problems in geometry and trigonometry using specific mathematical methods. This course is not intended for any other transfer degree program.

MAT-193 Pharmaceutical Mathematics

3 credits/3 class hours
Prerequisite: *MAT-080*

This is a course in mathematics for the Allied Health programs. Topics include conversions within different measurement systems, drug dosage and solution calculations.

MAT-195 Business Mathematics

3 credits/3 class hours
Prerequisite: *MAT-080* or equivalent

This is a course for students in career business programs. Topics include the arithmetic of whole numbers, fractions, decimals and their applications to the various fields of business, such as consumer credit, amortization, merchandising, interest and negotiable notes.

Calculus Courses**MAT-201 Calculus 1**

4 credits/4 class hours
Prerequisites: *MAT-142* & *MAT-147*



This is a course designed for students majoring in mathematics, science or engineering. The theory of calculus, as well as its problem solving and applications, is stressed. Topics include: algebraic functions; exponential and logarithmic functions; trigonometric and inverse trigonometric functions; hyperbolic and inverse hyperbolic functions; limits and continuity, derivatives and applications; curve sketching; antiderivatives; the definite integral and the Fundamental Theorem of Calculus.

MAT-202 Calculus 2

4 credits/4 class hours
Prerequisite: *MAT-201*



This is a continuation of *MAT-201*. Topics include additional applications of the definite integral, techniques of integration, improper integrals, infinite series, polar coordinates, calculus and parametric equations, vectors in two and three dimensional spaces and an introduction to differential equations.

MAT-220 Business Calculus

4 credits/4 class hours
Prerequisite: *MAT-120* or equivalent



This is a course in calculus for students majoring in business and the social sciences. Topics include techniques of differentiation and integration of explicit and implicit functions using polynomial, rational, exponential and logarithmic functions; maxima and minima of single and multivariate functions; and the definite integral.

MAT-241 Technical Calculus 1

3 credits/3 class hours
Prerequisite: *MAT-116* or equivalent

This is a two-term sequence in calculus for students in engineering technologies. Topics are presented in an intuitive manner and include conic sections, limits, differentiation and integration of polynomial functions and technical applications of the derivative and integral.

MAT-242 Technical Calculus 2

3 credits/3 class hours
Prerequisite: *MAT-241*

This is a continuation of *MAT-241*. Topics may include differentiation and integration of transcendental functions, areas and volumes, methods of integration, series, numerical methods of approximation and an introduction to differential equations.

MAT-250 Calculus 3

4 credits/4 class hours
Prerequisite: *MAT-202*



This is a continuation of *MAT-202*. Topics include quadric surfaces, calculus of vector valued functions, calculus of multivariate functions, 3-dimensional analytic geometry and vector analysis.

MAT-251 Differential Equations

3 credits/3 class hours
Prerequisite: *MAT-202* or its equivalent

This is an introductory course in the fundamental concepts of ordinary differential equations that prepares the student for further study in mathematics, engineering or science. Topics include first order equations, n^{th} order equations, Laplace Transforms, numerical methods, infinite series solutions, introduction to partial differential equations and selected applications.

MAT-253 Linear Algebra

3 credits/3 class hours
Prerequisite: *MAT-202*

This introductory course focuses on the theory and techniques of linear algebra. Topics include vectors in n -dimensional space, matrix theory, systems of linear equations, vector space theory, linear transformations, eigenvalues and eigenvectors and inner product spaces.

Medical Assistant (MDA)**MDA-101 Medical Transcription 1**

3 credits/2 lecture & 2 lab hours
Prerequisites: *ALH-104* & keyboarding speed of 40 wpm
Corequisite: *MDA-106*

This course provides the student with practical instruction for transcribing medical reports and correspondence. Topics covered are written communication skills, dictation and transcribing of various medical copy including care histories, x-ray reports, medical records, manuscripts and medical office correspondence.

MDA-103 Medical Assisting Seminar

3 credits/3 lecture hours
Corequisite: *MDA-106*

This course introduces medical assisting as a profession including duties, personal characteristics, national certification and professionalism. Areas of concentration are the medical assistant's role in specialized fields of medicine, effective communication with patients, medical law and ethics and the job search.

MDA-104 Administrative Office Management

4 credits/3 lecture & 3 lab hours
Corequisites: *ALH-140* & *MDA-105*

This course introduces the knowledge, behavior and skills used by the medical assistant in the medical office. Areas of concentration are basic clerical functions, appointment scheduling, organization of patients' medical records, data management, hardware and software use in medical offices, office equipment and supplies and time management. Additional topics include telephone techniques and International Classification of Diseases (ICD) and Current Procedural Technology (CPT) coding of health claims. Laboratory time is provided for skills competency.

MDA-105 Clinical Medical Assisting 1

5 credits/4 lecture & 3 lab hours
Prerequisite: Admission into the Medical Assistant Program
Corequisites: *ALH-140*, *CIT-100*, *MDA-104* & *MDA-208*

This course provides the medical assistant student knowledge, behaviors and skills used in the medical office to assist the physician to provide patient care. Areas of concentration include structural organization of the body, orientation to clinical medical assisting, infection control, patient records, preparing patients for examination, assisting with examinations, minor surgery and diagnostic tests. Procedures encountered in various medical specialties are included. Laboratory time is included for skills competency. Additional hours of practice time under the direct supervision of an instructor are provided.

MDA-106 Clinical Medical Assisting 2

5 credits/4 lecture & 3 lab hours
Prerequisite: *MDA-105*
Corequisites: *MDA-101*, *MDA-103* & *MDA-107*

This course provides the medical assistant student knowledge, behaviors and skills used in the medical office to assist the physician to provide patient care. Areas of concentration include medication administration, immunization records, restorative care modalities, diagnostic procedures, common office emergencies and first aid, special needs patient populations and patient education. Laboratory time is included for skills competency. Additional hours of practice time under the direct supervision of an instructor are provided.

MDA-107 Laboratory Procedures for the Medical Office

3 credits/2 lecture & 3 lab hours
Prerequisite: *ALH-140*
Corequisite: *MDA-106*

This course provides the medical assistant student knowledge, behaviors and skills used in the medical office laboratory. Areas of concentration include clinical chemistry, hematology, urinalysis, phlebotomy, quality assurance and specimen collection. Laboratory time is included for skills competency. Additional hours of practice time under the direct supervision of an instructor are provided.

MDA-108 Medical Assistant Externship

4 credits/160 clinical hours

Prerequisites: Permission of instructor, *CIT-100*, *MDA-103*, *MDA-104*, *MDA-105*, *MDA-106*, *MDA-107* & *MDA-208*

This course is a supervised, non-paid 160 hour work experience in a private physician's office or in a clinic. The student gains practical experience applying the knowledge, skills and behaviors learned in the Medical Assistant program to perform administrative, clinical and communication competencies. This course is graded pass or fail. Prior to the externship current CPR, Criminal Record Clearance and PA Child Abuse Clearances (Act 33/34) and a physical examination are required.

MDA-208 Medical Financial Management

3 credits/3 lecture hours

Corequisite: *MDA-105*

This course introduces the knowledge, behavior and skills used by the medical assistant in the performance of medical business practices. Areas of concentration are basic bookkeeping computations, accounts receivable procedures, computerized office billing systems, managed-care insurance and procedural and diagnostic coding.

Medical Records (MDR)**MDR-100 Introduction to Health Data Content and Structure**

4 credits/3 lecture & 3 lab hours

Prerequisite: Admissions to the Health Information Technology program

This course will present an introduction to the health information management profession and the health record. Some of the topics included are health data structure, content and standards; health information department functions; healthcare delivery systems; and data storage, retrieval and retention. Information presented will include paper, hybrid and electronic health records.

MDR-102 Inpatient Clinical Coding and Secondary Records

4 credits/3 lecture & 3 lab hours

Prerequisites: *MDR-100* & *ALH-140*

This course includes the historical development of medical nomenclature and clinical classification systems and their use in healthcare documentation, statistics, research, education and financial reimbursement through the prospective payment system. The International Classification of Diseases (ICD) classification system in the inpatient setting is emphasized. Secondary databases such as patient registries and clinical indices are presented as data sources in the healthcare setting.

MDR-103 Healthcare Statistics

2 credits/2 lecture hours

Prerequisites: *MDR-100*, *CIT-100*, Mathematics elective

This course will present an introduction to the basic and most frequently used healthcare statistics. Students will learn terms, definitions and formulas used in computing healthcare statistics. Other topics include data presentation, report generation and information on the collection, preparation and use of vital statistics.

MDR-202 Health Information Technology Directed Practice 1

3 credits/8 clinical hours

Prerequisite: *MDR-100*Corequisite: *MDR-102*

This course is designed to provide and place emphasis on supervised clinical practice sessions in health information technology. Analyzing, storing and retrieving information from a variety of formats, abstracting, coding and Diagnosis-Related Group (DRG) assignment, releasing information and maintaining patient registries are put into practice. The planning and organization aspects of the hospital and the Health Information Department are experienced during these practice sessions.

MDR-203 Health Information Technology Directed Practice 2

3 credits/4 lab and 4 clinical hours

Prerequisite: *MDR-202*

This course is designed to provide experience in the field of health information in health care facilities and in a simulated laboratory setting. Analyzing, coding, abstracting and patient registries are re-emphasized. The planning and organizing aspects of the Health Information Management Department are experienced during the time of these practice sessions. Students are responsible for providing and paying for transportation to all clinical sites as well as all other related costs.

MDR-206 Legal Aspects of Health Information

2 credits/1 lecture & 2 lab hours

Prerequisite: *MDR-100*

This course presents a comprehensive study of the legal aspects of health records and health information. Topics include an introduction to the fundamentals of law and the U.S. legal system; health information laws and regulations; confidentiality, privacy and security concepts; release of information policies and procedures; and ethical issues in health information management.

MDR-207 Clinical Quality Improvement, Regulatory Agencies and Specialty Facilities

3 credits/2 lecture & 3 lab hours

Prerequisite: *MDR-100*

This course presents a comprehensive study of the hospital-wide clinical quality improvement program, external regulatory agencies and health information requirements in the non-acute care setting. Topics include the organization and credentialing of the medical staff as well as the clinical quality assessment, utilization management and risk management processes; accrediting, approving, licensing and certifying agencies that regulate healthcare; and non-acute care facilities such as long-term care, ambulatory care and behavioral healthcare with their organizational characteristics, functions and health information requirements.

MDR-208 Health Information Management

3 credits/3 lecture hours

Prerequisite: Approval of the instructor

This course provides the health information technology student with management principles necessary for entry-level employment as a health information supervisor. In addition to general management skills such as communication, interpersonal skills; teams and committees; leadership concepts and techniques; and labor laws, much of the course is devoted to specific health information management topics. These include health information work flow and process monitors; plans and budgets and developing orientation, in-service and continuing education programs for healthcare employees. The student will also spend time sharing and evaluating specific management-related experiences learned during their professional practice at area healthcare facilities.

MDR-210 Ambulatory Care Clinical Coding and Reimbursement Systems

3 credits/2 lecture & 2 lab hours

Prerequisite: *MDR-102*

This course includes a comprehensive study of the International Classification of Disease (ICD) and Common Procedural Terminology (CPT) classification systems used in the outpatient setting. Payment and reimbursement methods such as the prospective payment system and managed care as well as billing and insurance procedures will be emphasized. The relationship between coding practice and corporate compliance will be emphasized.

Mechatronics (MEC)

MEC-100 Mechatronics Safety and Quality

3 credits/ 3 lecture and 1 lab hours

This course prepares students with the common skills and competencies they will need to work in Pennsylvania's manufacturing and energy industries. This course emphasizes principles of safety and quality. Students will use safety-enhancing workplace practices, including wearing personal protective equipment (PPE), performing lockout/tagout and filling out Material Safety Data Sheets (MSDS). They will utilize the fundamentals of blueprint reading, precision measurement and quality inspection. Students will sit for the Manufacturing Skill Standards Council's (MSSCS) safety and quality exams toward achievement of the Certified Production Technician (CPT) credential. Fees for test materials and certification are added to the cost of this course.

MEC-102 Mechatronics Industrial Processes

3 credits/3 lecture and 1 lab hours
Prerequisite: MEC-100

This course emphasizes industrial processes and maintenance. Students will learn how engineering materials are gathered and processed for use. The course covers principles of production planning, inventory management and the operating and troubleshooting of industrial equipment. Students who successfully pass the course will sit for the Manufacturing Skill Standards Council's (MSSC) Processes and Production and Maintenance Awareness exams towards achievement of the Certified Production Technician (CPT) credential. Fees for test materials and certification are added to the cost of this course.

MEC-204 AC/DC Electronic Drives

3 credits/2 lecture and 2 lab hours
Prerequisite: EET-103

This course covers the principles, configuration, troubleshooting and maintenance of electronic motor drives as used in industry. Topics include various types of direct current (DC) electronic drives, alternating current (AC), variable frequency and vector drives. The course builds upon principles and applications covered in foundational electrical courses. All course material is supplemented with practical hands-on exposure to the items described.

MEC205 Troubleshooting Advanced Motor Controls

3 credits/2 lecture and 2 lab hours
Prerequisite: EET-103

This course covers the principles, application, troubleshooting and maintenance of rotating electrical motors as used in industry. Topics include various types of single and three-phase alternating current (AC) motors, various types of direct current (DC) motors, reduced voltage starting and braking. The course builds upon principles and applications covered in foundational electrical courses. All course material is supplemented with practical hands-on exposure to the items described.

MEC-211 Process Control

4 credits/ 3 lecture and 2 lab hours
Prerequisite: EET-103

This course covers the fundamentals of process control and instrumentation as applied in industry for the control of level, flow, temperature and pressure. The concept of a control loop is introduced and each of the loop's components are examined: sensor, controller, final element. Design, documentation, operation, performance tuning and troubleshooting of single loop systems are discussed.

MEC-220 Mechatronics Practicum

3 credits/1 lecture and 2 practicum hours
Prerequisite: All courses must be completed except final semester courses

Students will develop and implement a project plan approved by the instructor that will integrate the skills and knowledge obtained over the previous semesters of study. This course will broaden students' knowledge with respect to technology suppliers, equipment and applications. Students may build projects in collaboration with local industry.

Mechanical Engineering Technology (MET)

MET-106 Geometric Dimensioning and Tolerancing

1 credit/1 lecture hour

This course provides an introduction to the subject of geometric dimensioning and tolerancing. The course will review the basic skills of the American Society of Mechanical Engineers (ASME) for standard Y14.5.

MET-112 Engineering Materials

4 credits/3 lecture & 2 lab hours

This course is a study of the properties of materials and the primary processing methods used in manufacturing. Emphasis is on ferrous metals and their relationship to other metals and non-metals. Methods of testing engineering materials are discussed and demonstrated.

MET-115 Architectural Systems Design

3 credits/3 lecture hours

This course is a study of air conditioning, heating systems, ventilation and plumbing systems, their characteristics, applications and limitations. Topics include comfort, heat loss calculations, heating systems, cooling systems, ventilation, water supply and waste systems. Green and sustainable system design is discussed.

MET-130 Introduction to Renewable Energy Systems

4 credits/3 lecture & 2 lab hours

This course introduces students to renewable energy systems. Topics include active and passive solar energy, photovoltaics, biomass, geothermal, hydroelectric and wind power. Conventional fuel sources such as fossil fuels and nuclear power will provide a comparison to more sustainable energy strategies. Environmental, economic, political and social issues will be considered for each energy source.

MET-150 Statics

4 credits/4 class hours
Prerequisites: MAT-116 & PHY-100 or PHY-113

This course is an introduction to the fundamentals of engineering mechanics. Included is the study of force systems, equilibrium force analysis of structures, friction, center of gravity and moment of inertia.

MET-170 Fluid Power Systems

4 credits/3 lecture & 2 lab hours
Prerequisite: MAT-114

This course prepares students to study the technology of transmitting power by the means of pressurized fluids. Topics covered are component and configurations for pneumatic and hydraulic systems, basic principles of fluid behavior and characteristics of compressible and incompressible fluids.

MET-181 Mechanical Systems

3 credits/2 lecture & 2 lab hours

This course will cover the science of linear and radial drive components, couplings, belts, gears, pulleys, bearings and sprockets. Installation, safety, maintenance, lubrication, alignments, repair and replacement techniques are covered.

MET-200 Metrology

3 credits/2 lecture & 2 lab hours
Corequisite: MET-106 or permission of the instructor

This course is a study of the fundamentals of measuring devices, their proper usage, accuracy and calibration. Proper techniques are investigated to provide the functional aspects of the investigation of geometric tolerances.

MET-211 Strength of Materials

4 credits/3 lecture & 2 lab hours
Prerequisite: *MET-150*

This course builds upon the curriculum from course MET-150. Included is the study of stress and strain, center of gravity, moment of inertia, torsion, shear and moment in beams, stresses in beams, beam deflection, combined loading, connections by riveting, bolting, welding and columns.

MET-212 Manufacturing Processes

3 credits/2 lecture & 2 lab hours
Prerequisite: *MET-112*

This course is a study of modern manufacturing processes and their applications by local industries. Both manual and automated processes in manufacturing, forming, assembly and inspection will be covered. Laboratory activities will be centered on projects to reinforce skills desired by local manufacturers.

MET- 220 Green and Sustainable Buildings

4 credits/4 lecture hours

This course explores the concept of green and sustainable buildings, including building design, site development and Leadership in Energy and Environmental Design (LEED) certification. Topics include green building fundamentals, sustainable sites, material considerations and economic analysis of green buildings.

Manufacturing Technology (MFT)**MFT-107 Blueprint Reading for Machinists**

3 credits/3 hours lecture
Corequisite: *MFT-141*

This course is designed to provide students with the basic skills to interpret shop drawings. Emphasis is placed on interpreting orthographic projection and tolerance applications.

MFT-110 Job Search Strategies for Manufacturing

1 credit/1 lab hour

This course will present techniques effective in job search processes. Emphasizing the manufacturing sector, the course will assist the student in gaining practical industry job-seeking skills and planning a job search strategy. Emphasis is placed on developing positive work habits expected by the manufacturing sector.

MFT-141 Introduction to Machining

3 credits/1 lecture & 4 lab hours
Corequisite: *MFT-107*

This course introduces the history and evolution of machining and machine tools, along with general shop safety. Classroom and lab activities include basic measurement, precision layout, metal cutting saws and drilling machines.

MFT-143 Introduction to Lathe Operations

3 credits/1 lecture & 4 lab hours
Prerequisites: *MFT-141*

This course is designed to provide students with basic skills in the use of the metal lathe and its parts and applications. Classroom and lab activities will include straight turning, facing, single-point threading, grooving, knurling and taper turning. Students will turn parts to specification, while observing appropriate safety procedures.

MFT-145 Introduction to Mill Operations

3 credits/1 lecture & 3 lab hours
Corequisite: *MFT-141*

This course introduces the basic skills in the use of the milling machine, its parts and applications. Classroom and lab activities will include set up and operation of the vertical milling machine, accessories and attachments, speeds and feeds, cutting techniques, drilling and reaming. Students will mill parts to specifications using appropriate safety procedures.

MFT-147 Introduction to Grinding Operation

3 credits/1 lecture & 4 lab hours
Corequisite: *MFT-145*

This course is designed to introduce the processes of precision grinding operations and their applications. Students will use surface grinders and techniques to make parts to specification. Additionally, they will study grinding safety, wheel selection, dressing wheels, surface finishes, grinding flats, parallels, squares, steps slots and angles.

MFT-149 Fundamentals of Computer Controlled Machining

3 credits/1 lecture & 2 lab hours
Corequisite: *MFT-143 & MFT-145*

This course is designed to develop the skills of a machinist through knowledge of computer numerical control (CNC) production techniques. Students will be taught manual part programming in G and M code and conversational programming. Emphasis will be placed on writing part programs for lathe and milling machines.

MFT-211 Material Safety and Equipment Overview

3 credits/2 lecture & 2 lab hours
Prerequisites: Separate application and completion of other program courses
Corequisite: *MFT-212*

This course provides an overview of basic nanofabrication processing equipment and materials handling procedures with a focus on safety, environment and health issues. Topics covered include: operation in a cleanroom environment, operation and use of a variety of systems including vacuum pump systems, thermal processing equipment, chemical vapor deposition systems and vacuum deposition/etching systems. Specific materials handling issues include those arising from using de-ionized water, solvents, cleansers, organic materials, ion implementation sources, diffusion sources, photo-resists, developers, metal dielectrics and toxic, flammable, corrosive and high purity gases as well as packaging materials.

MFT-212 Basic Nanofabrication Processes

3 credits/2 lecture & 2 lab hours
Prerequisites: Separate application and completion of other program courses
Corequisite: *MFT-211*

This course provides an overview of basic processing steps used in all applications of nanofabrication. Both top-down and bottom-up nanofabrication are included. The majority of the course details a step-by-step description of the equipment and processes needed to fabricate devices and structures such as bio-chips, Complementary Metal Oxide Semiconductor (CMOS) transistors, power devices, Microelectromechanical (MEM) devices and opt-electronic structures. Students learn the similarities and differences in both the equipment and process flows needed in the fabrication of these structures.

MFT-213 Materials in Nanotechnology

3 credits/2 lecture & 2 lab hours
Prerequisites: *MFT-211 & MFT-212*
Corequisite: *MFT-214*

This course covers hands-on exposure to the producing and positioning of the materials used in nanofabrication. This will include self-assembly, colloidal chemistry, atmosphere, low-pressure and plasma enhanced chemical vapor deposition. It will also include atomic layer deposition, sputtering, thermal and electron beam evaporation, nebulization and spin-on techniques. The course provides students with experience in deposition, fabricating and self-assembly for a variety of materials.

MFT-214 Lithography for Nanofabrication

3 credits/2 lecture & 2 lab hours

Prerequisites: *MFT-211* & *MFT-212*Corequisite: *MFT-213*

This course covers 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. Students learn the nature and behavior of photoresist materials. The second section examines the process from development through inspection, introducing optical masks, aligners, steppers and scanners. In addition, critical dimension control and profile control of photoresists is investigated. The last section discusses advanced optical lithographic techniques such as phase shifting masks and illumination schemes, e-beams, x-ray, EUV and ion beam lithography.

MFT-215 Materials Modification for Nanofabrication Applications

3 credits/2 lecture & 2 lab hours

Prerequisites: *MFT-211* & *MFT-212*Corequisite: *MFT-216*

This course covers the processing steps used in modifying material properties in nanofabrication. Included are applications of nano-scale devices and systems and the resulting material chemical, physical, biological or multiple-property requirements. Use of diffusion barriers, encapsulation, electromigration control, corrosion control, wettability, stress control and adhesion are studied.

MFT-216 Characterization, Testing of Nanotechnology Structures and Materials

3 credits/2 lecture & 2 lab hours

Prerequisites: *MFT-211* & *MFT-212*Corequisite: *MFT-215*

This course examines a variety of measurements and techniques essential for controlling micro and nanofabrication processes. Monitoring techniques such as residual gas analysis, optical emission spectroscopy and end point detection are discussed. Characterization techniques such as scanning electron microscopy x-ray photoelectron spectroscopy, atomic probe methods, optical thin film measurements, and resistivity/conductivity measurements are introduced. Basic measurements for yield analysis and process control are stressed.

Medical Insurance Specialist (MIS)**MIS-100 Introduction to Medical Insurance**

4 credits/3 lecture & 3 lab hours

Prerequisite: Admission to Medical Insurance Specialist program

This course is designed to introduce the students to the medical insurance billing profession. Emphasis is placed on the knowledge and skills essential for completing insurance claim forms in the healthcare setting. Attention is also focused on the various medical insurance plans offered by today's healthcare payers.

MIS-101 Principles and Applications of Medical Insurance

3 credits/2 lecture & 2 lab hours

Prerequisite: *MDA-104*

This course provides a study of the medical insurance programs with emphasis on professional service and diagnostic coding. Topics include processing insurance claims, ICD-9-CM, CPT-4, diagnosis-related groups, preferred provider programs and computer-generated insurance claims. The principles of insurance and their applications to specific cases in a medical office and hospital billing department are examined.

MIS-102 Medical Coding for Insurance Billing

4 credits/3 lecture & 3 lab hours

Prerequisites: Acceptance into the MIS program & *ALH-140*

This course will present a comprehensive study of diagnostic and procedural medical coding for insurance billing utilizing the ICD and CPT classification systems. Application of these codes to medical insurance claims forms and their impact on proper reimbursement for healthcare services will be emphasized.

MIS-103 Medical Insurance Seminar

3 credits/3 class hours

Prerequisite: *MIS-100*

This course is designed to study the legal aspects of the medical office. Emphasis is placed on legal issues involving legal forms of consent, informed consent, DNR, living wills, the Red Flags Rule, HIPAA and OSHA regulations. Case studies involving false claims, Medicare/Medicaid regulations and compliance issues are analyzed. The topic of job readiness is covered including resume writing and interviewing techniques.

MIS-105 Medical Insurance Applications

2 credits/2 class hours

Prerequisite: *MIS-100*

This course is designed to study the post-adjudication claims process including patient liability issues, bankruptcy and estate claims. Emphasis is placed on knowledge and skills essential to problem solving rejected or pending medical claims, false claims and Medicare/Medicaid regulation compliance. Case studies involving the Explanation of Benefits Summary are analyzed. Credit and collection laws as they pertain to patient liability situations will also be addressed.

Microcomputer Electronics Technology (MIT)**MIT-103 Fundamentals of Microprocessors**

3 credits/2 lecture & 2 lab hours

This course introduces students to the assembly language used to control devices. Both machine language monitors and symbolic assemblers are presented. Laboratory work involves digital input and output, control of lights, relays, motors and analog to digital converters.

MIT-104 Introduction to Microcontrollers

3 credits/2 lecture & 2 lab hours

Prerequisite: *EET-103*

This course introduces students to embedded systems, their interfaces and how they apply to business practices. Students will troubleshoot for problems caused by microcontrollers and circuits in a hands-on lab environment. The course covers the architecture of the microcontroller, serial communications, simple process control and Input/Output (I/O) ports to a circuit. The I/O may include Analog-to digital (A/D) converters, sensors, Light Emitting Diodes (LEDs) and motors.

MIT-107 Electronic Fabrication

3 credits/2 lecture & 2 lab hours

This course prepares students to develop correct soldering practices, including placement, identification and solderability. The course will provide information on through-hole, as well as surface-mount soldering. Students will complete a through-hole project.

MIT-110 Electrical Engineering Circuits 1

4 credits/3 lecture & 2 lab hours

Prerequisite: *EET-103* or equivalent

This course prepares students in electrical circuits analysis. Emphasis is on direct current systems. Topics include Kirchoff's laws, Thevenin's theorem, Norton's theorem, network equations, induction, capacitance and resistor-capacitor (RC) transients.

MIT-208 Digital Electronics

3 credits/2 lecture & 2 lab hours

Prerequisite: *EET-103*

This course will present the simple definition of truth tables for AND and OR logic types. The course proceeds through more complicated logic elements such as flip flops, adders, counters, random access and field programmable memories.

MIT-210 Electrical Engineering Circuits 2
4 credits/3 lecture & 2 lab hours
Prerequisite: *MIT-110*

This course is a continuation of basic circuit analysis. Emphasis is on alternating current circuits. Topics include effective values, power factors, resistor capacitor (RC) resistor inductor circuits (RL), inductance and capacitance (RLC) circuit filters, multisource mesh and nodal analysis, transformer action, resonance and inductance. Computer analysis of circuit problems is covered.

MIT-240 Scientific and Industrial Instrumentation
3 credits/2 lecture & 2 lab hours
Prerequisites: *MIT-208* & *PHY-113*

This course presents techniques of measuring physical quantities through electronic transducers. Electronic circuits used to convert these signals to appropriate voltages are presented. Techniques for these electronic signals to control physical systems through both analog and digital computers are covered.

Medical Laboratory Assistant (MLA)

MLA-101 Laboratory Specimen Processing
4 credits/3 lecture & 3 lab hours
Prerequisites: *ALH-140*, *ENG-100* or *ENG-101*, *BIO-103* & *MLT-111*
Corequisites: *PHB-101* & *PHB-111*

This course encompasses general specimen processing. Skills included are safety, routine laboratory tests, laboratory information systems, specimen accessioning, communication, distribution to in-house and reference laboratories and vital signs.

MLA-102 Medical Laboratory Assistant Externship
4 credits/8 hours per day/5 days a week for 6 weeks
Prerequisite: Minimum of C grade in all program courses

This course offers practical experience in an affiliated clinical laboratory. Students perform routine specimen processing, accessioning and distribution. Laboratory information systems, communication and skills associated with phlebotomy and vital signs are included. This course is graded on a pass/fail basis.

Medical Laboratory Technology (MLT)

MLT-111 Clinical Laboratory Techniques 1
4 credits/3 lecture & 3 lab hours
Prerequisite: Acceptance into Medical Laboratory Technician (MLT) program.

This course is an orientation to general laboratory practice, laboratory safety, venipuncture, capillary puncture and clinical urinalysis.

MLT-112 Clinical Laboratory Techniques 2
4 credits/3 lecture & 3 lab hours
Prerequisite: *MLT-111*

This course is an introduction to immunology (serology). Emphasis will be on normal and abnormal immune responses and how they are manifested in laboratory tests.

MLT-151 Clinical Microbiology 1
4 credits/3 lecture & 3 lab hours
Prerequisite: *MLT-111*

This course focuses on the identification of parasites and fungi (pathogens and common non-pathogens associated with human disease).

MLT-152 Clinical Microbiology 2
5 credits/3 lecture & 6 lab hours
Prerequisite: *MLT-151*

This course focuses on the isolation and identification of microorganisms causing disease (pathogens). Topics include microbes, specimen collection, normal flora, characterization of specific pathogens, biochemical tests, susceptibility testing and determining the pathogenicity of organisms.

MLT-161 Clinical Instrumentation and Clinical Chemistry 1
4 credits/3 lecture & 3 lab hours
Prerequisite: Acceptance into Medical Laboratory Technician (MLT) program

This course covers quality control in the laboratory, the pathophysiology of disease of major body systems, body fluids, organic derivatives and clinical chemistry techniques.

MLT-162 Clinical Chemistry 2
4 credits/3 lecture & 3 lab hours
Prerequisite: *MLT-111* & *MLT-161*

This course is a continuation of Clinical Instrumentation and Clinical Chemistry 1 (MLT-161). Topics include electrophoresis, errors in biochemical metabolism with an emphasis on clinical assays for proteins, carbohydrates, lipids and toxins.

MLT-220 Clinical Hematology
4 credits/3 lecture & 3 lab hours
Prerequisite: *MLT-111*

This course focuses on the formation and maturation of blood cells, hemostasis, laboratory hematologic techniques and hematologic disorders.

MLT-225 Clinical Immunoematology
4 credits/3 lecture & 3 lab hours
Prerequisite: *MLT-112*

This course covers transfusion medicine. Topics include the human blood groups, compatibility testing and blood component therapy.

MLT-250 Clinical Laboratory Seminar
3 credits/3 class hours
Prerequisite: Grade C or better in all MLT courses
Corequisite: *MLT-251*

This course reviews medical laboratory professionalism, diversity, successful employment and current laboratory trends. The student receives a comprehensive certification board exam review.

MLT-251 Clinical Laboratory Externship
12 credits/8 clinical hours per day/4.5 days a week for 17 weeks
Prerequisite: Minimum of C grade in all program courses
Corequisite: *MLT-250*

This course offers practical experience in an affiliated laboratory. Students rotate through the laboratory sections and observe and perform routine lab test. This course is graded on a pass/fail basis.

Multimedia Communications (MMC)

MMC-111 Developing Images for the Web
3 credits/2 lecture & 2 lab hours
Corequisite: *CIT-125*

This course is an enhancement of the Web development course with focus on graphic images used in websites. Students will create and enhance digital images using appropriate software for translating site goals into compelling Web design. Topics include JavaScript, Photoshop, Dreamweaver, combining images, adjusting image sizes, non-destructive editing, preparing images for Web and video, adding text, using layers and creating effects using filters.

MMC-112 Audio and Video for the Web

3 credits/3 lecture hours

Using HTML5, CSS and JavaScript, students will learn as they build increasingly comprehensive media players and solutions. By learning about the underlying technology, students will recognize and utilize the full potential of media tools and time-saving strategies. Students will create cross-browser HTML5 based audio and video solutions.

MMC-150 Programming With JavaScript, JQuery and ActionScript

3 credits/3 lecture hours

This course introduces students to web application programming with JavaScript and JQuery library. Students create, test and debug scripts that include object methods and properties, data types, data selections and repetition structures, as well as window, form, frame and document objects.

MMC-160 Game Design and Simulation 1

3 credits/3 lecture hours

Prerequisite: Eligibility for *ENG-100*Corequisite: *CIT-125*

This course will introduce the concepts and system of game design, including character, aesthetics, story, technology, structured conflict, resolution and outcome. Students will work in teams to brainstorm and prototype a game concept utilizing the gaming software GameMaker.

MMC-170 Game Design and Simulation 2

3 credits/3 lecture hours

Prerequisite: *MMC-160*Corequisite: *MMC-112*

This course will teach the utilization of software to apply basic animation motion for game creation and simulation. Students will explore the animation capabilities of game software using the gaming software Blender. Movement of objects in concert with audio, external stimulus and user interaction will be studied.

MMC-225 Content Management Systems

3 credits/3 lecture hours

Prerequisite: *CIT-125*

This course is designed to teach content management systems (CMS) for the publication of web content to web sites. Topics include individual user accounts, administration menus, RSS feeds, customizable layout, flexible account privileges, logging in, blogging systems, creating online forums and modules. Upon completion, students will register and maintain individual user accounts and create a business website or an interactive community website.

MMC-228 Instructional Design

3 credits/2 lecture & 2 lab hours

Prerequisite: *CIT-125*

This course will teach students to apply the various techniques and elements of multimedia production into presentation formats. Computer-Based Training (CBT) and Web-Based Training (WBT) both rely heavily on multimedia elements for their effectiveness.

MMC-230 Portfolio Preparation

1 credit/1 lecture hour

This course is designed to help students prepare a portfolio for their job search. Students will examine several approaches to presenting their work to potential employers.

MMC-231 Web Commerce

3 credits/2 lecture & 2 lab hours

Prerequisites: *CIT-125*

This course is designed to teach programming skills to create and maintain e-commerce websites utilizing content management systems (CMS), planning site layout and navigation, organizing content, creating sites and linking to databases. Additionally, students will test interactivity and usability, market content and utilize search engine optimization (SEO) for speed and accessibility. Topics include dynamic web pages, server-side development with software such as PHP, MySQL, and relevant e-commerce development issues.

MMC-250 Three-Dimensional Design for Gaming

3 credits/3 lecture hours

Prerequisite: *ART-114*

In this course, students will create three-dimensional (3D) objects and complex 3D models for animation. Students will utilize gaming software including Blender and Multimedia Fusion in their 3D designs.

MMC-260 Maya for Gaming 1

3 credits/3 lecture hours

Prerequisite: *MMC-170*

In this course, students will learn about the Maya user interface, including working with lighting, shading and polygon modeling. Additionally, students will work with the UV Texture Editor and apply Photoshop to the Maya software.

MMC-270 Maya for Gaming 2

3 credits/3 lecture hours

Prerequisite: *MMC-260*

This course will cover additional techniques in modeling, materials, lighting, animating and rendering utilizing Maya. Students will learn the process of completing an entire 3D animation team project and learn the techniques of creating photorealistic renderings.

Maintenance Mechanics Technology (MMT)**MMT-130 Job Safety and First Aid**

1 credit/1 lecture hour

This course covers the business aspects of safety and health including workers' compensation laws, the Occupational Safety and Health Act, job safety standards, and employer and employee rights and responsibilities. The second half of the course introduces first aid, cardio pulmonary resuscitation (CPR) and use of an automated external defibrillator (AED), with instruction in treating wounds, shock, respiratory emergencies, artificial respiration, cardiac arrest, burns and sudden illness.

MMT-131 Introduction to OSHA and Industrial Hygiene

1 credit/1 class hour

This course serves as an introduction to Occupational Safety and Health Administration (OSHA) and industrial hygiene concepts. The topics covered are those required under OSHA's Outreach Training Program Guidelines. Upon completion of this course, students will receive an OSHA 10 General Industry training completion card.

MMT-208 Backflow Tester Certification

3 credits/3 class hours

This backflow tester certification course is designed to provide students with an opportunity to observe and test backflow prevention devices under laboratory conditions. Lectures will cover the history of backflow control, the principles and methods of correction and the types of cross connection which can occur. This course is based on American Society of Sanitary Engineers (ASSE) international standards.

Magnetic Resonance Imaging (MRI)

MRI-201 Magnetic Resonance Imaging Instrumentation and Equipment Procedures

4 credits/4 lecture hours

Prerequisite: Acceptance into MRI program

Corequisites: *MRI-202* & *MRI-203*

This is a course in medical magnetic imaging for certified technologists. Included are a history of magnetic imaging in radiology sciences, advanced principles of image reconstruction for human anatomy utilizing radiographic magnetic resonance techniques, essential elements of medical magnet computer systems, patient positioning for scanning protocols and data acquisition systematic procedures.

MRI-202 Cross-sectional Anatomy for Magnetic Resonance Imaging

2 credits/2 lecture hours

Prerequisite: Acceptance into MRI program

Corequisites: *MRI-201* & *MRI-203*

This is a course in magnetic resonance cross-sectional anatomy for certified technologists utilizing medical cross-sectional radiographs to identify cranial, thoracic, abdominal and musculoskeletal systems. Each system will be demonstrated in a transverse, sagittal, coronal and oblique magnetic resonance image.

MRI-203 Patient Care and Magnetic Imaging Safety

2 credits/2 lecture hours

Prerequisite: Acceptance into MRI program

Corequisites: *MRI-201* & *MRI-202*

This is a course in magnetic radiographic patient care and imaging safety for certified technologists. Included are the principles of magnetic imaging safety for the patient, imaging technologist and medical team. Production and control of the magnetic field for scanning procedures and equipment techniques are studied.

MRI-204 Clinical Applications of Magnetic Resonance Imaging

4 credits/240 clinical hours

Prerequisites: *MRI-201*, *MRI-202* & *MRI-203*

Corequisite: Clinical agency assignment

Assigned to affiliate agencies, certified technologists perform all routine and advanced magnetic resonance procedures under the supervision of a Radiologist and certified MRI scan technologist. The student gains experience in imaging techniques, quality assurance, axial, coronal and sagittal sectional procedures. Clinical education assignments are made by faculty and students are responsible for their own transportation, parking and meals. This course is graded on a pass/fail basis.

Music Theory & Performance (MUS)

MUS-101 Introduction to Music

3 credits/3 class hours



This course surveys the form, style and basic structure of art, world and popular music. It is designed to enhance students' appreciation and understanding of music by focusing on influential composers and their compositions. Lectures highlight the characteristics, history and performance practice of many genres of music.

MUS-105 Applied Music 1, 2, 3, 4

1 credit/0.5 studio hour

MUS-106 Prerequisite: *MUS-105*

MUS-205 Prerequisite: *MUS-106*

MUS-206 Prerequisite: *MUS-205*

This course consists of 15 30-minute private music lessons. Students choose from one of three areas of study: vocal, instrumental or composition. Lessons focus on music reading; repertoire development; and vocal, instrumental or composition technique. Applied Music 2, 3 and 4 build upon the skills and techniques developed in the previous Applied Music course.

MUS-109 College Choir 1, 2, 3, 4

2 credits/3 studio hours

MUS-110 Prerequisite: *MUS-109*

MUS-209 Prerequisite: *MUS-110*

MUS-210 Prerequisite: *MUS-209*

This course involves the development of choral repertoire and performance technique. It covers a diversity of styles from traditional and contemporary choral literature. Classroom activities focus on music reading, vocal production and ensemble technique as well as the application of self-evaluation and critical listening skills. College Choir 2, 3 and 4 build upon the skills and techniques developed in the previous College Choir course.

MUS-113 Show Choir 1, 2, 3, 4

2 credits/3 studio hours

MUS-114 Prerequisite: *MUS-113*

MUS-213 Prerequisite: *MUS-114*

MUS-214 Prerequisite: *MUS-213*

This course comprises the formation of a musical theatre ensemble. It addresses vocal and dance techniques common in musical theatre repertoire. Classroom activities include exercises designed to develop students' vocal and dance skills; song interpretation; solo and ensemble rehearsals; and staged performances. Show Choir 2, 3 and 4 build upon the skills and techniques developed in the previous Show Choir course.

MUS-115 Jazz Ensemble 1, 2, 3, 4

2 credits/3 studio hours

MUS-116 Prerequisite: *MUS-115*

MUS-215 Prerequisite: *MUS-116*

MUS-216 Prerequisite: *MUS-215*

This course comprises the formation of a jazz band. It covers a diversity of jazz styles including Latin, blues and swing. Coursework emphasizes music reading, improvisation, performance practice and ensemble technique. Jazz Ensemble 2, 3 and 4 build upon the skills and techniques developed in the previous Jazz Ensemble course.

MUS-119 Music Technology

3 credits/1.5 lecture & 1.5 lab hours

This course introduces students to the technologies used in music production. It deals with the computer applications and the outboard equipment used by professional audio engineers to create multimedia files. The software used in this class includes programs for musical score writing and for sound wave editing. Lecture hours are devoted to basic music theory and to the physics of sound; lab hours are devoted to producing multimedia projects, such as musical scores and audio recordings.

MUS-121 History of Music 1

3 credits/3 class hours

This course is an in-depth study of Western art music from antiquity until 1750. It traces the development of music's aural traditions and notational systems by exploring composers and their compositions. Lectures cover musical form, practice and style through analytical listening and source study. Contemporaneous happenings in world history are examined for context and scope.

MUS-122 History of Music 2

3 credits/3 class hours

This course is an in-depth study of Western art music from 1750 until present day. The materials covered by this class are examined through source study, analytical listening and research. Lectures cover musical form, practice and style, as well as contemporaneous happenings in world history.

MUS-126 Instrumental/Vocal Ensemble 1, 2, 3, 4

2 credits/3 studio hours

MUS-127 Prerequisite: *MUS-126***MUS-226** Prerequisite: *MUS-127***MUS-227** Prerequisite: *MUS-226*

This course entails the development of ensemble repertoire and performance technique. It covers a diversity of styles and instrumental configurations. Classroom activities focus on music reading, improvisation and ensemble technique as well as the application of self-evaluation and critical listening skills. Instrumental/Vocal Ensemble 2, 3 and 4 build upon the skills and techniques developed in the previous Instrumental/Vocal Ensemble course.

MUS-128 Music Theory and Analysis 1

3 Credits/3 class hours

Corequisite: *MUS-137* (recommended)

This is an introductory course designed to develop students' written music theory skills. It covers music notation, scales, keys, intervals, triads, rhythm and meter. Coursework includes application of these concepts through analysis of music repertoire.

MUS-129 Music Theory and Analysis 2

3 credits/3 class hours

Prerequisite: *MUS-128*Corequisite: *MUS-138* (recommended)

This course builds upon the written music theory skills developed in Music Theory and Analysis 1. It covers the fundamentals of diatonic harmony through part writing and analysis of music from the Baroque, Classical and Romantic eras. The relationship between harmonic and melodic content is emphasized.

MUS-130 Class Voice 1

3 credits/3 studio hours

This is an introductory course designed to develop students' singing skills. It addresses basic techniques of vocal production with a focus on the Bel Canto technique of singing. Lectures and activities include exercises designed to develop students' vocal skills; solo and ensemble rehearsals; and vocal performances.

MUS-131 Class Voice 2

3 credits/3 studio hours

Prerequisite: *MUS-130*

This course builds on the singing skills developed in Class Voice 1. Students rehearse and perform more advanced vocal repertoire from the Western art tradition as they refine their application of the Bel Canto technique of singing. In addition, this course addresses vocal techniques common in musical theatre. Lectures and activities include more advanced exercises designed to develop students' vocal skills; solo and ensemble rehearsals; and vocal performances representing both classical and musical theatre styles.

MUS-137 Musicianship Skills 1

2 credits/2 class hours

Corequisite: *MUS-128* (recommended)

This is an introductory course designed to develop students' aural music theory skills. It includes identification of scales, intervals, triads and rhythmic patterns; sight signing in treble and bass clefs; and melodic and rhythmic dictation. The course material covers major and minor modes, as well as rhythm patterns in simple meters.

MUS-138 Musicianship Skills 2

2 credits/2 class hours

Prerequisite: *MUS-137*Corequisite: *MUS-129* (recommended)

This course builds upon the aural music theory skills developed in Musicianship Skills 1. It includes identification of intervals, triads and seventh chords; sight singing in treble, bass, alto and tenor clefs; and melodic and rhythmic dictation in simple and compound meters. The course material covers major and minor modes, as well as simple and compound meters.

MUS-140 Class Guitar 1

3 credits/3 studio hours

This course is an introduction to the guitar for beginners. It covers fundamental guitar skills such as music reading, accompaniment and repertoire development. Coursework integrates general music theory with basic fretboard technique.

MUS-141 Class Guitar 2

3 credits/3 studio hours

Prerequisite: *MUS-140*

This course builds upon the skills covered in Class Guitar 1. Students explore various methods for lead and rhythm guitar. Coursework integrates general music theory with basic fretboard technique.

MUS-160 American Popular Music

3 credits/3 class hours

This course surveys American popular music from 19th-century folk songs to the present day. It addresses the forms, styles, performance practices and socio-cultural aspects of various genres of American popular music. Lectures are designed to synthesize popular music with American culture through analytical listening and source study.

MUS-205 and MUS-206 (*see MUS-105*)**MUS-213 & MUS-214** (*see MUS-113*)**MUS-215 & MUS-216** (*see MUS-115*)**MUS-221 Class Piano 1**

3 credits/3 studio hours

This course is an introduction to the piano for beginners. It covers fundamental concepts and skills of piano playing including playing technique, music reading, scales, chords and repertoire development. Coursework integrates general music theory with basic piano keyboard technique.

MUS-222 Class Piano 2

3 credits/3 studio hours

Prerequisite: *MUS-221*

This course builds upon the piano skills and concepts covered in Class Piano 1. It covers major and minor scales, chord inversions, dominant seventh chords and cadences. Coursework integrates these music theory concepts with piano keyboard technique.

MUS-223 Class Piano 3

3 credits/3 studio hours

Prerequisite: *MUS-222*

This course builds upon the piano skills and concepts covered in Class Piano 2. It covers additional types of minor scales, seventh chords and transposition. Coursework integrates these music theory concepts with piano keyboard technique.

MUS-224 Class Piano 4

3 credits/3 studio hours

Prerequisite: *MUS-223*

This course builds upon the piano skills and concepts covered in Class Piano 3. It covers diatonic modes, extended chords, melody harmonization and improvisation. Coursework integrates these music theory concepts with piano keyboard technique.

MUS-226 and MUS-227 (see *MUS-126*)**MUS-228 Music Theory and Analysis 3**

3 credits/3 class hours

Prerequisite: *MUS-129*Corequisite: *MUS-237* (recommended)

This course builds upon the written music theory skills developed in Music Theory and Analysis 2. It covers chromatic elements found in music from the common practice period of Western music history. Coursework includes the study of tonicizations, modulations, sequences, modal mixture and other chromatic chords.

MUS-229 Music Theory and Analysis 4

3 credits/3 class hours

Prerequisite: *MUS-228*Corequisite: *MUS-238* (recommended)

This course builds upon the written music theory skills developed in Music Theory and Analysis 3. It covers a variety of techniques for analyzing music from the Baroque era to the present. The motives, phrases, themes and large-scale structures of compositions are analyzed with a focus on how all of these elements relate to each other and to the composition as a whole.

MUS-230 Class Voice 3

3 credits/3 studio hours

Prerequisite: *MUS-131*

This course builds on the singing skills developed in Class Voice 2. Students further refine their vocal techniques through rehearsal and performance of classical and musical theatre songs. In addition, this course addresses vocal techniques from various other styles, including jazz, pop, folk and country. Lectures and activities include exercises designed to address vocal techniques specific to particular musical styles; solo and ensemble rehearsals; and vocal performances representing various musical genres.

MUS-231 Class Voice 4

3 credits/3 studio hours

Prerequisite: *MUS-230*

This course builds on the singing skills developed in Class Voice 3. Students further refine their vocal techniques through rehearsal and performance of songs representing various musical styles, including classical, musical theatre, jazz, pop, folk and country. In addition, this course addresses issues pertaining to repertoire selection, and the differences between solo and ensemble singing. Lectures and activities include exercises designed to address vocal techniques specific to particular solo and ensemble settings; student selection of songs; and rehearsals and performances of solo and ensemble repertoire representing various musical genres.

MUS-237 Musicianship Skills 3

2 credits/2 class hours

Prerequisite: *MUS-138*Corequisite: *MUS-228* (recommended)

This course builds upon the aural music theory skills developed in Musicianship Skills 2. It includes sight singing and dictation of melodies containing chromatic elements; rhythmic dictation in simple and compound meters; and two-part dictation. The course material covers tonicizations, modulations, sequences, modal mixture and other chromatic chords.

MUS-238 Musicianship Skills 4

2 credits/2 class hours

Prerequisite: *MUS-237*Corequisite: *MUS-229* (recommended)

This course builds upon the aural music theory skills developed in Musicianship Skills 3. It includes sight singing and dictation exercises that contain chromatic elements, diatonic modes, non-diatonic scales and more advanced rhythmic techniques such as syncopation, mixed meter and borrowed division of the beat. Aural identification of large scale musical forms is included as well.

MUS-253 History of Jazz

3 credits/3 class hours

This class surveys Jazz from its inception until present day. Topics include composers, performance practice and instrumental technique. Lectures synthesize jazz history with American culture through source study, analytical listening and research.

Nuclear Medicine Technology (NMT)**NMT-101 Introduction to Nuclear Medicine Technology**

2 credits/2 class hours

This is an overview of the nuclear medicine technology career and curriculum.

NMT-102 Clinical Nuclear Medicine Technology 1

3 credits/3 lecture hours

Prerequisites: *BIO-161* & *NMT-101*Corequisite: *BIO-162*

This course is the first of a two-semester course designed to follow a didactic approach to clinical nuclear medicine technology. A considerable number of class hours are allotted to the review of concepts in anatomy, physiology, pathology and radiopharmaceuticals as they relate to the clinical procedures outlined in the main topics.

NMT-150 Applied Nuclear Medicine Technology 1

4 credits/4 class hours

This is a course in types of radiation and their effects on the human body. The student studies the amounts of radiation from various sources and receives safety instructions.

NMT-151 Applied Nuclear Medicine Technology 2

5 credits/4 lecture & 3 lab hours

Applied Nuclear Medicine Technology 2 is designed to follow a didactic approach to clinical nuclear medicine technology. A considerable number of class hours are allotted to the review of concepts in anatomy, physiology, pathology and radiopharmaceuticals as they relate to the clinical procedures outlined in the main topics. This course will provide the student with practical knowledge essential to the acquisition of skills in performing nuclear medicine examinations.

NMT-160 Introduction to Applied Nuclear Medicine Practicum

2 credits/8 clinical hours

This course offers practical experience in the techniques of nuclear medicine technology in three clinical practicums at a hospital nuclear medicine facility. During the three practicums, the student spends several days a week in a hospital observing the ongoing examinations and procedures at a nuclear medicine facility.

NMT-161 Applied Nuclear Medicine Practicum

3 credits/24 clinical hours

This course offers practical experience with the fundamental techniques of nuclear medicine technology. The second clinical practicum provides more experience in the ongoing activities of a nuclear medicine facility.

NMT-201 Clinical Nuclear Medicine Technology 2

3 credits/3 lecture & 64 clinical hours

Prerequisites: *BIO-161*, *BIO-162* & *NMT-102*

This course is the second of a two-semester course designed to follow a didactic approach to clinical nuclear medicine technology & also to provide the student with practical knowledge essential to the acquisition of skills in performing nuclear medicine examination.

NMT-202 Nuclear Medicine Clinical Practice 1
3 credits/24 clinical hours

This is an introduction to the clinical aspects of nuclear medicine technology. The student learns the procedures and instrumentation of a nuclear medicine facility.

NMT-203 Nuclear Medicine Laboratory Procedures
2 credits/2 lecture & 3 lab hours
Prerequisites: *NMT-102, NMT-151 & NMT-201*

This course presents the fundamental concepts of radiopharmaceutical production including basic radiochemistry, including pyrogenicity and sterility testing, quality control procedures, radionuclide production and generator systems, mechanisms of radiopharmaceutical localization and design.

NMT-204 Nuclear Medical Clinical Practice 2
4 credits/32 clinical hours

During this practicum, the student spends more time in the hospital nuclear medicine unit.

NMT-205 Nuclear Medicine Externship
5 credits/40 clinical hours

The student performs medical examinations while increasing skills and self-confidence. The student works full-time in the nuclear medicine facility.

NMT-206 Nuclear Medicine Instrumentation
3 credits/3 lecture hours

This is a course that develops greater skills in operating, calibrating and performing routine maintenance quality control on gamma cameras, well counters, gas-filled detectors and PET cameras.

NMT-207 Nuclear Medicine Seminar
2 credits/2 class hours

This course presents current literature and trends in nuclear medicine methods and equipment. The course includes guest lecturers, field trips and student presentations on selected topics.

NMT-270 Fundamentals of Molecular Imaging with PET
3 credits/3 lecture hours

This course will introduce the student to Positron Emission Tomography Imaging. This modality produces high energy, 3-D computer-reconstructed images measuring and determining the function or physiology in a specific organ, tumor or other metabolically active site.

Nursing (NSG)

NSG-104 Drug Calculations
1 credit/1 class hour

This course provides the nursing student with the information necessary to correctly interpret medication orders and medication labels and to correctly solve drug calculations using the dimensional analysis method.

Nursing (NUR)

NUR-110 Foundations and Health Promotion Concepts for Nursing Practice
6 credits/2.5 lecture, 2.5 lab & 8 clinical hours
Prerequisite: Admission to the Nursing program

This foundational course introduces the concept-based curriculum that builds upon safe and effective care, health promotion and maintenance and psychosocial and physiological integrity. The course includes didactic instruction as well as simulated laboratory and clinical experiences.

NUR-120 Health Assessment Concepts for Nursing Practice
2 credits/1 lecture & 3 lab hours
Prerequisite: Admission to the Nursing program

This course emphasizes holistic assessment of an adult including head-to-toe assessment skills, interviewing techniques and diagnostic data analysis through didactic instruction and simulated lab experiences.

NUR-130 Basic Health Concepts for Nursing Practice
6 credits/2.5 lecture, 2.5 lab & 8 clinical hours
Prerequisites: *BIO-161, MAT-106 or MAT-108, NUR-110, NUR-120, PSY-101*

This course is designed to build upon the foundational spheres of the individual, healthcare delivery systems and nursing. The emphasis is on caring for the older adult client during health and illness through didactic, simulated laboratory and clinical experiences.

NUR-140 Evidence Based Nursing Drug Therapy
3 credits/3 lecture hours
Prerequisite: Admission to the Nursing program or permission of the instructor

This didactic course covers the nurse's role in safe medication drug administration. It utilizes an evidence based approach to patient teaching, assessment of adverse effects, evaluation of medication effectiveness and avoidance of medication errors.

NUR-200 Licensed Practical Nurse (LPN) Transition Course
3 credits/13 lecture, 2 lab & 4 clinical hours
Prerequisite: Current licensure as a licensed practical nurse in the Commonwealth of Pennsylvania. Satisfactory completion of competence exam in evidence based drug therapy. All required educational courses up to the level of entry with a final grade of C or better in the physical/natural and behavioral sciences.

This course is designed for the licensed practical nurse. It provides theoretical knowledge and practical experience which assists the student in making the transition from the practical to the professional nurse role. This course emphasizes clinical judgment and caring, health promotion and illness prevention and the role of the professional nurse. Principles of communication and use of health care technology will also be addressed.

NUR-210 Professional Nursing Issues
2 credits/2 lecture hours
Prerequisites: *NUR-130 & NUR-140*

This didactic course explores concepts of professional behaviors and issues that impact nursing in the current and future health care delivery system. The emphasis is on group learning through discussion of legal and ethical issues, professional responsibilities and accountability and evidence based practice research.

NUR-220 Adult Health Concepts for Nursing Practice
4 credits/3.5 lecture, 1.5 lab & 12 clinical hours
Prerequisites: *BIO-162, BIO-175, NUR-130 & NUR-140*

This course is comprised of two major components. The first component addresses the psychosocial concepts of patients experiencing stressful events and acute and chronic mental illness. The second component addresses care of patients with cancer and other cellular alterations. Both components include didactic, simulation laboratory and clinical experiences.

NUR-230 Family Health Concepts for Nursing Practice
4 credits/5 lecture, 2 lab & 8 clinical hours
Prerequisites: *BIO-162, BIO-175, NUR-130 & NUR-140*

This course covers care practices for women, infants, children and adolescents. The course explores the expanding family during health and illness through didactic, simulated laboratory and clinical experiences.

NUR-240 Complex Health Concepts for Nursing Practice (10 weeks)

7 credits/4.5 lecture, 2 lab & 16 clinical hours

Prerequisites: *NUR-220 & NUR-230*

This course focuses on caring for adults with complex, acute and chronic health problems through didactic instruction, simulated laboratory and clinical experiences.

NUR-250 Leadership and Management Concepts in Healthcare Delivery (5 weeks)

3 credits/24 clinical hours

Prerequisites: *NUR-240*

This capstone course is designed to integrate previous concepts through an in-depth clinical experience. The emphasis is placed on the transition from the student role to that of the professional nurse. The focus is on coordination and supervision of patient care utilizing leadership and management concepts. This course includes an NCLEX review that requires an additional fee.

Occupational Therapy Assistant (OTA)**OTA-101 Introduction to Occupational Therapy**

5 credits/3 lecture & 4 lab hours

Prerequisites: Acceptance into the OTA program

This is an introduction to occupational therapy and the role of the occupational therapy assistant in health care. Topics include history and philosophy, theories of practice, definition of the profession, disability groups treated, treatment settings, terminology used and modalities employed.

OTA-102 Occupational Therapy in Pediatrics

5 credits/3 lecture & 4 lab hours

Prerequisites: *OTA-101 & BIO-161*Corequisite: *OTA-112*

This is an introduction to pathological and behavioral conditions which inhibit normal development, current diagnostic and treatment methods used in clinical situations and the role that occupational therapy plays in this process.

OTA-112 Occupational Therapy Fieldwork 1 Pediatrics

1 credit/8 clinical hours

Prerequisite: *OTA-101*Corequisite: *OTA-102*

This is a course to provide experiences in directed observation and participation in pediatric settings. This course is graded on a pass/fail basis.

OTA-201 Occupational Therapy in Physical Disabilities.

5 credits/3 lecture & 4 lab hours

Prerequisites: *BIO-162, OTA-102 & PSY-108*Corequisite: *OTA-211*

This course is an introduction to the etiology, diagnoses, clinical conditions and methods of treatment used with people who have suffered physical disability. Emphasis is on methods of evaluation and treatment used in occupational therapy and on assisting the physically impaired to become as independent as possible within their own environment.

OTA-202 Occupational Therapy in Mental Health

5 credits/3 lecture & 4 lab hours

Prerequisites: *BIO-162, OTA-102, PSY-108 & PSY-208*Corequisite: *OTA-212*

This course is an introduction to the role of occupational therapy in mental health settings. Emphasis is on the use of goal-directed activity in the evaluation, remediation and prevention of psycho-social dysfunction.

OTA-203 Occupational Therapy in Aging Populations

3 credits/3 class hours

Prerequisites: *BIO-162, OTA-102, OTA-201 & PSY-108*Corequisite: *OTA-213*

This course is an overview of the aging process, emphasizing occupational therapy evaluation and treatment of the physical and psycho-social function of older populations.

OTA-204 Occupational Therapy/Professional Issues

2 credits/2 class hours

Prerequisite: *OTA-102 & OTA-201*Corequisites: *OTA-202 & OTA-203*

This is an introduction to the professional issues and concerns of occupational therapy. Topics include organization of healthcare institutions, community healthcare agencies, ethics, licensure, malpractice and continuing education.

OTA-205 Contemporary Practice Issues in Occupational Therapy

1 credit/1 class hour

Prerequisites: *OTA-101 & OTA-102* or current certification as an OTA

This course is designed as an elective to enhance the OTA's knowledge of specialty and/or innovative areas of practice in occupational therapy. The role of the occupational therapy assistant will be emphasized.

OTA-206 Contemporary Practice Issues in Occupational Therapy

2 credits/2 class hours

Prerequisites: *OTA-101 & OTA-102* or current certification as an OTA

This course is designed as an elective to enhance the OTA's knowledge of specialty and/or innovative areas of practice in occupational therapy. The role of the occupational therapy assistant will be emphasized.

OTA-211 Occupational Therapy Fieldwork 1 Physical Disabilities

1 credit/8 clinical hours

Prerequisites: *BIO-162, OTA-102 & PSY-108*Corequisite: *OTA-201*

This course provides experiences in directed observation and participation in physical disabilities settings. This course is graded on a pass/fail basis.

OTA-212 Occupational Therapy Fieldwork 1/Mental Health

1 credit/8 clinical hours

Prerequisites: *BIO-162, OTA-102, OTA-201 & PSY-108*Corequisite: *OTA-202*

This course provides experiences in directed observation and participation in mental health settings. This course is graded on a pass/fail basis.

OTA-213 Occupational Therapy Fieldwork 1 Aging Populations

1 credit/8 clinical hours

Prerequisites: *BIO-162, OTA-102 & PSY-108*Corequisite: *OTA-203*

This is a course to provide experiences in the use of therapeutic activity programs with aging populations. This course is graded on a pass/fail basis.

OTA-221 Occupational Therapy Fieldwork 2A**OTA-222 Occupational Therapy Fieldwork 2B**

5 credits/5 days per week for 8 weeks

Prerequisites: Success completion of all academic & Level 1 fieldwork requirements in the OTA program

These two eight-week, full-time fieldwork experience take place in diverse practice settings, supervised by an occupational therapy practitioner. The focus for these courses will be on professional development and competency of the occupational therapy assistant for practice. These courses are graded on a pass/fail basis. Occupational Therapy Fieldwork 2A must be successfully completed before beginning Occupational Therapy Fieldwork 2B.

Paralegal (PAL)

PAL-101 Legal Research and Writing 3 credits/3 class hours

This is an introduction to legal research. Students learn to use legal research tools such as indexes, digest, encyclopedias, treatises, annotated reports, restatements and law reviews. The West key number system and Shepperd's citations are taught. In addition, students learn how to do cite and proof checking of legal citations in briefs and other documents.

PAL-102 Paralegal Orientation 1 credit/1 class hours

This is a course designed to provide the paralegal students with an overview of the profession, curriculum, required competencies and ethics.

PAL-105 Family Law 3 credits/3 class hours

This is an analysis of the Pennsylvania Divorce Code and the problems of parties involved in separation and divorce. Emphasis is on preparation of divorce complaints, separation support and custody agreements.

PAL-111 Litigation 1 3 credits/3 class hours

This is an introduction to the differences between civil and criminal litigation with an emphasis on civil litigation. The student learns the rules which govern the lawsuit, the way legal principles are developed from prior court decisions and types of relief a court can give to a person. The student learns the variety of state and federal courts and their scope of jurisdiction. Emphasis is on the Federal Rules of Civil Procedure and the Federal Judicial Code.

PAL-112 Litigation 2 3 credits/3 class hours Prerequisite: *PAL-111*

This is an introduction to the broad outlines of law in negligence and other tort law, contract law, corporation and shareholder actions and property law.

PAL-121 Estates and Trusts 1 3 credits/3 class hours

This is an introduction to trusts set up during a person's lifetime and trusts and estates set up at a person's death.

PAL-122 Estates and Trusts 2 3 credits/3 class hours Prerequisite: *PAL-121*

Students learn to prepare and file papers for appointing a decedent's representative under a variety of local laws. Topics include discovery and valuing of estate assets, preparation of an inventory of assets and payment of a decedent's debts. Students keep records of estate transactions to ensure that all work is accurate and performed on time.

PAL-135 Employee Benefits 3 credits/3 class hours

This course introduces students to the blend of legal theory and practical legal skills that comprise employment law. The student will study the employment relationship from responding to advertisements for employment, interviewing, pre-employment testing, contracts of hire, employment compensation and benefits, employment evaluations through termination of employment. Issues of employment discrimination, equal pay, wage laws and the Family Medical Leave Act will be discussed.

PAL-201 Advanced Legal Research and Writing 3 credits/3 class hours Prerequisite: *PAL-101*

Students are trained to prepare research and analyze search in memoranda and briefs.

PAL-205 Consumer Protection Law 3 credits/3 lecture hours Prerequisite: *PAL-101*

This course trains legal assistants under the supervision of practicing attorneys to assist attorneys in helping firm clients overcome violations of federal and state consumer protection laws and the rules and regulations of federal and state administrative agencies designed to specifically protect consumers from illegal business practices.

PAL-209 Environmental Law 3 credits/3 lecture hours Prerequisite: *PAL-101*

This course is an introduction to the Environmental Amendment to the Pennsylvania Constitution and its administrative agency the Department of Environmental Resources and their interactions with federal law and the Environmental Protection Agency. The student will acquire a working knowledge of how regulations ensure compliance with laws that require clean streams, sewage facilities, wetlands, water resources, air pollution control, solid waste management, hazardous sites cleanup, storage tanks and other spill prevention, mining regulation, oil and gas regulation and protections from radiation and other hazardous situations.

Paramedic (PAM)

PAM-101 Foundations of Paramedic Practice Prerequisites: Acceptance into PAM program Corequisites: *BIO-115 or BIO-162, PAM-102 & PAM-112*

This course introduces the student to emergency medical care at the advanced life support level. Topics include the history of Emergency Medical Services (EMS) and the EMS system, the roles, responsibilities, professionalism and well-being of the EMS provider, and the medical, legal and ethical considerations specific to paramedic care. Course will also involve patient assessment, life-span development and EMS operations topics.

PAM-102 Airway Management and Pharmacology 5 credits/4 lecture & 2 lab hours Prerequisite: Acceptance into the PAM program Corequisites: *BIO-115 or BIO-162, PAM-101 & PAM-112*

This course provides instruction and lab application of techniques and equipment for airway management and pharmacologic interventions used by the paramedic. Students will learn to select and use various airway management equipment as required by the patient's conditions and general pharmacology principles and specific medications indicated by paramedic treatment protocols.

PAM-103 Cardiology and Pulmonology 5 credits/4 lecture & 2 lab hours Prerequisites: *BIO-115 or BIO-162, PAM-101, PAM-102 & PAM-112* Corequisites: *PAM-104, PAM-105 & PAM-116*

This course covers cardiology and pulmonology for the paramedic involving interpretation of cardiac rhythms, treatment protocols and assessment and intervention of respiratory deficiencies. Emphasis is placed on identifying EKG rhythms and using patient assessment information.

PAM-104 Shock and Trauma

4 Credits/3 lecture & 2 lab hours

Prerequisites: *BIO-115* or *BIO-162*, *PAM-101*, *PAM-102* & *PAM-112*Corequisites: *PAM-103*, *PAM-105* & *PAM-116*

This course covers shock conditions and traumatic injuries. Topics will include the various types of shock and pathophysiology of each, treatment interventions for shock and the various types of traumatic injuries a paramedic may encounter.

PAM-105 Special Patient Populations

3 credits/3 lecture hours

Prerequisites: *BIO-115* or *BIO-162*, *PAM-101*, *PAM-102* & *PAM-112*Corequisites: *PAM-103*, *PAM-104* & *PAM-116*

This course encompasses pathophysiology and knowledge of psychosocial needs to address special patient populations. Topics include treatment of pregnant, neonatal, pediatric, geriatric, developmentally delayed and other patient groups. Course will also address awareness of cultural diversity and delivery of culturally-competent care.

PAM-112 Paramedic Clinical 1

1 credit/8 clinical hours per week for eight weeks

Prerequisite: Acceptance into PAM program

Corequisites: *BIO-115* or *BIO-162*, *PAM-101* & *PAM-102*

This course is a clinical rotation which will involve hospital and field application of skills and techniques learned in the classroom. Students will complete required patient contacts and track interventions. Students are responsible for providing and paying for transportation to all clinical sites as well as all other related costs. This course is graded on a pass/fail basis.

PAM-116 Paramedic Clinical 2

2 credits/8 clinical hours per week

Prerequisites: *BIO-115* or *BIO-162*, *PAM-101*, *PAM-102* & *PAM-112*Corequisites: *PAM-103*, *PAM-104* & *PAM-105*

This course is a clinical rotation which will involve hospital and field application of skills and techniques learned in the classroom and laboratory. Students will complete required patient contacts and track interventions. Students are responsible for providing and paying for transportation to all clinical sites as well as all other related costs. This course is graded on a pass/fail basis.

PAM-201 Medical Emergencies

5 credits/4 lecture & 2 lab hours

Prerequisites: *PAM-103*, *PAM-104*, *PAM-105*, & *PAM-116*Corequisites: *PAM-202*, *PAM-213* & *PAM-214*

This course covers pathophysiology and psychosocial needs to assess and treat medical emergencies

PAM-202 Integrated Paramedic Concepts

2 credits/1 lecture & 2 lab hours

Prerequisites: *PAM-103*, *PAM-104*, *PAM-105* & *PAM-116*Corequisites: *PAM-201*, *PAM-213* & *PAM-214*

This course will integrate paramedic program information and skills in accordance with the National Registry of EMTs psychomotor and didactic testing.

PAM-213 Paramedic Clinical 3

1 credit/8 clinical hours per week for eight weeks

Prerequisites: *PAM-103*, *PAM-104*, *PAM-105* & *PAM-116*Corequisites: *PAM-201*, *PAM-202* & *PAM-214*

This course is a clinical rotation which will involve hospital and field application of skills and techniques learned in the classroom. Students will complete required patient contacts and tract interventions. Students are responsible for providing and paying for transportation to all clinical sites as well as all other related costs. This course is graded on a pass/fail basis.

PAM-214 Paramedic Field Externship

4 credits/32 hours per week for eight weeks

Prerequisites: *PAM-103*, *PAM-104*, *PAM-105* & *PAM-116*Corequisites: *PAM-201*, *PAM-202* & *PAM-213*

This course incorporates all paramedic program knowledge, skills and affective techniques into a comprehensive field externship. Each student will be assigned to an EMS service and will perform as a team leader under supervision of a specified preceptor. Students will complete required patient contacts and track interventions. Students are responsible for providing and paying for transportation to all clinical sites as well as all other related costs. This course is graded on a pass/fail basis.

Phlebotomy (PHB)**PHB-101 Clinical Phlebotomy**

4 credits/4 class hours

Prerequisite: Application and acceptance into the Phlebotomist program

Corequisites: *PHB-111* & *PHB-211*

This course provides the student with knowledge, skills and behaviors required for competency as a phlebotomist. Areas of concentration include a survey of the anatomy and physiology of veins used for phlebotomy, basic skills and responsibilities of the phlebotomist, analytical tests, color coded vacuum tubes used for specimens, collection of body fluid specimens, the National Committee for Clinical Laboratory Standards (NCCLS) order of draw, the infection cycle and infection control.

PHB-102 Venipuncture

1 credit/.5 lecture & 1.5 practicum hours

Prerequisite: RN, LPN or graduate nurse

This course is designed to provide the student with instruction in the proper technique for performing venipuncture.

PHB-111 Clinical Phlebotomy Laboratory

1 credit/3 lab hours

Corequisites: *PHB-101* & *PHB-211*

This laboratory course provides the knowledge, skills and behaviors required for competency as a phlebotomist. Areas of concentration include venipuncture techniques, skin puncture techniques, prevention of complications when drawing blood, the infection cycle and standard precautions. Additional hours of practice time under the direct supervision of an instructor are provided.

PHB-201 Clinical Phlebotomy Practicum

3 credits/160 practicum hours

Prerequisites: *ALH-106*, *PHB-101*, *PHB-111* & *permission of instructor*

This course is a supervised, non-paid 160-hour practicum experience at a hospital, blood drawing station or doctor's office. Additional experience and training in phlebotomy are provided to develop knowledge, skills and behaviors learned in the program. The practicum is offered weekdays during the day. It is graded pass/fail. Prior to the practicum current Cardiopulmonary Resuscitation (CPR) certification, Pennsylvania Child Abuse History Clearance and State Police Criminal Record Check (ACT 33/34) and a physical examination are required.

PHB-211 Clinical Phlebotomy Seminar

3 credits/3 class hours

Prerequisites: *PHB-101* & *PHB-111*

This course is an introduction to the role of the phlebotomist as a member of the healthcare team. Areas of concentration include professionalism, personal qualifications, quality control, effective communication skills, medical law and ethics, and the job search.

Philosophy (PHL)

PHL-101 Introduction to Philosophy 3 credits/3 class hours



This course is a study of basic philosophical problems such as the existence of God, the immortality of the soul, knowledge, the mind-body problem, ethics in society, subjectivism, objectivism and pragmatism, political problems arising from philosophical ideas and the theory of beauty.

PHL-103 Logic 3 credits/3 class hours



This course is a non-mathematical approach to methods for everyday reasoning. Application to daily life is stressed. Topics covered include analysis of statements; valid deductions, logical connections, syllogisms, their analysis and application; generalizing, classification and analogies; conditional arguments and common fallacies; and an introduction to symbolic logic.

PHL-105 Philosophy of Science 3 credits/3 class hours

This is a course that examines problems of nature that have been identified as science. Emphasis is on those unresolved problems. Is science the study of nature or our perception of it? How can we determine which are true and which are false?

PHL-111 Religions of the World 3 credits/3 class hours

This is a description of the origins, development and manifestations of major world religions. Their similarities and differences are emphasized.

PHL-155 Ethics 3 credits/3 class hours



This course is a study of selected topics from classical and contemporary ethics. It examines the principles of moral evaluation and reasoning, factual judgment and responsibility.

PHL-157 Existentialism 3 credits/3 class hours

This course is a study of philosophical questions arising from human existence: the nature of truth, freedom, responsibility, individuality and relationships with others. The writings of Kierkegaard, Nietzsche and other existentialists are required reading.

PHL-160 Ethics in Business 3 credits/3 class hours

This is a Philosophy course in applied ethics that seeks to expose students to moral philosophy, ethics theories/traditions; and to enable them to apply those theories to decision making in the business world.

PHL-205 Medical Ethics and Law 3 credits/3 class hours

This course is an ethics seminar. Basic ethical concepts are introduced followed by problems in medical care such as professional responsibility and patient relationships. Ethical and legal issues are examined and laws having a bearing upon medical care are discussed.

Physical Science (PHS)

PHS-101 Earth Science 3 credits/2 lecture & 2 lab hours

This is a course which investigates the interrelationships of processes that occur on and within the earth. Concepts of physical science, ecology and geology are used to study environmental principles and issues of the atmosphere, hydrosphere, lithosphere and ecosphere.

PHS-102 Physical Science 3 credits/3 class hours Prerequisite: *MAT-090*

This is an introduction to the fundamentals of physical science, including physics, chemistry, astronomy, meteorology and geology. A knowledge of basic mathematics is required.

PHS-107 Introductory Astronomy 3 credits/3 class hours



This is a descriptive introduction to astronomy. Major topics of study include: the celestial sphere and the night sky, gravity and the dynamics of celestial bodies, telescopes and the nature of light, our moon, the planets and the sun, stars and their final outcomes (white dwarfs, supernovae, pulsars and black holes), the Milky Way and other galaxies, the origins and fate of the universe, other solar systems and possibility of extraterrestrial life.

PHS-108 Introduction to Weather 3 credits/3 class hours

This is a survey for both science and non-science majors on the basic concepts of meteorology. Topics include temperature, pressure, wind, humidity, cloud formation, precipitation, storms, weather maps and forecasting and climatic patterns.

PHS-161 Physical Science for the Industries 3 credits/3 class hours Prerequisite: *MAT-080* or a score of 52 or higher on the college placement test for mathematics

This is a basic course in the fundamentals of matter, its form and properties. Matter is studied in terms of energy, power and its changing environment. Additional topics include concepts of chemistry and their application to industrial usage.

Pharmacy Technician (PHT)

PHT-100 Introduction to Pharmacy Practice 4 credits/4 class hours Prerequisite: Acceptance into the Pharmacy Technician (PHT) program

This course introduces students to the practice of pharmacy. Topics will include an overview of the profession, practice sites, drug distribution systems, technician responsibilities, quality assurance and quality improvement, drug information systems, effective communication and pharmaceutical calculations. There are required on-site visits to hospitals, homecare and retail pharmacies.

PHT-101 Pharmacology 1 for Pharmacy Technicians 3 credits/3 class hours Corequisite: *BIO-103*

This course introduces students to current concepts in pharmacology. Topics include basic drug actions, indications for drug therapy, toxicity, side effects and safe therapeutic and dosage ranges. Drugs affecting the autonomic and central nervous system, pain relief and cardiac medications are discussed.

PHT-102 Pharmacology 2 for Pharmacy Technicians

3 credits/3 class hours
Prerequisite: *PHT-101*

This course is a continuation of Pharmacology 1 for Pharmacy Technicians (PHT-101). Topics include pharmacology of the vascular and renal systems, gastro-intestinal tract and endocrine system. Chemotherapy of cancer and the pharmacology of infectious disease are discussed.

PHT-103 Pharmacy Practice 1

3 credits/2 class & 3 lab hours
Prerequisites: *CIT-100, PHT-100 & PHT-101*

This course encompasses the collection and organization of information for patient care, drug use review and departmental management. The role of the technician in the purchasing, inventory and billing of pharmaceuticals, devices and supplies is also explored. Additionally, the student learns prescription assessment and practices various means of cart fill and exchange.

PHT-104 Pharmacy Product Preparation 1

3 credits/2 class & 3 lab hours
Prerequisites: *PHT-100 & PHT-101*
Corequisites: *PHT-102, PHT-103 & PHT-105*

This course covers the preparation of non-compounded products for distribution. This includes an understanding of the role of the technician and the pharmacist in this job responsibility. The skills of drug preparation, including retrieval from inventory, profiling, calculations, measuring and safety precautions are taught. In addition, students learn to label drug products, supply the correct supplemental patient information, store products safely, apply quality assurance measures and abide by the laws, regulations and standards which affect preparing such drugs for dispensing.

PHT-105 Pharmacy Product Preparation 2

3 credits/2 class & 3 lab hours
Prerequisites: *PHT-100 & PHT-101*
Corequisites: *PHT-102, PHT-103 & PHT-104*

This course prepares students to compound both non-sterile and sterile products. This includes calculating the appropriate amount of each ingredient and using the correct compounding techniques. These activities will be done while applying corresponding techniques, applying corresponding quality assurance procedures and performing activities in accordance with the laws, regulations and standards that govern the preparation of sterile and non-sterile products.

PHT-106 Pharmacy Product Preparation 3

2 credits/1 class & 3 lab hours
Prerequisites: *PHT-103, PHT-104 & PHT-105*

This course introduces students to the preparation of specialized parenteral products. Included are home infusions, chemotherapy and miscellaneous specialized products such as monoclonal antibodies. The use of corresponding quality assurance processes and application of laws, regulations and standards, that govern the preparation of the drug products are discussed.

PHT-201 Pharmacy Technician Externship

6 credits/8 clinical hours per day/5 days a week for 8 weeks
Prerequisite: Grade C or better in all PHT courses.

This course provides students with on the job experience in a hospital and retail pharmacy under the supervision of a licensed pharmacist. The student learns to function as a Pharmacy Technician.

PHT-202 Pharmacy Law

2 credits/2 class hours
Prerequisite: *PHT-101*

This course will explore the laws and current issues that can impact the practice of pharmacy. It will allow the pharmacy technician student to understand the parameters of safe practice.

PHT-203 Pharmacy Seminar

2 credits/2 class hours
Prerequisite: Completion of semester 1 & 2 coursework in the Pharmacy Technician (PHT) program

This course deals with issues that impact on the attitudes, values, beliefs and practices of a successful pharmacy technician. Some of the topics examined include personal qualities appropriate to the pharmacy profession, the obligation to remain current with advances in therapy, developing effective work relationships, problem-solving, workflow management and the job search process.

Physics (PHY)**PHY-100 Basic Physics**

4 credits/3 lecture & 2 lab hours
Prerequisite: *MAT-090*

This is a course for students with little or no high school preparation in physics. Students in programs that require college-level physics should take this course first if they have no previous physics courses. Topics include methods of measurement, problem-solving techniques and the physical concepts of motion, forces, work and energy, electricity, waves and optics.

PHY-113 Technical Physics 1

3 credits/2 lecture & 2 lab hours
Prerequisite: *MAT-114*

This is a course for students majoring in the engineering technologies. Topics may include force, work, rate, momentum, resistance, power, energy, force transformers, energy converters, transducers, vibrations and waves, time constants, hydrostatics and hydrodynamics and radiation. Physical concepts are developed through applications of the four principal energy forms (mechanical, fluidal, electrical and thermal). Everyday applications are examined in the laboratory.

PHY-114 Technical Physics 2

3 credits/2 lecture & 2 lab hours
Prerequisite: *PHY-113*

This is a continuation of *PHY-113*. Emphasis is on technical applications of physical concepts developed through the application of the four energy forms. Everyday applications are examined in the laboratory.

PHY-123 Physics for Health Sciences/Respiratory Therapy

4 credits/3 lecture & 3 lab hours
Corequisite: *MAT-108*

This is a course that examines those laws and principles of physics dealing with motion, forces, fluids and electricity/magnetism that have relevance to respiratory therapy and other health-science professions. Major topics of study include: measurement units, conversions and experimental errors, forces, Newton's laws of motion, the characteristics of liquids and gases, the flow of fluids under various conditions, the effects of heat and temperature on gases and liquids and the basics of electricity and magnetism.

PHY-125 Applied Nuclear Physics
4 credits/3 lecture & 2 lab hours
Corequisite: *MAT-108*

This course is for students in nuclear medicine technology or radiation therapy technology. Physical principles used in radiation safety, radiation therapy and radioisotope diagnosis are studied. Topics include the atoms, radiation counting, radioactive decay, half-life, units of radioactivity, properties of alpha, beta and gamma radiation and its production, laws and modes of decay, nuclides, radiation interaction with matter, absorption and shielding of radioactivity and nuclear detection devices. The laboratory includes experience with types of nuclear radiation detectors.

PHY-126 Radiation Physics and Protection
4 credits/3 lecture & 2 lab hours
Prerequisites: *PHY-125* & *MAT-108*

This is a course in the principles of radiation protection. Basic philosophies and concepts are discussed in the context of radiation therapy and nuclear medicine. Emphasized is the safe use of radioactive sources, accelerators, X-ray machines and radionuclides.

PHY-127 Physics for Health Science/Ultrasonography
3 credits/3 class hours
Prerequisites: *PHY-100* or equivalent
& acceptance into the DMS program

This is a course in the physics of ultrasound for the student of diagnostic medical sonography. Included is the physics necessary to understand the operation of ultrasound instrumentation.

PHY-128 Physics for Health Science/Radiography
3 credits/3 class hours
Prerequisites: *PHY-100* or equivalent & acceptance into the Radiologic Technology program

This is a course in the physics of X-ray and radiation physics. Topics include the production of X-rays, X-ray tube design, basic electrical circuitry of X-ray equipment and the interaction of X-rays with matter.

PHY-141 Physics 1
4 credits/3 lecture & 3 lab hours
Prerequisite: *MAT-108*



This is a physics course taught on an algebraic level. Mechanics and heat are studied. Topics include vectors, kinematics, Newton's laws, static equilibrium, work and energy, rotational kinematics, rotational dynamics, simple harmonic motion, heat and thermodynamics.

PHY-142 Physics 2
4 credits/3 lecture & 3 lab hours
Prerequisite: *PHY-141*



This is a continuation of PHY-141. Electricity, light and modern physics are studied. Topics include charge, electric fields, electric potential difference, basic circuits, magnetism, waves, geometrical optics and atomic physics.

PHY-221 Physics for Science and Engineering 1
4 credits/3 lecture & 3 lab hours
Prerequisite: *PHY-141* or equivalent high school course completed within the past five years
Corequisite: *MAT-201*

This is a calculus-based mechanics physics course that emphasizes problem-solving techniques. Major topics of study include: vectors, one and two-dimensional kinematics, circular motion, forces and Newton's laws, work, energy and its conservation, collisions, linear momentum and its conservation, rotational kinematics and dynamics, angular momentum and its conservation, static equilibrium, simple harmonic motion and gravity.

PHY-222 Physics for Science and Engineering 2
4 credits/3 lecture & 3 lab hours
Prerequisite: *PHY-221*
Corequisite: *MAT-202*

This is a calculus-based physics course that stresses experimental and problem-solving techniques. Electricity and magnetism are studied. Topics include Coulomb's Law, electric fields, Gauss' Law, capacitors and dielectrics, Kirchoff's Rules, DC circuits, Oersted Effect, Ampere's Law, electromagnetic induction, Maxwell's equations and AC circuits.

PHY-223 Physics for Science and Engineering 3
4 credits/3 lecture & 3 lab hours
Prerequisite: *PHY-222*
Corequisite: *MAT-250*

This is a calculus-based physics course that stresses experimental and problem-solving techniques. Heat, thermodynamics, waves, geometrical and physical optics and atomic structure are studied. Topics include temperature, thermal expansion of solids, ideal gases, kinetic theory, heat transfer and calorimetry, the first and second law of thermodynamics, transverse and longitudinal wave motion, superposition of waves, synthesis of complex wave forms, electromagnetic radiation, law of reflection, law of refraction, imaging, interference, diffraction, polarization, atomic and nuclear physics.

PHY-224 Modern Physics
3 credits/3 lecture hours
Prerequisite: *PHY-223*
Corequisite: *MAT-252*

This is a course in modern physics dealing with relativity, quantum mechanics and atomic structure. Major topics of study include: special and general relativities, the radiation laws, matter waves, atomic structure, Schrodinger's equation in one dimension and three dimensions, tunneling, electron spin and multi-electron atoms and the periodic table.

Plumbing Technology (PLT)

PLT-100 Introduction to the Plumbing Profession
1 credit/1 lecture hour

This course introduces students to the plumbing trade and teaches basic plumbing skills. Students will recognize the opportunities and commitments involved in a plumbing career.

PLT-101 Plumbing Skills 1
4 credits/4 class hours
Prerequisite: *PLT-100*

This course introduces students to residential plumbing tools, materials and fittings in both a classroom and laboratory setting. Students will learn safe usage of power tools to perform basic plumbing tasks. Conservation methods will be introduced which promote a green environment.

PLT-102 Plumbing Measuring and Calculating
3 credits/3 class hours

This course provides students with opportunities to learn, apply and practice measuring and calculating skills as they apply to plumbing materials and methods.

PLT-103 Plumbing 1
2 credits/1 lecture & 3 lab hours

This course is designed to provide beginning plumbing students with a fundamental knowledge of the use and care of tools necessary for the performance of trade responsibility. Special emphasis is given to the proper procedures employed in producing a safe and healthy work environment. Laboratory sessions in soldering and brazing are conducted.

PLT-105 Introduction to Plumbing Code

2 credits/2 lecture hours

Prerequisite: *PLT-103*

This course describes drainage and distribution systems designed and built for state, county and local codes and regulations. Emphasis is placed on water supply, drainage using Article XV of the current plumbing code and Leadership in Energy and Environmental Design (LEED) concepts.

PLT-106 Plumbing Blueprint Reading

2 credits/2 class hours

Prerequisite: *PLT-100*

Students will learn to interpret and communicate plumbing designs on construction blueprints. Topics include sketching, abbreviations, symbols and illustrated views of piping systems.

PLT-115 Mathematics for Plumbing

3 credits/3 class hours

This course provides the foundations of mathematics applied to the plumbing trade. Students will review computational skills and the application of analytical solutions to problems. Additionally, a presentation of practical geometry dealing with pipe measurements, volumes and capacities of contained fluids and problems related to hydraulics and pneumatics will be provided.

PLT-121 Plumbing Drafting/Blueprint Reading 1

3 credits/2 lecture & 3 lab hours

This course deals with the interpretation of technical drawings, isometric drawings, and building plans. Students interpret three-view, sectional, schematic, exploded and isometric drawings. Leadership in Energy and Environmental Design (LEED) concepts will be discussed.

PLT-145 Plumbing Code 2

2 credits/2 lecture hours

Prerequisite: *PLT-104*

This course will present the principles for supplying safe, potable water to residential, commercial and institutional buildings, according to local plumbing codes. The principles and code requirements for safe removal of sewage, waste and storm water will be covered with emphasis on the use of the code book, drawing interpretation and application. Green applications and practices will be described.

PLT-201 Plumbing Skills 2

4 credits/4 class hours

Prerequisite: *PLT-101*

This course introduces students to residential plumbing fixtures, faucets, drain assemblies and appliances in both a classroom and laboratory setting. Students will study and practice safe application and installation of basic residential plumbing devices. Additional conservation materials and appliances will be discussed which promote a green environment.

PLT-202 Plumbing Skills 3

4 credits/4 class hours

Prerequisite: *PLT-201*

This course introduces students to code requirements for sizing a drain waste and vent (DWV) system in a classroom and laboratory setting. Topics include residential venting types and DWV installation. Conservation materials and practices are introduced to promote a green environment.

PLT-204 Maintenance Plumbing

4 credits/4 class hours

This course prepares students to recognize water supply, drain waste and vent problems. Diagnostic methods and repairs are practiced in a laboratory environment. Conservation fixtures and appliances are discussed and analyzed.

PLT-205 Plumbing 4

6 credits/3 lecture & 7 lab hours

Prerequisite: *PLT-204*

This course delineates the installation of plumbing fixtures and code requirements for gas supply systems. Additionally, students will discuss job preparation methods and Leadership in Energy and Environmental Design (LEED) concepts.

PLT-206 Plumbing Code 3

2 credits/2 lecture hours

Prerequisite: *PLT-145*

This course will prepare students for the code exam. Students will apply theory through hands-on activities and will review the concepts of Plumbing Code 1 and Plumbing Code 2. Conservation materials and methods will be discussed.

PLT-221 Plumbing Drafting/Blueprint Reading 2

1 credit/1 lecture & 1 lab hour

Prerequisite: *PLT-121*

The course will prepare apprentices to supervise complete plumbing installations using commercial plumbing drawings. Students will prepare all appropriate documentation for the installations. Leadership in Energy and Environmental Design (LEED) methods will be discussed.

PLT-222 Mechanical CAD for Plumbers

3 credits/2 lecture & 3 lab hours

Prerequisite: *PLT-221*

This course will improve the apprentice's ability to develop, modify and interpret plumbing system design drawings, layouts and coordination of drawings from other trades. Students will use Computer-Aided Drafting (CAD) software and techniques. Leadership in Energy and Environmental Design (LEED) methods will be discussed.

PLT-224 Estimating

2 credits/2 lecture hours

This course provides instruction in estimating personal needs, unit costs, quantity and take-offs within the mechanical trade. Concepts of cost projection, analysis, concept estimating, direct and indirect costs and overhead are discussed. Additionally, refrigerant, recovery instruction and certification are addressed. Cost analysis of green materials and methods are also reviewed.

PLT-225 Medical Gas

2 credits/2 lecture hours

This course provides instruction in estimating personal needs, unit costs, quantity and take-offs within the mechanical trade. Concepts of cost projection, analysis, concept estimating, direct and indirect costs and overhead are discussed. Additionally, refrigerant, recovery instruction and certification are addressed. Cost analysis of green materials and methods are also reviewed.

Political Science (POL)**POL-101 Introduction to Political Science**

3 credits/3 class hours



This course provides students with a general introduction to politics and governance by studying the basic theories and terminology of political science. To this end, the term is broken up into four distinct sections that correspond with four of the major sub-fields within the discipline. The areas of emphasis include political philosophy, comparative institutions, international relations and American politics. While studying each sub-field, students will be asked to consider current political events. Students will recognize the importance of academic terms and concepts once they are observed against the backdrop of "real world" political events.

POL-103 American Government
3 credits/3 class hours



This course investigates the development and evolution of the American political system. Students will be introduced to the unique structure, functions and problems of the national government with the federal system. Close attention is given to the nature of and the controversies emerging from the interaction between political institutions. This includes analysis of the following concepts and topics: federalism, separation of power, check and balances, Bill of Rights, democracy, civil liberties, civil rights and political parties.

POL-110 State and Local Government
3 credits/3 class hours

This course focuses on the structure, function and policies of state and local governments in the United States. Special attention is given to the origins and evolution of the American system of Federalism. The relationships among national, state and local governments in the area of education, welfare, criminal justice, economic development and environmental protection are also examined.

POL-115 The American Constitution
3 credits/3 class hours

The course examines the United States Constitution, which is the world's oldest written constitution. Born in the turbulent years following the Revolutionary War, it formalized many of the philosophical and political ideas of that period. The central values embodied in the Constitution reflect the founders' commitment to liberty and limited government. While the Constitution has served the American republic well over the past 200-plus years, it has also generated a tremendous amount of controversy. From the very beginning, disputes over constitutional interpretation have played a major role in shaping the American republic. In this course, we will study some of these major constitutional disputes and gain a greater appreciation for the evolution of constitutional law since the founding period.

POL-201 Modern Political Thought
3 credits/3 class hours

This course provides an analysis of major western political thinkers from the Renaissance to the present. The relationship of ideas to politics is emphasized but additional topics make this a history of modern ideas as well. Prominence is given to the major political thinkers from the following intellectual traditions: liberalism, communism, conservatism, fascism and democratic theory.

POL-204 Comparative Politics
3 credits/3 class hours

This course provides theoretical and empirical tools to help students understand comparative politics. The course aims to illustrate the rich diversity of political life, to show available institutional alternatives, to explain differences in processes and policy outcomes and to communicate to students the importance of global political and economic changes. Students will explore three different types of States: established democracies, developing democracies and non-democracies through country case studies from Americas, Africa, Middle-East, Europe and Asia. The comparative aspect of the course involves searching for similarities and differences among different case studies in order to formulate generalizations about politics

POL-206 International Relations
3 credits/3 class hours

The objective of this course is to introduce students to the concepts and theories within the field of international relations. Focus will be given to examining the major contending theories of international behavior and understanding the major actors within the international political system. This course will also examine the possibilities and challenges facing the international community as the countervailing forces of globalization and ethnic nationalism shape the international political landscape. Sharp focus on US foreign policy will round out the conclusion of the course.

Psychology (PSY)

PSY-101 Introduction to Psychology
3 credits/3 class hours



This is a course that provides the student with an understanding of how the scientific method is applied to the study of human behavior. Topics include the structure and function of the nervous system, foundations of learning, intelligence, social behavior, personality, feeling and emotion, motivation, developmental patterns and the measurement of behavior.

PSY-106 Psychology of African Americans
3 credits/3 class hours

This course presents the psychological principles shaping the personality of African Americans. The course includes a critique of the applicability of theories and measures across societal and cultural groups such as "traditional" statistics, racial myths, discriminatory thinking and behavior. Analysis of attitudes and behaviors which develop in non-prejudiced and prejudicial socio-economic, educational and political systems and ways to counteract them are reviewed. This course emphasizes proactive African-American leadership and the lifestyle of individual African Americans and their community.

PSY-107 Human Relations
3 credits/3 class hours

This is a course in exploring personal and group values across societal and cultural groups. Emphasis is on the use of the psychological set and the science of attitude change in developing leadership and on employee-employer, family and community interaction.

PSY-108 Human Growth and Development
3 credits/3 class hours
Prerequisite: *PSY-101*



This course combines specific areas of human development, for example, physical, cognitive, emotional, and social development and specific developmental time periods: prenatal, infant, toddler, young childhood, middle childhood, adolescence, young adulthood, middle adulthood and older adulthood. Multiple developmental theories plus biological and ecological influence in each period demonstrate how the individual and the individual's world interact in human development. The history of the study of human development and research methodologies specific to human development are included.

PSY-109 Psychology of Women
3 credits/3 class hours

This course is a survey of psychological assumptions in the shaping of the female personality across societal and cultural groups. Experimental research is examined. Emphasized are attitude, aptitude, self-concept formation, gender role-learning, the physiological and psychopathological bases of personality. Examination of the interaction of institutional, philanthropic, social, economic, educational, political, legal and religious effects on attitudes, pathology and behavior is included.

PSY-113 Psychology of Death and Dying
3 credits/3 class hours

This is a course in Thanatology, the study of death and dying. The course will cover American attitudes toward death, biological and psychological definitions of death, crisis and grief, the psycho-social impact of terminal illness, contemporary funeral and burial rituals, ethical issues related to death and dying, the dynamics of suicide, prevention and intervention, the psychosocial management of dying patients and relatives, children, adolescents and death, old age and death and issues of loss and grief for the bereaved.

PSY-114 Human Sexuality
3 credits/3 class hours

This is a course in the study of the human sexual experience which provides practical information for everyday living in a digital age. Topics include psychosocial development, sexual biology, sex roles, human sexual responses, human sexual inadequacy, sexual attitudes and practices, sexual diseases and disorders, sex and society.

PSY-115 Stress Management
1 credit/1 class hours

This is a course designed to develop stress management skills through the use of techniques for mental and physical wellness. Aspects of a healthy lifestyle include proper nutrition and diet, brain chemistry for well-being and the importance of exercise for physical wellness.

PSY-116 Organizational Psychology
3 credits/3 class hours

This course is designed for students in the technologies. It is a course in psychological theories and principles to improve supervisor and employee performance. Emphasis is on developing organizational behaviors that enhance employee satisfaction and produce profitable results in business, social institutions and governmental agencies.

PSY-150 Psychology of Intervention
3 credits/3 class hours

This is a course in the therapeutic techniques used to prevent, manage and diffuse crisis situations. Theoretical background is also provided. Focus is on passive resistance.

PSY-201 Educational Psychology
3 credits/3 class hours
Prerequisite: *PSY-101*



This is a course on learning in an educational setting. Topics include theories of learning and teaching, the effects of digital methodologies, nature and development of the child, adolescent and adult learner, creativity, individual difference, standardized testing and classroom and on-line interaction.

PSY-202 Social Psychology
3 credits/3 class hours
Prerequisite: *PSY-101*

This is a study of individuals in their social and cultural settings. Perception and judgment of social events, the socialization process, attitudes, values, social interaction, the individual in the group and the influences of culture on the development of personality are investigated.

PSY-203 Psychology of Adjustment
3 credits/3 class hours
Prerequisite: *PSY-101*

This course is a study of the personality dynamics and affective behavior of the normal individual. Emphasis is on various personality theories and their application. Discussed are facets of interpersonal relationships and factors relating to frustration, conflict, anxiety and guilt, individual differences, the deterioration of adjustment, prevention and therapy.

PSY-204 Adolescent Psychology
3 credits/3 class hours
Prerequisite: *PSY-101*

This course is a study of the physical, emotional, moral, mental and social development of adolescents. Emphasis is on the personal use of information in adolescent experiences such as school, career, peers and family relationships.

PSY-208 Abnormal Psychology
3 credits/3 class hours
Prerequisite: *PSY-101*

This is a course in the psychological and physiological dynamics behind mental illnesses. Various psychological theories are integrated and provide a comprehensive framework for understanding mental illness.

PSY-210 Child Psychology
3 credits/3 class hours
Prerequisite: *PSY-101*



This course is a study of the child's physical/biological, cognitive and psychosocial growth under a variety of environmental conditions. Topics include: theories of development, physical/biological development, cognitive development and theories of personality formation, normal and abnormal development.

PSY-211 Applied Psychology: Current Issues in Psychology
3 credits/3 class hours
Prerequisite: *PSY-101*

This course is an application of psychological principles and techniques to current problems and areas of human behavior such as education, vocational guidance, human engineering and management of personal problems.

PSY-212 Psychology of Developmental Disabilities
3 credits/3 class hours
Prerequisite: *PSY-101*

This is a course that reviews the effects physical and mental challenges/disabilities have on the individual, family, education, employment situation and public accommodations. Coping skills, professional issues and federal laws dealing with disabling conditions such as the Individuals with Disabilities Education Act, Rehabilitation Act of 1973 and American with Disabilities Act are included. Emphasis is on research and support techniques for people with disabilities, their families, schools, employers and public accommodations. Ethical issues are also considered. This course is highly recommended for education majors.

PSY-214 Psychology of Adulthood
3 credits/3 class hours
Prerequisite: *PSY-101*

This course is a study of physical, cognitive, emotional and social issues from young adulthood to the last years. Topics include significant adult life crises, coping strategies, marital status, vocational choice, the family and sexuality.

PSY-216 Psychology in the Movies
3 credits/3 lecture hours
Prerequisite: *PSY-101*

This course will provide an overview of various forms of mental illness, discussion of which will be complemented by the use of full-length movies. Symptoms and treatments of mental disorders will be discussed and compared with their portrayal in the movies.

PSY-230 Counseling the Addict
3 credits/3 class hours
Prerequisites: *PSY-101 & SOC-117*
Corequisite: *SOC-118*

This course provides an in-depth look at counseling techniques as these may be most effectively brought to bear on the addictive disorders. Students will take the theory and knowledge of such topics as case management, intervention techniques, assessment, etc. and apply them in field situations in a practicum, which is to be taken concomitantly.

PSY-270 Statistics for Behavioral and Social Sciences
4 credits/4 lecture hours
Prerequisites: *PSY-101 or ANT-101 or SOC-101 & MAT-108*

This course is an introduction to the concepts of descriptive and inferential statistics used in the behavioral and social sciences. It includes: central tendency, variability and distributions; correlation, regression, chi square and other non-parametric tests; hypothesis testing and sampling; type I error, type II error, confidence intervals and power; statistical packages and their application to hypothesis testing.

PSY-290 Research Methods and Applications

4 credits/3 lecture & 1 lab hours

Prerequisite: *PSY-101 or ANT-101 or SOC-101*
& (*MAT-108 or MAT-111*) & *PSY-270*

This is a course in scientific research methodology of the behavioral sciences covering descriptive, correlational, quasi-experimental, experimental, single IV, basic factorial and single case designs. The scientific method is used to study group and individual attitudes and behavior. Topics include research ethics, establishing construct plus internal and external validity, sampling techniques, research error, control of variables and data analysis by statistical methods. Students also study methods of conducting a literature review, generating ideas and hypotheses, collecting, grouping, analyzing and reporting research findings, experience running labs and debriefing "live" subjects.

Physical Therapist Assistant (PTA)**PTA-101 Introduction to Physical Therapy**

4 credits/3 lecture & 2 lab hours

Prerequisites: Application & acceptance into PTA program &
BIO-151 or BIO-161 or BIO-162
Corequisites: *BIO-160 & BIO-161*

This is an introductory course on physical therapy and the roles of the physical therapist and physical therapist assistant in the modern healthcare team. Topics include history, philosophy, theories of practice, definition of the profession, professional ethics, medical records, terminology, common disability groups treated, psychosocial aspects of physical disability, patient rights and approaches to interacting with patients and their families. The laboratory portion of this course will include bandaging, wheelchair design and mobility, ambulation aides, assistive devices, basic patient transfers utilizing proper body mechanics, patient positioning, vital signs and architectural barriers encountered by handicapped persons.

PTA-102 Physical Therapy Principles and Procedures 1

4 credits/3 lecture & 2 lab hours

Prerequisite: *PTA-101*Corequisites: *PTA-103 & PTA-112*

Utilizing various teaching methods, including lab and lecture, this course provides an in-depth study of modalities and special techniques pertaining to the role of a physical therapist assistant. Specifically, the modalities portion of this course includes an extensive study of theory, setup, appropriate application, clean-up, indications, contradictions, precautions and safety procedures for modalities utilized by physical therapist assistants. These include moist heat, cryotherapy, ultrasound, whirlpool, paraffin bath, intermittent venous compression, cervical/pelvic traction, infrared, ultraviolet, electric stimulation and fluidotherapy. Special techniques that are taught include burn management, wound care, pulmonary hygiene, bandaging, postural assessment, therapeutic and transverse friction massage.

PTA-103 Physical Therapy Principles and Procedures 2

4 credits/3 lecture & 2 lab hours

Prerequisites: *PTA-101, BIO-160 & BIO-161*Corequisites: *PTA-102 & PTA-112*

This course provides the physical therapist assistant student with an understanding of diagnoses and the physical therapy treatment methods used with people experiencing orthopedic and other problems that directly affect range of motion, strength, coordination and endurance. Emphasis will be placed on treatment concepts of orthopedic rehabilitation and therapeutic exercise.

PTA-112 Physical Therapy Clinical Observation

1 credit/4 clinical hours per week for 12 weeks

Prerequisites: *BIO-161 & PTA-101*Corequisites: *PTA-102 & PTA-103*

This clinical course provides the student with orientation experiences in physical therapy. The student is able to observe the functions of Physical Therapy and the roles, responsibilities and relationships of physical therapy personnel, thus

enhancing the materials presented in lectures and laboratory classes. It will also provide the student with an opportunity to reflect his/her interest in and potential for success and gratification in working as a PTA. This course is graded on a pass/fail basis.

PTA-201 Physical Therapy Principles and Procedures 3

5 credits/3 lecture & 4 lab hours

Prerequisites: *BIO-162 PTA-102, PTA-103 & PTA-112*Corequisites: *PTA-202 & PTA-211*

This is an advanced study of physical therapy modality procedures for transcutaneous electrical nerve stimulation (TENS), biofeedback, individual muscle and low volt electrical stimulation. Included is an in-depth study of the physical therapy management of spinal cord injuries, head trauma, hemiplegia, neuromuscular disease and geriatric and pediatric patients. The role of physical therapy in the health-care arena is emphasized.

PTA-202 Physical Therapy Professional Issues Seminar

2 credits/2 lecture hours

Prerequisites: *PTA-102, PTA-103 & PTA-112*Corequisites: *PTA-201 & PTA-211*

This course is designed to provide the student with information concerning professional issues and concerns relevant to the practice of physical therapy. Emphasis will be placed on the organization of healthcare institutions and community healthcare agencies. Major concerns of the profession are presented and include ethics, licensure, malpractice and continuing education. It also provides the student with knowledge and skills essential in performing departmental tasks such as budgets, third party reimbursement and quality assurance. Areas covered in personnel and professional skills include time management, job interviewing, resume writing, effective communication and problem solving styles.

PTA-203 Specialty Topics in Physical Therapy

3 credits/2 lecture & 2 lab hours

Prerequisites: *PTA-102, PTA-103 & Basic Life Support (BLS)*
healthcare provider certification (American Heart Association or
American Red Cross)Corequisites: *PTA-201, PTA-202 & PTA-211*

This course is designed to explore contemporary physical therapy topics and physical therapy practice settings. The course emphasis is placed on enhancing the Physical Therapist Assistant student's knowledge and skills in the prevention and treatment of injuries and conditions encountered in various physical therapy practice settings. Students receive training in the cognitive and skills evaluations required for Basic Life Support for Healthcare Providers Cardiopulmonary Resuscitation (CPR) and Automated External Defibrillator (AED) delivery and First Aid

PTA-211 Physical Therapy Clinical Education 1

2 credits/8 clinical hours per week for 12 weeks

Prerequisites: *PTA-102, PTA-103 & PTA-112*Corequisites: *PTA-201, PTA-202 & PTA-203*

This is a course to provide experiences in directed observation and participation in a physical therapy clinical environment. Students are being prepared to carry out a plan of care as determined by the supervising physical therapist. This course is graded on a pass/fail basis.

PTA-212 Physical Therapy Clinical Education 2

5 credits/40 clinical hours per week for 8 weeks

Prerequisites: Successful completion of all academic &
clinical requirements

This clinical course is a full-time clinical education experience in an acute care setting, eight weeks in length and supervised by a licensed physical therapist. Clinical Education 2 provides in-depth experience in and responsibility for delivery of physical therapy services to a diverse client population. The faculty makes clinical education assignments and students are responsible for their own transportation, parking and meals. This course is graded on a pass/fail basis.

PTA-213 Physical Therapy Clinical Education 3
5 credits/40 clinical hours per week for 8 weeks
Prerequisite: *PTA-212*

This clinical course is a full-time clinical education experience in a specialized clinical setting, eight weeks in length and supervised by a licensed Physical Therapist. Clinical Education 3 provides in-depth experience in and responsibility for delivery of physical therapy services to a specific client population providing the student with an opportunity to explore an area of interest. The faculty makes clinical education assignments which are subject to availability. Students are responsible for their own transportation, parking and meals. This course is graded on a pass/fail basis

PTA-215 Physical Therapy Professional Exploration
2 credits/Internet Course
Prerequisites: *PTA-201, PTA-202, PTA-203 & PTA-211*
Corequisites: *PTA-212 & PTA-213*

The purpose of this course is to provide students with the opportunity to develop a project that will allow them to explore physical therapy specialty areas such as clinical practice, education and research. This course will allow the students to plan and create their exploratory project and share their project with their peers. Examples of the exploratory project may be an in-service, presentation, written report or electronics media such as a website. The topic for the project should be chosen in consultation with clinical and/or academic faculty.

Radiologic Technology (RAD)

RAD-107 Radiologic Technology 1
4 credits/3 lecture & 2 lab hours
Prerequisite: Acceptance into RAD program
Corequisite: *BIO-161*

This course is an introduction to the profession of radiologic theory. Included are the basic principles of radiation protection for the patient and radiographer, the production and control of the X-ray beam to achieve photographic results, the basic techniques of body manipulation to demonstrate the anatomy of medical interest and the language of medicine relevant to radiologic technology.

RAD-108 Radiologic Technology Clinical 1
4 credits/16 clinical hours per week
Prerequisites: *BIO-161 & RAD-107*
Corequisite: *RAD-157*

This course is an application of the basic skills and concepts of radiation protection, positioning and radiographic technique, under the direct supervision of the radiologist, clinical coordinator, clinical instructor and staff technologist. Students become familiar with various types of radiographic and fluoroscopic equipment and apply concepts learned in the first term courses. Interactive skills and knowledge of the hospital/health team are expanded. Students develop professional ethics with patients and members of the health team. Upon completion of this course students are oriented to the assigned clinical affiliation. This course is graded pass/fail basis.

RAD-157 Radiologic Technology 2
4 credits/3 class & 2 lab hours
Prerequisites: *BIO-161 & RAD-107*
Corequisites: *BIO-162 & RAD-108*

This course is an expansion on radiologic theory. The student will be introduced to more complex tasks associated with controlling image characteristics, theory and application of radiographic accessories, more complex positioning of the skeleton, radiography of the nonosseous systems and complimentary imaging modalities.

RAD-158 Radiologic Technology Clinical 2
4 credits/8 clinical hours per day/5 days a week for six weeks.
Prerequisites: *BIO-162, RAD-108 & RAD-157*

This course provides the student with clinical experience, knowledge and practice in radiographic positioning with emphasis on the more complex procedures associated with skull and thorax. The student is expected to demonstrate, analyze and apply knowledge of factors that influence radiographic quality as well as manipulate those factors. The student works under direct supervision. This course is graded on a pass/fail basis.

RAD-207 Radiologic Technology 3
4 credits/4 class hours
Prerequisites: *BIO-162, PHY-100, RAD-157 & RAD-158*
Corequisites: *PHY-128 & RAD-208*

This course is an introduction to specialized radiographic procedures of nonskeletal areas and the biological effects of exposure to ionizing radiation. It also includes a review of basic radiation cell physiology and chemistry that influence somatic and genetic responses from ionized tissue.

RAD-208 Radiologic Technology Clinical 3
4 credits/16 clinical hours per week
Prerequisites: *BIO-162, RAD-157 & RAD-158*
Corequisite: *RAD-207*

This course expands on the knowledge and practice of radiographic and fluoroscopic procedures, under direct supervision. Competency levels skills will have increased and performance of radiographic procedures will be conducted more proficiently with identification of pathology, disease and disorders. This course is graded on a pass/fail basis.

RAD-217 Radiologic Technology 4
4 credits/4 class hours
Prerequisites: *RAD-207 & RAD-208*
Corequisite: *RAD-218*

This course includes a review of radiographic pathology, an introduction to optional, supplementary imaging modalities and a review of the required functions of the radiologic technologist in preparing for the American Registry of Radiologic Technologists examination in Radiography

RAD-218 Radiologic Technology Clinical 4
8 credits/32 clinical hours per week
Prerequisites: *RAD-207 & RAD-208*
Corequisite: *RAD-217*

The course is a continuation of the application and practice of the full spectrum of radiographic and fluoroscopic procedures. These are performed with direct supervision progressing to indirect supervision. This course is graded on a pass/fail basis.

RAD-258 Radiologic Technology Clinical 5
4 credits/8 clinical hours per day/5 days a week for six weeks
Prerequisites: All academic & clinical program requirements

This course provides a continued opportunity for the student to perform all routine procedures and gain experience in special techniques. The student rotates through specialty areas to observe practice in pediatrics, ultrasound, angiography and special computerized imaging studies. This course is graded on a pass/fail basis. A pass grade is a requirement to be eligible to apply for the American Registry of Radiologic Technologist Examination in Radiography.

Robotic Technology (RBT)

RBT-225 Robotics Control Systems
4 credits/3 lecture & 2 lab hours
Prerequisites: *EET-103* & *SET-105*

This course offers an introduction to robotics, including motive power elements, computer control, safety, work cells and maintenance. A history and classification of robots is included. Programming, calculation of robotic motion, electric and mechanical principles are studied in the lab.

RBT-230 Automated Equipment
3 credits/2 lecture & 2 lab hours
Prerequisite: *RBT-225*

This course presents a survey of the types of equipment used in robotics and automation. Devices such as motors, servo-motors, conveyors, sensors, mechanical linkages and end-of-arm tooling are studied for operation and troubleshooting.

RBT-235 Programmable Logic Controllers
4 credits/3 lecture & 2 lab hours

This course provides a working knowledge of programmable logic controllers. Topics include terminology, basic and advanced relay logic programming, connection and control of input/output devices. Emphasis is placed on interfacing, operating and programming a wide range of robotic and industrial automation devices.

RBT-238 Advanced Programmable Logic Controls
3 credits/2 lecture & 2 lab hours
Prerequisite: *RBT-235*

This course will enhance the study of programmable logic controllers and their communication between multiple PLCs. Students will study serial communications and Internet techniques applied to programmable logic controls. Students will code, test and revise programs and develop human-machine interfaces (HMI).

Respiratory Therapy (RES)

RES-111 Respiratory Care Equipment 1
4 credits/3 class & 3 lab hours
Prerequisites: *BIO-115*, *CHM-109* or *CHM-110* & *CHM-111* & *MAT-108*
Corequisites: *PHY-123* & *RES-113*

This is a course relating the equipment used in respiratory therapy to the pathological condition of patients.

RES-112 Respiratory Equipment 2
4 credits/3 class & 3 lab hours
Prerequisites: *RES-111* & *PHY-123*
Corequisites: *BIO-209* & *RES-114*

This is a continuation of *RES-111 Respiratory Care Equipment 1*. Emphasis is placed on mechanical ventilators and the proper care of patients on mechanical ventilation.

RES-113 Respiratory Therapy 1
4 credits/3 class & 3 lab hours
Prerequisites: *BIO-115*, *CHM-109* or *CHM-110* & *CHM-111* & *MAT-108*
Corequisites: *PHY-123* & *RES-111*

This is a course relating respiratory therapy equipment to the pathological condition of patients.

RES-114 Respiratory Therapy 2
4 credits/3 class & 3 lab hours
Prerequisites: *RES-111*, *RES-113* & *PHY-123*
Corequisites: *BIO-209* & *RES-112*

This is a continuation of *RES-113, Respiratory Therapy 1*. Emphasis is placed on special respiratory conditions and the proper care of patients with respiratory diseases.

RES-115 Fundamentals of Clinical Practice
1 credit/1 class hours
Prerequisites: *BIO-209* & *RES-114*
Corequisite: *RES-117*

This is an introduction to the clinical practice of respiratory therapy.

RES-116 Pulmonary Diagnostic Procedure
2 credits/2 class hours
Prerequisite: *RES-115*
Corequisite: *RES-117*

This is a course relating the diagnostic procedures used to the pathological condition of patients.

RES-117 Pulmonary and Related Pathology
4 credits/3 class & 3 lab hours
Prerequisites: *BIO-209*, *RES-112* & *RES-114*
Corequisites: *RES-115* & *RES-116*

This course is the study of the nature and cause of disease and conditions caused by the disease. Emphasis is placed on recognizing the clinical signs and symptoms of disease and any changes in normal laboratory values.

RES-118 Respiratory Pharmacology
1 credit/1 class hour
Prerequisites: *BIO-209*, *RES-112* & *RES-114*
Corequisites: *RES-115*, *RES-116* & *RES-117*

This course is the study of respiratory pharmacology with emphasis on the properties of medications and their effects on the patient. The competencies a respiratory care practitioner must demonstrate to be safe and effective will be stressed.

RES-202 Medical Aspects of Respiratory Therapy
3 credits/3 class hours
Prerequisites: *RES-115*, *RES-116* & *RES-117*
Corequisite: *RES-211*

This is a course providing a physician's insights into medical and surgical topics related to respiratory therapy with an emphasis on MD/therapist communication.

RES-211 Respiratory Therapist Clinical 1
9 credits/3 lab & 28 clinical hours
Prerequisites: *RES-115*, *RES-116* & *RES-117*
Corequisite: *RES-202*

This is a clinical externship in which students work under supervision in affiliated institutions and apply therapeutic and diagnostic procedures. Included are critical and general patient care.

RES-212 Respiratory Therapist Clinical 2
12 credits/3 lab & 37 clinical hours
Prerequisites: *RES-202* & *RES-211*

This is a continuation of the practical application of equipment and theory in the hospital. Emphasis is on critical care areas and advanced diagnostic and therapeutic procedures.

Real Estate (RLE)

RLE-101 Real Estate Fundamentals

2 credits/2 class hours & arranged work hours
Corequisite: RLE-102

This course presents the study of the language, principles and laws that govern the business of real estate. Emphasis is placed on the concepts of land, property and rights in realty and title and the means, methods and laws that govern these ideas.

RLE-102 Real Estate Practice

2 credits/2 class hours & arranged work hours
Corequisite: RLE-101

This is an overview of real estate listing and selling procedures. Included is an in-depth study of all types of real estate financing, including FHA, VA, conventional, construction and special mortgages. Cooperatives, condominiums and their types of private and public funding and development techniques are evaluated.

Radiation Therapy Technology (RTT)

RTT-101 Radiation Therapy Orientation

2 credits/2 class hours
Prerequisites: College-level algebra, biology & physics
Corequisite: RTT-111

This is an introduction to the principles of radiation therapy. The student learns the duties and responsibilities of a radiation therapist and the types of equipment and procedures used in patient care.

RTT-102 Fundamentals of Radiation Therapy

2 credits/2 class hours
Prerequisites: RTT-101 & RTT-111
Corequisite: RTT-112

This is a course in which the student therapist becomes familiar with all types of radiation therapy equipment, learns the types of treatment employed and learns the use of hand and computer dosimetry in treatment planning.

RTT-111 Radiation Therapy Skills Laboratory

1 credit/3 lab hours
Prerequisites: College-level algebra, biology & physics
Corequisite: RTT-101

This is an introductory lab course in which students learn basic patient care skills and receive hands-on experience with ancillary equipment and immobilization procedures under the direct supervision of a radiation therapist.

RTT-112 Fundamentals of Radiation Therapy Clinical

1 credit/16 clinical hours
Prerequisites: RTT-101 & RTT-111
Corequisite: RTT-102

This is an introductory clinical course in which students observe radiation therapy personnel in their daily treatment routine and receive hands-on experience with treatment equipment necessary to become a competent and qualified radiation therapist. Students are supervised by a certified radiation therapist.

RTT-120 Applied Radiation Therapy 1

4 credits/40 clinical hours
Prerequisites: RTT-101, RTT-102, RTT-111 & RTT-112

This course is 10 weeks of practicum in a clinical facility, participating in the duties performed by a radiation therapist. The student observes the initial clinical evaluation of the patient and aids in treatment planning and follow-up. Under supervision, the student positions, plans and treats the patient, calculates and records dosage, checks the patient's treatment records and observes the patient in a routine follow-up.

RTT-201 Theoretical Radiation Therapy 1

3 credits/3 class hours
Prerequisites: RTT-101, RTT-102, RTT-111, RTT-112 & RTT-120
Corequisite: RTT-202

This is a course in treatment equipment used in radiation therapy. Instruction includes the use, components and maintenance of external beam and brachytherapy equipment. Advanced techniques in treatment planning are introduced.

RTT-202 Radiation Therapy Clinical Practicum 1

4 credits/24 clinical hours
Prerequisites: RTT-101, RTT-102, RTT-111, RTT-112 & RTT-120
Corequisite: RTT-201

This is a course conducted in a clinical facility where under direct supervision, the student gains more advanced training and experience in the operation of radiation therapy equipment.

RTT-203 Radiation Therapy Technology 1

3 credits/3 class hours
Prerequisite: ARRT registry in radiography or BS degree with clinical radiation oncology background
Corequisites: PHY-125 & RTT-204

This course provides a study of oncology, basic radiation therapy physics and treatment planning as well as the operation and maintenance of radiation therapy equipment.

RTT-204 Clinical Radiation Therapy 1

4 credits/24 clinical hours
Prerequisite: ARRT registry in radiography or BS degree with clinical radiation oncology background
Corequisites: PHY-125 & RTT-203

This course will be conducted in a clinical facility where, under direct supervision, the certificate student will gain training and experience in radiation therapy techniques and in the operation of radiation therapy equipment.

RTT-211 Theoretical Radiation Therapy 2

3 credits/3 class hours
Prerequisites: RTT-101, RTT-102, RTT-111, RTT-112, RTT-120, RTT-201 & RTT-202
Corequisite: RTT-212

This is a course in the theory of computer use in treatment planning, assessment and maintenance of simulation and treatment equipment, techniques in image processing and high energy linear accelerators. Emphasis is on advanced computerized treatment planning.

RTT-212 Radiation Therapy Clinical Practicum 2

4 credits/24 clinical hours
Prerequisites: RTT-101, RTT-102, RTT-111, RTT-112, RTT-120, RTT-201 & RTT-202
Corequisite: RTT-211

The student advances in technical competence on treatment units and simulator. The student will be afforded an opportunity to use a treatment-planning computer, image processor and calibration equipment under direct supervision in a clinical facility.

RTT-213 Radiation Therapy Technology 2

3 credits/3 class hours
Prerequisites: RTT-203 & RTT-204
Corequisite: RTT-214

This course is designed to present advanced concepts in radiation therapy technology; extensive time will be spent on radiation therapy dosimetry concepts.

RTT-214 Clinical Radiation Therapy 2
4 credits/24 clinical hours
Prerequisites: *RTT-203* & *RTT-204*
Corequisite: *RTT-213*

The certificate student advances in technical competence and learns to use a computer, simulator and calibrate equipment under direct supervision in a clinical facility.

RTT-215 Medical Imaging and Simulation
2 credits/2 class hours
Prerequisites: *RTT-101*, *RTT-102*, *RTT-111*, *RTT-112*, *RTT-120*, *RTT-201* & *RTT-202*
Corequisites: *RTT-211* & *RTT-212*

This is a course which covers two main components of radiation therapy technology. The first section will provide the student with the opportunity to examine human structure as it appears through medical imaging. The student will be required to recognize and identify anatomical landmarks utilized as reference points in patient positioning and set up. Emphasis is placed on cross-sectional anatomy. The second section of the course will provide the student with the fundamentals of radiographic exposure technique. Processing of images will be discussed as they are related to simulations and treatment planning with a focus on three-dimensional views.

RTT-218 Radiation Oncology
3 credits/3 class hours
Prerequisite: *RTT-201* or *RTT-203*
Corequisite: *RTT-211* or *RTT-213*

This is a course in the study of malignant disease by anatomical systems with emphasis on the staging and grading of tumors, their site of origin and their spread and involvement. Multiple modalities of cancer treatment are explored.

RTT-219 Radiation Seminar
1 credit/1 class hour
Prerequisites: *RTT-101*, *RTT-102*, *RTT-111* & *RTT-201*
Corequisites: *RTT-211*, *RTT-215* & *RTT-218*

This course provides a discussion of current literature and publications, new procedures, new radiation therapy equipment, trends in radiation therapeutic methodology, trends in the healthcare industry (e.g. demographic patterns, managed care). Included are special presentations by guest lecturers and students. Emphasis is placed on resume writing and interviewing skills.

RTT-220 Radiation Therapy Externship
5 credits/32.5 class hours per week for two weeks & 40 clinical hours for eight weeks
Prerequisites: *RTT-101*, *RTT-102*, *RTT-111*, *RTT-112*, *RTT-120*, *RTT-201*, *RTT-202*, *RTT-211* & *RTT-212*

This course is a combination of classroom lecture/lab and clinical externship for the degree student completing the program in radiation therapy technology. The student will be afforded the opportunity, under direct supervision, to perform the duties and learn the responsibilities of a radiation therapist.

RTT-221 Radiation Therapy Externship
5 credits/32.5 class hours per week for two weeks & 40 clinical hours for eight weeks
Prerequisites: *RTT-203*, *RTT-204*, *RTT-213* & *RTT-214*

This course is a combination of classroom lecture and clinical externship for the certificate student completing the radiation therapy technology program. Under direct supervision, the student will gain knowledge and experience in advanced/complex techniques utilized in cancer treatment.

Russian Language & Culture (RUS)

RUS-101 Elementary Russian 1
3 credits/3 class hours
Prerequisite: Eligibility for *ENG-100* & *DVS-101* or *DVS-103*

This course is designed to encourage the development of communicative proficiency through an integrated approach that incorporates all four language skills: listening, speaking, reading and writing. Grammatical structures, vocabulary and readings are presented as tools for developing good communications skills. In addition, this course aims to promote culture awareness of the Russian-speaking world.

RUS-102 Elementary Russian 2
3 credits/3 class hours
Prerequisite: Completion of *RUS-101* with a grade of C or better

This course builds on the skills acquired in Elementary Russian 1, as students continue to develop their communicative language skills in Russian. In addition, this course aims to promote culture awareness of the Russian-speaking world. It is recommended that students take the next level RUS course (*RUS-201*) within one academic year of the completion of this course.

RUS-201 Intermediate Russian 1
3 credits/3 class hours
Prerequisite: Completion of *RUS-102* with a grade of C or better

The course builds on the skills acquired during the elementary Russian language sequence. It includes a functional review of the basic language structure and grammar, then goes on to introduce more complex structures. The course has a strong cultural component. It is recommended that students take the next level RUS course (*RUS-202*) within one academic year of the completion of this course.

RUS-202 Intermediate Russian 2
3 credits/3 class hours
Prerequisite: Completion of *RUS-201* with a grade of C or better

This course is a continuation of the Intermediate Russian 1 course. Students continue to refine their language abilities, increase grammar comprehension and enhance their vocabulary. All grammatical structures are covered. The course has a very strong cultural component.

Student Development Services (SDS)

SDS-101 Career Planning
1 credit/1 class hour

This is a course which explores career choice. Students develop clear educational and career goals by assessing their interests, values, personality and skills.

SDS-102 Academic and Personal Development
1 credit/1 class hour

This is a course in the techniques for becoming a successful college student. Coping skills and strategies for transitioning to college are emphasized. The course fosters an awareness of self, the role of self-esteem and confidence in learning and the importance of self-management skills and tools. Links between student needs and campus resources and processes are explored.

SDS-103 Parenting
1 credit/1 class hour

This course will provide students with valuable information on a variety of parenting issues, help to identify and utilize resources and develop skills to assist students who are also parents to be successful in the college environment.

SDS-104 Leadership 1
1 credit/1 class hour

This course is designed to build leadership and human relation skills through both theory and practice. Students will become adept at building, enhancing and/or modifying their individual leadership style within a diverse world. Leadership skills can be applied to the student's personal, academic, community and professional environments.

SDS-105 Leadership 2
1 credit/1 class hour

The purpose of this course is to help students develop leadership and human relation skills. The concepts of leadership are explored through both theory and practice. Topics include conducting a meeting, group dynamics, theory of power, problem-solving and conflict management, budget and finance management, the hows and whys of stress and group presentation. Leadership skills can be applied to the student's personal, business and professional life.

SDS-106H Peer Study Service Learning
1 credit/2 practicum hours per week
Prerequisite: Students must be members in good standing in the Honors Program and have earned a final grade of A in a college-level course in the discipline in which they wish to offer supplemental instruction

This course is designed to provide peer study opportunities for students enrolled in developmental courses or in college-level classes in which the instructor has requested peer supplemental instruction. Qualified Honors students will be trained to facilitate supplemental instruction study halls, complete assigned readings, facilitate study halls, interact with other study hall facilitators and the instructor on Blackboard, and complete a final reflection paper.

SDS-110 First Year Experience
3 credits/3 class hours

This course is designed to focus on helping insure the successful transition of students into higher education. Information regarding college resources, supplemental instruction, effective communication within the college environment and other college success strategies will be provided.

SDS-112 The Job Search
1 credit/1 class hour

This is a course which prepares students for the world of work by helping them gain practical job-seeking skills including tapping into the hidden job market and planning a job search strategy. Emphasis is placed on resume writing, job interviewing, career networking, team building and developing positive work habits.

Science & Engineering Technology (SET)

SET-100 Introduction to Engineering Technology
3 credits/3 class hours

This course provides a study of techniques and skills needed for success in the engineering technology field. Concepts of engineering problem solving and communications are presented through hands-on experiences in mechanical, civil and electronic engineering technology.

SET-105 Technical Computing
3 credits/2 lecture & 2 lab hours

This course presents applications of computers in engineering and engineering technology fields. Students develop skills in the solution of engineering equations using computer-based analysis programs. The application of Microsoft Office productivity tools to engineering reports, with graphics from multiple sources, will be practiced. The movement of documents, engineering drawings and data electronically through the local area network and the Internet will be covered.

Sheet Metal Technology (SHM)

SHM-103 Basic Sheet Metal Fabrication
4 credits/2 lecture & 4 lab hours

This is a course in fundamentals of sheet metal shop operation. Shop safety and shop operation practices will be covered. Correct operation of sheet metal hand tools, rotary machines, power shear and roll forming machines are included in lab work. Fundamentals of sheet metal layout will be practiced and applied to fabrication scenarios.

SHM-104 Basic Mechanical Drawing
3 credits/1 lecture & 4 lab hours

This is a course in drafting principles and applications to the sheet metal industry. Use of drafting instruments, principles of line types and weights, dimensioning techniques, scaling and drawing layout will be covered. Principles will be applied extensively in 3-view orthographic drawings and shop sketches.

SHM-107 Sheet Metal 2
3 credits/1 lecture & 4 lab hours

This is a course for the intermediate sheet metal applications student. More challenging methods of triangulation, radial line development and seaming will be covered. Students will further develop those basic skills learned in SHM-103 and apply them to more challenging projects.

SHM-108 Advanced Mechanical Drawing
3 credits/1 lecture & 4 lab hours
Prerequisite: *SHM-104*

This is a course in advanced mechanical drawing and HVAC applications. Students will get instruction on oblique, isometric and perspective drawings. These techniques will be practiced extensively in creating drawings which would be used in design and fabrication of HVAC systems.

SHM-203 Sheet Metal 3
4 credits/2 lecture & 4 lab hours
Prerequisite: *SHM-107*

This is a course in advanced application of lay out technique and industry equipment. Students will receive extensive lab work in advanced triangulation and parallel line development technique. Focus of application will be on ornamental and architectural sheet metal products and applications.

SHM-204 CAD and HVAC Design
4 credits/2 lecture & 4 lab hours
Prerequisite: *MAT-191*

This course is synthesis course on design of HVAC systems and creating shop drawings using CAD software. Students will apply skills learned in mechanical drawing and mathematics to create HVAC design drawings which meet design criteria as spelled out in the SMACNA and ASHRAE design manuals.

SHM-207 Problem Solving
5 credits/3 lecture & 4 lab hours

This is a synthesis course in applied problem solving for the sheet metal industry. Standard trade methods will be applied to industry applications in terms of lay out, field measuring and offset calculation. Principles of triangulation will be covered in terms of basic theorems and their application to the industry.

SHM-208 Industrial Metal Fabrication
3 credits/1 lecture & 4 lab hours
Prerequisites: *WLD-295, WLD-296 & WLD-297*

This is a course in fabrication techniques associated with ferrous and non ferrous metals thicker than .0625. Lay-out of industrial products and fit up techniques will be discussed and practiced. Principles of industrial air and particle movement systems will be discussed and fabricated.

SHM-209 Advanced AutoCAD Applications

3 credits/1 lecture & 4 lab hours

Prerequisite: *SHM-204*

This course allows the AutoCAD 2007 student to gain additional practice in developing more complex working drawings as related to the sheet metal industry. Using the foundation of *SHM-204 CAD & HVAC Design*, the student will create complex shop fabrication and field installation drawings utilizing the AutoCAD 3D modeling and classic interface. Microsoft Word and Excel are also used to document schedules and job documents.

SHM-210 Foreman Training

1 credit/1 lecture hour

A foreman is the link between the contractor (employer) and the labor (employee) on a construction project. As such, the foreman is responsible for making sure that the crew efficiently and effectively performs the work according to industry standards and job-specific drawings and specifications. This course is designed to give the student a better understanding of what it takes to be a sheet metal foreman and gives them a solid base of knowledge if they do choose to begin a career as a foreman.

Sociology (SOC)**SOC-101 Introduction to Sociology**

3 credits/3 class hours



This is an introduction to the science of sociology, including a discussion of sociological theory and method, social structure, culture and socialization. Also emphasized are social stratification, race, ethnicity and gender. Social institutions and their change dynamics are examined.

SOC-117 Understanding Chemical Dependency

3 credits/3 class hours

Prerequisite: Eligible for *ENG-100*

This is an introductory level course to the field of drug and alcohol studies. Students will acquire a knowledge of the effects and composition of the most frequently abused drugs. Then the study will acquaint the student with the four perspectives currently utilized in the field: the biophysical model, the model from psychology, the spiritual paradigm and the theories of sociology.

SOC-118 Drug and Alcohol Clinical Practicum

3 credits/1 class & 2 practicum hours

Prerequisite: *SOC-117*Corequisite: *PSY-230*

This course is a drug and alcohol clinical practicum which affords the student the ability to practice what they have learned in class. Students are assigned to work in any of a number of clinical settings, depending on their inclinations and scheduling exigencies. Field work is complemented by lectures in ethics and HIV/AIDS and other blood-borne infections.

SOC-160 Introduction to Women's Studies

3 credits/3 class hours

This course provides an overview of the field of Women's Studies to include historical to current work in: research, socialization, education, work, families, diversity and differences, language, culture, politics, laws, religion and medical/biological issues.

SOC-201 Sociology of the Family

3 credits/3 class hours

Prerequisite: *SOC-101*

This course is a study of the family and its institutional aspects. Empirical science is applied to childhood development, courtship, marriage, parenthood, bereavement and divorce. Cultural, class, religious, ethnic and racial differences are analyzed.

SOC-202 Human Aging

3 credits/3 class hours

This course is an introduction to the study of the process of human aging. This course takes a holistic approach to the study of sociological, psychological, anthropological, historical, demographic, biological and health factors in the description and explanation of the aging experience. Also covered are contemporary problems, trends and social policy issues affecting the aged.

SOC-208 Urban Sociology

3 credits/3 class hours

Prerequisite: *SOC-101*

This course is a broad survey of the origins and development of urban, suburban and metropolitan settlements, with particular emphasis on the emergence and transformation of US cities. Urban, suburban and metropolitan social problems and public policy issues are covered.

SOC-210 The Sociology of Sexual Behavior

3 credits/3 class hours

This course is a study of sex in its varied social contexts. The course emphasizes the values, bases and constraints of sex in contemporary society, contrasting them with the traditional perspective. Topics include cross-cultural comparisons, sexual scripts and human sexual response, growing up sexually, love and sex, sex in committed and non-committed contexts, sexual variations and sex and the law. Students examine their own attitudes and values about sexuality in the post-sexual revolution social environment.

SOC-211 Racial and Ethnic Minorities

3 credits/3 class hours

This course will investigate the construction of the social categories of race and ethnicity. Discussion will revolve around the history, process and effects of these constructions. A major focus will be on interracial and interethnic relations in the United States.

SOC-212 Social Problems

3 credits/3 class hours

Prerequisite: *SOC-101*

This course is a study of problems of inequality, problems of the global setting, problems of the life cycle, problems caused by violating social norms and other related issues. Discussed are underlying processes, the interpretation of statistics and social policies that address these social problems.

SOC-213 Sociology of Health and Illness

3 credits/3 class hours

This course will identify issues of health and the healthcare system of the United States. Topics of rising healthcare costs, the under and uninsured will be presented. Cultural concepts of illness and suffering as they relate to societal structure will be presented.

SOC-216 Sociology of Deviance

3 credits/3 class hours

Prerequisites: *SOC-101 & ENG-101*

In this course, students gain the ability to analyze a variety of deviant behaviors from sociological, critical and cross-cultural perspectives. Deviant behavior is any activity or action that attracts widespread social disapproval. Topics include but are not limited to homicide, rape, family violence, mental disorders, unconventional sexuality, drug use, suicide, physical disability and appearance, unconventional behavior and freedom of expression.

Stationary Operating Engineer (SOE)

SOE-101 Electricity 1 3 credits /3 class hours

This is an introductory, comprehensive course that provides training for electrical principles, practices and maintenance in residential, commercial and industrial applications. Students develop the vocabulary, skills and familiarity needed to effectively manage electrical systems in large and small facilities.

SOE-102 HVACR 1 3 credits/2 class & 2 lab hours

This introductory course provides training in the principles, practices and design of HVACR systems. The course also provides opportunities for hands-on training. Topics covered in the course include safety practices, tools and equipment and types of motors.

SOE-103 Plumbing 1 3 credits/3 class hours

This course provides an introduction to the various components of plumbing design and basic installation utilized in industrial/commercial settings. Topics include the study of tools, materials, fixtures and practices commonly used in the plumbing trade.

SOE-110 HVACR 2 3 credits/2 class hour & 2 lab hours Prerequisite: SOE-102

This course is a continuation of the introduction to HVACR 1 and provides additional training in the principles, practices, applications, maintenance, troubleshooting and design of HVACR systems. The course also provides opportunities for hands-on training. Topics covered in the course include refrigeration, tubing and evaporators.

SOE-111 Electricity 2 3 credits/3 class hours Prerequisite: SOE-101

This course is a continuation of Electricity 1 and is designed to provide training in the more advanced areas of electrical principles, practices and maintenance in residential, commercial and industrial applications. The training includes more advanced applications using the tools, materials, fixtures and practices of circuits, transformers and electric control devices commonly used in the electrical trade.

SOE-112 Plumbing 2 3 credits/3 class hours Prerequisite: SOE-103

This course is a continuation of Plumbing 1 and is designed to provide training in the more advanced areas of plumbing design and installation in commercial/industrial settings. The training includes more advanced applications using the tools, materials, fixtures and practices commonly used in the plumbing trade.

SOE-114 High Pressure Steam Boilers 3 credits/3 class hours

This course provides training for the skills needed to operate high pressure boilers and related equipment in a safe and efficient manner. Topics covered include steam boiler types, relevant industry codes, meters and emergency procedures in boiler operation.

SOE-201 Industrial Maintenance 1 3 credits/3 class hours Prerequisites: SOE-101 & SOE-102 or one year's experience in maintenance or related field

This course is a comprehensive introduction to fundamental maintenance and troubleshooting principles, procedures and practices in a system format. Systems include electrical, refrigeration, boiler, HVAC, mechanical, fluid power, welding, programmable controllers and preventive maintenance.

SOE-202 Industrial Electric 1 3 credits/3 class hours Prerequisites: SOE-101 & SOE-111

This is a comprehensive introductory course that covers the study of industrial electrical principles, practices and their applications in an industrial/commercial setting. Topics covered during the course include the language of electricity, alternating current, wiring applications and DC currents.

SOE-203 HVACR 3 3 credits/2 class & 2 lab hours Prerequisite: SOE-110

This course provides an advanced presentation and hands-on training in the principles, practices, application, installation, maintenance, repair, design and troubleshooting procedures for HVACR technicians. The emphasis is on industrial and commercial applications. Topics include all weather systems, indoor air quality and domestic refrigeration.

SOE-204 Direct Digital Control 1 3 credits/3 class hours Prerequisites: SOE-101 & SOE-111 or 1 year electrical or related control experience

This is an introductory course that provides training in the fundamental principles of direct digital/programmable logic controllers. In the course, students will cover DDC and PLC procedures, installations and controllers in a system format.

SOE-205 Chief Engineer Leadership Training 2 credits/2 class hours

A chief stationary engineer provides leadership to the employees responsible for maintaining business/industry facilities. This course is designed to provide the training needed for the roles as facility technical advisors, managers or planners.

SOE-210 Industrial Maintenance 2 3 credits/3 class hours Prerequisite: SOE-201

This course is a continuation of Industrial Maintenance 1 and provides advanced training for fundamental maintenance and troubleshooting principles, procedures and practices in a system format. Systems include electrical, refrigeration, boiler, HVAC, mechanical, fluid power, welding, programmable controllers and preventive maintenance.

SOE-211 Industrial Electric 2 3 credits/3 class hours Prerequisite: SOE-202

This advanced course is a continuation of Industrial Electric 1 and covers advanced electric principles, practices and their application in an industrial/commercial setting. Special emphasis is on troubleshooting and high voltage distribution systems.

SOE-212 HVACR 4 3 credits/2 class & 2 lab hours Prerequisite: SOE-203

This course is a continuation of HVACR 3 and provides additional advanced presentation and hands-on training in the principles, practices, application, installation maintenance, repair, design and troubleshooting procedures for HVACR technicians. The emphasis is on industrial and commercial applications. Topics include chilled water air conditioning systems, heat pumps and cooling towers and pumps.

SOE-214 Direct Digital Control 2

3 credits/3 class hours
Prerequisite: *SOE-204*

This course is a continuation of Direct Digital Control 1 and is designed to provide training in the more advanced areas of DDC and PLC principles, practices and maintenance in residential, commercial and industrial applications. The training includes more advanced principles, use of DDC and PLC procedures, installations and controllers in a system format.

SOE-215 City Engineers License Refresher and Testing

1 credit/1 class hour
Prerequisites: *SOE-101, SOE-102 & SOE-114*

This course prepares individuals to sit for the City of Pittsburgh Engineer License. The course includes, but is not limited to, the following: boilers, fittings and accessories, basic electric, calculations, overcurrent protection. There is also an HVACR overview, such as basic refrigeration system components, temperature/pressure relationship, Dalton's Law etc. Participants will use practice test questions and test methodology during the course.

Social Work Technology (SOW)**SOW-101 Introduction to Social Work**

3 credits/3 class hours
Prerequisite: Eligible for *ENG-100*

This course provides a survey of American social work including its historical roots, its major processes (social casework, social group work and community organization) and its settings. Special attention is paid to the role of the social worker in the alleviation of community problems. Coursework in this area provides students with the knowledge and values of social work at the introductory level.

SOW-103 Introduction to Case Management

3 credits/3 class hours

This course is an overview of both the theory and practice of case management and addresses both community and individual practice. It is intended for the entry-level case manager and focuses on how to track and manage a caseload.

SOW-106 Interviewing Skills

3 credits/3 class hours

This is a course to help beginning practitioners in human services learn to be better listeners in order to understand problems expressed by clients. Treatment methods are explored. The use of taped material, closed circuit television and role playing methods are taught.

SOW-110 Social Work Service Learning Practicum

3 credits/1 lecture & 6 practicum hours
Prerequisites: *SOW-101*; eligible for *ENG-100*

This course describes how fieldwork and servant leadership is an essential component of professional development for anyone pursuing a career in social work. The focus of this course is to provide the student with an introduction to the many aspects of practice within the social work profession, as well as to provide "hands-on" experience in the community setting. All students will be required to complete 100 hours of service. Students must have three current clearances: FBI Fingerprint Clearance (ACT 114), Pennsylvania State Police Criminal History Clearance (ACT 34) and Pennsylvania Department of Public Welfare Child Abuse History Clearance (ACT 151) Students must also meet the local requirements of their field or community placement.

Agencies are selected on the basis of the quality of their professional practice, their dedication to addressing social work issues and their interest in social work education.

SOW-120 Child Welfare

3 credits/3 class hours

Historical and legal bases for services to children, both institutional and non-institutional are examined. Problems, standards and practices are considered together with the agencies, resident treatment facilities, juvenile courts and protective agencies which implement services.

SOW-125 Introduction to Social Welfare

3 credits/3 class hours
Prerequisite: Eligible for *ENG-100*

This course acquaints students with the historical development of social welfare and social welfare policy. It provides students with a national and global perspective, which enables them to better understand social welfare systems, concepts and programs.

SOW-130 Community Resources

3 credits/3 class hours

This course provides a review of voluntary and governmental policies and services at local, state and federal levels. Social legislation providing resources is related to the community service institutions, the groups served and service used.

SOW-150 Cultural Competence and Diverse Populations

3 credits/3 class hours
Prerequisite: Eligible for *ENG-100*

This course will provide students with the knowledge, values and skills of culturally-competent social work at the foundational level. Emphasis on advocacy, strengths and well-being of diverse individuals, families, groups, organizations and communities will be explored.

SOW-210 Human Behavior in the Social Environment

3 credits/3 class hours
Prerequisite: Eligible for *ENG-100*

This course provides a conceptual framework for knowledge of human behavior and the social environment with a focus on individuals throughout the life span. Special attention to biological, psychological, social, spiritual and cultural systems will be examined.

Spanish Language & Culture (SPA)**SPA-101 Elementary Spanish 1**

3 credits/3 class hours
Prerequisite: Eligibility for *ENG-100 & DVS-101*
or *DVS-103*



This course is designed to encourage the development of communicative proficiency through an integrated approach that incorporates all four language skills: listening, speaking, reading and writing. Grammatical structures, vocabulary and readings are presented as tools for developing good communications skills. In addition, this course aims to promote culture awareness of the Spanish-speaking world.

SPA-102 Elementary Spanish 2

3 credits/3 class hours
Prerequisite: Completion of *SPA-101* with a grade of C
or better



This course builds on the skills acquired in Elementary Spanish 1, as students continue to develop their communicative language skills in Spanish. In addition, this course aims to promote culture awareness of the Spanish-speaking world. It is recommended that students take the next level SPA course (*SPA-201*) within one academic year of the completion of this course.

SPA-201 Intermediate Spanish 1
3 credits/3 class hours
Prerequisite: Completion of *SPA-102* with a grade of C or better

The course builds on the skills acquired during the elementary Spanish language sequence. It includes a functional review of the basic language structure and grammar, then goes on to introduce more complex structures. The course has a strong cultural component. It is recommended that students take the next level SPA course (*SPA-202*) within one academic year of the completion of this course.

SPA-202 Intermediate Spanish 2
3 credits/3 class hours
Prerequisite: Completion of *SPA-201* with a grade of C or better

This course is a continuation of the *Intermediate Spanish 1*. Students continue to refine their language abilities, increase grammar comprehension and enhance their vocabulary. All grammatical structures are covered. The course has a very strong cultural component. It is recommended that students take the next level SPA course (*SPA-207*) or (*SPA-210*) within one academic year of the completion of this course.

SPA-207 Spanish Grammar and Composition
3 credits/3 class hours
Prerequisite: Completion of *SPA-202* with a grade of C or better

This course reviews Spanish grammar and is designed to aid the students in vocabulary building, improving their knowledge of idiomatic usage and their ability to translate from English to Spanish. In addition, the students will learn to compose formal documents pertinent to everyday life and the workplace. Emphasis will also be placed on proper use of grammar while speaking in the classroom.

SPA-210 Spanish Conversation
3 credits/3 class hours
Prerequisite: Completion of *SPA-201* with a grade of C or better

This course enhances conversational abilities and the development of oral proficiency in Spanish. Although the emphasis is on speaking and listening skills, reading and writing assignments are also an important part of the course. Certain grammar points are reviewed, but communicative competence is not assessed solely by grammatical competence. This course helps students to improve their conversational abilities, pronunciation and increases their vocabulary through readings, films and other authentic materials.

Speech (SPH)

SPH-101 Oral Communication
3 credits/3 class hours
Prerequisite: *ENG-100*



This is a course to develop the students' skill in the organization and oral expression of ideas. Emphasis is on the way people communicate effectively in professional, business and social situations.

SPH-102 Voice and Speech
3 credits/3 class hours
Prerequisite: Eligibility for *ENG-100*

This is a course which helps students improve their speech through the elimination of faulty voice and articulation habits. Attention is given to such skills as volume, pitch, resonance, rate, phrasing, pronunciation and articulation. Tape recordings are used to analyze problems and note progress.

SPH-105 Discussion
3 credits/3 class hours
Prerequisite: Eligibility for *ENG-101*

This course provides a study of the techniques involved in effective group discussion. The functions of both the leader and participant are analyzed and then applied. Primary emphasis is given to decision-making and information sharing in small groups with special attention to large-group discussion.

SPH-106 Interpersonal Communication Skills for the Workplace
3 credits/3 class hours
Prerequisite: *ENG-100*

This course examines communication knowledge and skills with an emphasis on identification and application of the skills needed to successfully communicate on a personal level, in the workplace and among different cultures.

SPH-202 Oral Interpretation
3 credits/3 class hours
Prerequisite: Eligibility for *ENG-101*

This is a study of the art of interpreting literature including voice training, analysis of material and elements of expressive action. The student is given opportunities for practice in the analysis and oral presentation of prose, poetry and drama.

Structural Ironworking Technology (STI)

STI-115 Ironworker Rigging 1
1 credit/1 class hour

This course provides an introduction to rigging. Emphasis will be placed on the history of rigging, fiber line, knot tying and basic choker hitches.

STI-116 Ironworker Reinforcing 1.1
1 credit/1 lecture hour

This course is designed to provide the first year apprentice with a basic understanding of reinforced concrete including its history, manufacturing, safety, marking, structural forms and different bar size identification. This course will also include the installation and typing of reinforcing bars.

STI-117 Ironworker Reinforcing 1.2
1 credit/1 lecture hour
Prerequisite: *STI-116*

This course is a continuation of Reinforcing 1.1. It presents more in-depth study of reinforced concrete and detailed blueprints.

STI-120 Ornamental Ironworking 1.1
1 credit/1 lecture hour

This course is designed to provide the first year apprentice with the basic concepts and knowledge of the tools utilized in performing ornamental ironwork.

STI-121 Ornamental Ironworking 1.2
1 credit/1 lecture hour

This course is designed to instill in the first year apprentice the importance of proper layout techniques in both fabrication and erection and the need for precision in measuring and utilizing power tools. Also included are basic blueprint reading and proper techniques for constructing curtain wall and window wall.

STI-124 Ironworker Safety Union 1.1
1 credit/1 lecture hour

This course is designed to orient the first year apprentice in the basic safety regulations of the construction industry, the proper attitude and work ethic expected and the basic knots used in the construction field. An OSHA 10-hour card will be issued at the culmination of the course.

STI-125 Ironworker Safety 1.2
1 credit/1 lecture hour

This course is designed to provide training to safely erect and use various scaffolding on the job site. Also included in this course is shields safety training which is a requirement for working in the US steel plants.

STI-126 Structural Ironworking 1.1
1 credit/1 lecture hour

This course provides an introduction to the basic elements of structural steel assembly. Emphasis will be placed upon the basic tools and their safe use. OSHA Subpart R safety training is also included in this course.

STI-127 Structural Ironworking 1.2
1 credit/1 lecture hour
Prerequisite: *STI-126*

This course provides an introduction to the bolting and the installation of perimeter safety cable on structural steel. Emphasis will be placed upon the safe practices involved in the detailing of structural steel. An introduction to blueprint reading is also included in this course.

STI-128 Structural Ironworking 1.3
1 credit/1 lecture hour
Prerequisite: *STI-127*

This course expands on the installation and erection of structural steel. Emphasis will be placed upon the installation of steel decking and the plumbing of structural steel. Crane identification, applications and hand signals will also be discussed.

STI-220 Ironworker Rigging 2
1 credit/1 lecture hour

This course offers advanced rigging techniques. Emphasis will be placed on wire rope, slings and common rigging hardware

STI-222 Ornamental Ironworking 2.1
2 credits/1 lecture & 1 lab hours

This course is designed to teach the second year apprentice the basics of sealants and their applications. Also included in this course is the proper set-up and utilization of a leveling instrument in construction.

STI-223 Ironworker Safety/Union Agreement 2.1
3 credits/2 lecture & 1 lab hours

This course is designed to review the various union documents that govern the union. This course is also designed to certify the apprentice in first aid/CPR and user/driver qualification for various hydraulic lifts used in the construction field.

STI-224 Ironwork Reinforcing 2-Unbonded Post-tensioning
3 credits/2 lecture and 1 lab hours

This course is designed to instruct the apprentice in the proper care, installation and stressing of unbonded post-tensioning systems. The student will also prepare for Level One Post-tension Certification.

STI-225 Structural Ironworking 2.1
1 credit/1 lecture hour

This course is designed to teach the installation and detailing of pre-engineered metal buildings.

STI-226 Structural Ironworking 2.2
1 credit/1 lecture hour
Prerequisite: *STI-225*

This course is designed to expand upon detailing of structural steel. It also provides more in-depth training in the reading and utilization of structural blueprints.

STI-227 Structural Ironworking 2.3
1 credit/1 lecture hour
Prerequisite: *STI-226*

This course is designed to give the ironworking student a greater understanding of cranes. Emphasis will be placed upon understanding a crane's capacity and reading crane charts. How to size a crane and work with boom lengths will also be covered.

STI-301 Ornamental Ironworking 3.1
1 credit/1 lecture hour

This course is designed to familiarize the apprentice with transits and theodolites used in doing layout on construction projects.

STI-302 Ornamental Ironworking 3.2
1 credit/1 lecture hour
Prerequisite: *STI-301*

This course is designed to familiarize the apprentice with different curtain wall and window wall manufacturers in the market place and provide tactile experience in fabricating a small "mock-up."

STI-303 Ironworker Safety 3.1
3 credits/3 lecture hours

This course is designed to fulfill the necessary requirements for OSHA 30-hour certification. This course also includes the necessary training for MSHA certification. Scaffold erector cards will be issued at the conclusion of this course.

STI-304 Structural Ironworking 3.1
1 credit/1 lecture hour

This course is designed to give the ironworking student a complete understanding of reading and interpreting blueprints used in the ironworking industry. Students will work with architectural, structural and detail blueprints.

STI-306 Structural Ironworking 3.2
1 credit/1 lecture hour
Prerequisite: *STI-304*

This course is designed to teach the finer points of setting up and supervising a structural steel erection job.

STI-307 Structural Ironworking 3.3
1 credit/1 lecture hour
Prerequisite: *STI-306*

This course is designed to prepare students to erect and detail pre-cast concrete products

STI-308 Ironworker Rigging 3
1 credit/1 lecture hour

This course is designed to give the ironworker a more in-depth approach to solving complicated rigging problems. Emphasis will be placed on computing volume and weights of materials and the use of unconventional rigging components. A qualified riggers card will be issued upon completion of this course.

STI-309 Ironworker Reinforcing 3.1
1 credit/1 lecture hour

This course is designed to illustrate the proper layout, design and installation of reinforcing steel for concrete. The course also includes reading and interpretation reinforcing placement and drawings.

STI-310 Ironworker Reinforcing 3.2
1 credit/1 lecture hour
Prerequisite: *STI-309*

This course is designed to instruct the proper layout, design and installation of post-tensioning tendons for concrete. The course also includes reading and interpreting of post-tensioning placement and support drawings.

STI-311 Ironworker Foreman Training Supervision
1 credit/1 lecture hour

This course is designed to prepare the apprentice for a leadership position as a foreman. Students will learn the roles and responsibilities of being a foreman. They will learn how to create an effective work team, communicate effectively, apply problem solving skills, document and maintain records; plan and schedule work and implement a safety program.

Surgical Technology (SUR)

SUR-110 Surgical and Central Service Technology 1
5 credits/4 class & 2 lab hours
Prerequisite: Acceptance into the Central Services Technology (CST) or Surgical Technology (SUR) programs.

This course is designed to acquaint the student with the Operating Room and Central Service. The student is introduced to the environment, the history of surgery, legal and ethical responsibilities of the health care professional, professionalism and human relationships, computers, robotics and physics as they relate to surgery and Central Service. Emphasis is placed on asepsis, infection control, basic instrumentation, sterilization, disinfection and basic patient care skills:

SUR-120 Surgical Technology 2
6 credits/4 class & 4 lab hours
Prerequisite: *SUR-110*

This course is designed to build on the theoretical foundation of *SUR-110 Surgical and Central Service Technology 1* with emphasis on nomenclature, the application of the principles of aseptic technique, wound healing, wound closure materials and surgical drains. The student will be introduced to radiographic procedures and techniques as well as principles and application of electrosurgical generators and lasers. The student will learn how to integrate the surgical supplies and equipment as they relate to opening and closing an abdominal incision as well as minimally invasive surgery.

SUR-230 Surgical Technology 3
7 credits/6 class & 2 lab hours
Prerequisite: *SUR-120*
Corequisite: *SUR-231*

This course continues the theoretical foundation of *SUR-110 Surgical and Central Service Technology 1* and *SUR-120 Surgical Technology 2*. The student is introduced to the specialty areas of surgery and the application of basic scientific knowledge to specific surgical procedures. Specialty areas include general surgery, gynecology, orthopedics, peripheral vascular, cardiac, thoracic, genitourinary, endoscopic and laser surgery. This course will also introduce the student to the pharmacology of surgically related drugs and anesthetic agents, including the calculation of dosages and the effects of drugs and anesthetic agents on the human body.

SUR-231 Surgical Technology Clinical 1
6 credits/8 clinical hours per day/3 days a week
Prerequisite: *SUR-120*
Corequisite: *SUR-230*

This course allows a student to transfer and apply theoretical knowledge to the clinical setting. Students receive concentrated exposure to surgical procedures.

SUR-240 Surgical Technology 4
6 credits/6 class & 2 lab hours
Prerequisite: *SUR-230*
Corequisite: *SUR-241*

This course expands on the theoretical foundations of *SUR-110 Surgical and Central Service Technology 1*, *SUR-120 Surgical Technology 2* and *SUR-230 Surgical Technology 3*. Emphasis is placed on complex surgical procedures, utilization of surgical microscopes, care and handling of microsurgical instruments, advanced patient care concepts, preparation for all types of hazards and employability skills. Specialty areas include ophthalmology, otolaryngology and oral surgery, neurosurgery, plastic and reconstructive surgery, pediatric surgery, advanced patient care concepts and procedures involving organ procurement and transplant, surgical oncology, trauma surgery and patients with special needs. Employability skills and all-hazards preparation are also addressed in this course.

SUR-241 Surgical Technology Clinical 2
6 credits/8 clinical hours per day/3 days a week
Prerequisite: *SUR-231*
Corequisite: *SUR-240*

This course allows a student to transfer and apply theoretical knowledge to the clinical setting and develop the sophisticated skills required for specialty surgical procedures.

Theatre (THE)

(see also Dance DAN)

THE-101 Introduction to Theatre
3 credits/3 class hours
Prerequisite: Eligibility for *ENG-101*



This course is a comprehensive study of theatre from many perspectives: theatrical, artistic and historical. Emphasis is on plays, playwrights and a critical analysis of theatre, past and present.

THE-104 Modern Drama
3 credits/3 class hours

This course is a study of plays which illustrate the effect of modern psychology on the development of drama in the 20th century. Dramatic realism and naturalism, expressionism, surrealism and absurdism are examined. The course includes a survey of dominant contemporary trends in theatre.

THE-108 Acting 1
3 credits/3 class hours

This course introduces the inexperienced student to acting. Goals are to survey and understand tools (voice, body and mind) an actor must use in a performance. Practice is provided in the technical skills of movement sensory perceptions, motivation, voice and diction. Practical application occurs through presentation of monologues in classroom.

THE-109 Acting 2
3 credits/3 class hours
Prerequisite: *THE-108* or permission of instructor

This course is a continuation of the skills and knowledge developed in Acting 1. Emphasis is upon selecting appropriate monologues within the modern theatre repertory. Students will learn and rehearse scenes and present final performances to audience.

THE-116 Physical Approaches to Acting 1
3 credits/1 lecture & 2 studio hours

This course will explore the craft of acting through a physical approach that emphasizes imagination, awareness of one's self and a connection to the world (be it real, or the world of the play) through one's senses. Through individual and ensemble exercises, the students will work toward a sense of ease, readiness, support, balance and awareness in their physical and vocal production. Students will work toward clarity and expressiveness in their acting, while also exploring the integration of movement and vocal production.

THE-117 Theatre Production 1
3 credits/3 class & 2 studio hours

In this course, all phases of producing a theatrical event are studied through the application of skills to performance. The course explores the relationship between actors, producers and technicians while including the concepts of music, publicity and stage management. Students participate in the production of one or more plays scheduled for performance during the term.

THE-118 Theatre Production 2
3 credits/3 class & 2 studio hours

In this course students explore further all phases of producing theatrical performances. Basic construction methods are practiced. Fundamental concepts in lighting, sound design, scenic design and painting are explored.

THE-119 Introduction to Stage Direction
3 credits/3 class hours

This course is a study in applied and directed stage movement. Students learn to arrange actors on stage for visual clarity and dramatic effect. Techniques of script analysis, rhythmic phrasing and effective group planning are examined. This course is intended for teachers, counselors and other group leaders as well as for actors and directors in the theatre.

THE-121 Technical Theatre 1
3 credits/3 class & 1 studio hours

This is an introduction to the theoretical elements of technical theatre. Lighting, design, sound reinforcement, stage rigging, scenic construction and painting techniques will be covered. Students will have the opportunity to apply their skills in various productions.

THE-122 Technical Theatre 2
3 credits/3 class & 1 studio hours
Prerequisite: *THE-121*

In this course students will refine the skills learned in Technical Theatre 1. Computer lighting and sound control will be introduced. Advanced scenic construction techniques will be presented as well as the duties and responsibilities of theatre personnel.

THE-130 Acting Practicum 1
3 credits/3 class & 3 studio hours

This is a course designed to introduce the beginning acting student to a rehearsal and performance sequence. It includes training the actor to understand voice, body and mind as it relates to character and the play. Significant participation in the rehearsal process will lead to confidence and quality in performance. A term performance will be required.

THE-154 Introduction to Cinema
3 credits/3 class hours

This course is a critical survey of the motion pictures. The focus is on the literary, technical, social and cultural development of film. A historical and technical text is combined with critical, in-depth analysis of films.

THE-155 Improvisation
3 credits/3 class hours

This course is a practical introduction to the principles of improvising dramatic scenes from a simple situation premise. Course material includes a variety of theatre games through which students gain experience in role-playing, psycho-drama and skit-making. Course material is intended for general application by teachers, counselors and other group leaders as well as actors in the theatre.

THE-210 Acting for Television
3 credits/3 class hours

This course provides an introduction to television and film acting techniques. Actor relationship to the camera and other technical information is discussed. Exercises, monologues and scenes are developed and videotaped for personal record.

THE-216 Film Worker 1
3 credits/2 class & 1 studio hours

This course is designed to introduce the student to several categories of tasks in the film making process. The course will focus on: film construction, film scenic painting, set dressing and art decoration, wardrobe and costume construction. Each component will be defined and developed

THE-219 Physical Approaches to Acting 2
3 credits/1 class & 2 studio hours
Prerequisite: *THE-116*

This course is a continuation of *THE-116, Physical Approaches to Acting 1*, and explores the craft of acting through physical approaches that emphasize finding inspiration and connection to the world of the play through one's imagination, awareness of one's self and one's senses. Through individual and ensemble exercises the student will work toward a sense of ease, readiness, support, balance and awareness in their physical and vocal production. Returning students will work toward further clarity and expressiveness in their work, in addition to increased specificity in choices and articulation of their processes.

THE-221 Introduction to Lighting Design
3 credits/3 class hours
Prerequisite: *THE-121*

This course will provide students with the skills necessary to work as a lighting designer, lighting technician or master electrician in a professional theatre.

THE-222 Stage Make-up
3 credits/1 class & 2 studio hours
Prerequisite: *THE-101*

This course focuses on the principles of corrective and character make-up with intensive practical application in a laboratory setting. Practical experience in application is gained through the semester's stage production.

THE-223 Stage Management
3 credits/3 class & 1 lab hours
Prerequisite: *THE-117*

This course is an introduction to Stage Management. Each student will have the opportunity to stage manage their own short production, concentrating on the crucial organizational aspects of this theatrical component.

THE-226 Film worker 2
3 credits/2 class & 1 studio hours

This course is designed to introduce the student to several categories of tasks in the film making process. This course will focus on: becoming a film grip, becoming a film electrician, craft services, locations and scouting, sound mixing and video assist, becoming a production assistant. Each component will be defined and developed.

Tourism Management (TRV)

TRV-101 Introduction to Travel and Tourism 3 credits/3 class hours

This course provides an introduction to the concepts, methods and practices of leisure, recreation and tourism studies. It also provides an overview of the travel and tourism industry.

TRV-102 Cruises and Tours Marketing and Sales 3 credits/3 class hours

This course provides an overview of cruise and tour products. Students learn how to identify clients, overcome objections and meet the traveler's needs in a professional manner. The course serves as a guide for students who wish to obtain positions in the tour and cruise industry.

TRV-103 Destinations Geography 1: US, Canada and Mexico 3 credits/3 class hours

This course provides students with an overview of the major areas of North America's most frequented leisure and business destinations. Emphasis is on geographical location, topography, climate, language, culture, tourist attractions, points of interest, airport locations and internal transportation systems of the popular North American destinations such as New York City, Los Angeles, Hawaii, Ontario, the Pacific Southwest, the National Parks, Walt Disney World and Cancun.

TRV-104 Destinations Geography 2: South America, Central America, Caribbean, Asia and South Pacific 3 credits/3 class hours

This course provides students with an overview of South America, Central America, the Caribbean, Asia and South Pacific's most frequented leisure and business destinations. Emphasis is on geographical location, topography, climate, language, culture, tourist attractions, points of interest, airport location and internal transportation systems of the popular destinations such as the Panama Canal, Rio de Janeiro, Hong Kong, Tokyo, Fiji and Australia.

TRV-224 Events, Meetings and Convention Services 3 credits/3 class hours

This course provides students with an overview of conventions and meetings markets and group business sales strategies. It defines the scope and segmentation of the convention group business market and prepares students to fulfill convention meeting contracts.

Transportation Security Administration (TSA)

TSA-101 Introduction to Homeland Security 3 credits/3 lecture hours

This course will introduce students to the vocabulary and import components of homeland security. The importance of agencies associated with Homeland Security and their interrelated duties and relationships will be reviewed. The course will examine historical events and state, national and international laws that impact Homeland Security.

TSA-102 Intelligence Analysis and Security Management 3 credits/3 lecture hours

This course examines intelligence analysis and its indispensable relationship to the security management of terrorist attacks, man-made disasters and natural disasters. It also explores vulnerabilities of our national defense and private sectors, as well as the threats posed to these institutions by terrorists, man-made disasters and natural disasters. Students will discuss substantive issues regarding intelligence support of homeland security measures implemented by the United States and explore how the intelligence community operates.

TSA-103 Transportation and Border Security 3 credits/3 lecture hours

This course provides an overview of modern border and transportation security challenges, as well as different methods employed to address these challenges. The course will review the time period from post 9-11 to the present. The course explores topics associated with border security and security for transportation infrastructure to include: seaports, ships, aircraft, airports, trains, train stations, trucks, highways, bridges, rails lines, pipelines and buses. Exploration of technological solutions employed to enhance security of borders and transportation systems will be discussed. Students will be required to discuss the legal, economic, political and cultural concerns and impacts associated with transportation and border security. The course provides students with a knowledge-level understanding of the variety of challenges inherent in transportation and border security.

Welding Technology (WLD)

WLD-101 Welding Fundamentals 3 credits/2 lecture & 2 lab hours

This is a course on theory and safety procedures. Students develop competency in the following shielded metal-arc welding procedures: stringer beads, butt welds and T-joints in the flat and horizontal positions. Students become familiar with oxy-fuel flame cutting equipment and its application.

WLD-102 Advanced Welding 3 credits/2 lecture & 2 lab hours Prerequisite: *WLD-101*

This is a course on out-of-position shielded metal-arc welding with emphasis on proper heats, electrode selections and AC/DC currents. Welding positions include horizontal, vertical and overhead.

WLD-103 Welding Safety and Applications 1 credit/1 class hour

This course is designed to give the student an overview of the oxy-fuel cutting, welding, braze welding and the GMAW (gas metal arc welding) processes. Safety and theory will be explained and hands-on welding techniques will be taught in the welding lab.

WLD-107 Blueprint Reading for Welders 3 credits/1 lecture & 3 lab hours

This course is designed to assist students in the development of skills necessary to interpret sketches and prints common to the metal working field. The course will begin with simple drafting concepts and sketching techniques and cover the metal structural shapes used by welders, auxiliary views, detailed views, projections, sections, detail and assembly drawings. American Welding Society standard welding symbols will be taught, as well as basic math, which will include decimals and fractions.

WLD-180 Ironworker Welding 1.1 1 credit/1 lecture hour

This course is designed to introduce the apprentice ironworker to electric arc welding and oxygen-fuel flame cutting. Emphasis will be placed upon safety procedures and proper equipment set up and usage. Some basic arc welding and torch cutting will be performed.

WLD-181 Ironworker Welding 1.2 1 credit/1 lecture hour Prerequisite: *WLD-180*

This course is a continuation of electric arc welding and oxygen-fuel flame cutting. Emphasis will be placed upon safety procedures and proper equipment set up and usage. Additional basic arc welding and torch cutting will be performed.

WLD-182 Ironworker Welding 1.3

1 credit/1 lecture hour
Prerequisite: *WLD-181*

This course is a continuation of electric arc welding and oxygen-fuel flame cutting. Emphasis will be placed upon electrode groups and classifications.

WLD-184 Ironworker Welding 1.4

1 credit/1 lecture hour
Prerequisite: *WLD-182*

This course is designed to enhance the apprentice ironworker's welding skills. Emphasis will be placed upon arc length, travel speed, starts and stops.

WLD-196 Welding for Plumbers 1

3 credits/3 lecture & 2 lab hours

This welding course is designed to provide basic welding skills for the plumbing industry. The course includes theory and safety procedures in oxyacetylene cutting, soldering and brazing of copper tubing.

WLD-201 Preparation for Welding Certification

3 credits/2 lecture & 2 lab hours
Prerequisite: *WLD-102*

This is an advanced course in shielded metal arc welding procedures to prepare for industrial certification. This includes welding single-vee groove weld-but joints with backing strips in the flat, horizontal, vertical and overhead positions, following the American Welding Society (AWS) code specifications. Testing materials and fee for AWS certification are added to this course.

WLD-202 MIG and TIG Processes

3 credits/2 lecture & 2 lab hours
Prerequisite: *WLD-201*

This is a course on the theory and application of gas metal-arc welding (GMAW), flux-cored arc welding (FCAW) and gas tungsten arc welding (GTAW) processes.

WLD-208 Advanced Drawing and Reading for Fabrication

3 credits/3 lecture hours
Prerequisites: *WLD-107 & MAT-191*

This course prepares students for fitting and fabrication detail work within the welding shop. Students will learn to apply their blueprint reading skills in structural and plate layout. Additionally, students will utilize triangulation and centerline interpretation from shop drawings.

WLD-211 Welding Inspection

3 credits/2 lecture & 2 lab hours

This is a course in the more popular methods of non-destructive testing applied to a variety of metal shapes. Existing non-destructive testing installations and equipment are discussed. Non-destructive test principles are explored in the following methods: liquid penetrants and magnetic particle inspection, X-ray radiology, ultrasonics and eddy current in action.

WLD-217 MIG Flux Core Certification

3 credits/2 lecture & 2 lab hours
Prerequisite: *WLD-202*

This is an advanced course in MIG flux core arc welding procedures to prepare for industry certification. This includes flux core arc welding of single v-groove weld-but joints and backing strips in the flat, horizontal and vertical positions in compliance with the American Welding Society (AWS) code specifications. Testing materials and fee for AWS certification are added to this course.

WLD-221 Brazing and Welding

3 credits/2 lecture & 2 lab hours

This is a course for students of technical programs. Covered are soldering and brazing of copper and steel, cutting and welding of steel using oxyacetylene and electric arc welding of plate and sheet metal. Theory and safety of the above processes will be taught.

WLD-222 Pipe Welding 1—Basic

3 credits/2 lecture & 2 lab hours
Prerequisite: *WLD-201*

This course provides students with knowledge and skills to effectively begin basic techniques of uphill shielded metal-arc welding (SMAW) for pipe. Uphill welding is generally used on thick-wall pipe. Students will practice their basic skills on metal plates before transitioning to 6" diameter pipe. The American Society of Mechanical Engineers (ASME) and American Welding Society (AWS) code specifications will be followed.

WLD-223 Pipe Welding 2—Advanced

3 credits/2 lecture & 2 lab hours
Prerequisite: *WLD-222*

This course provided students with knowledge and skills to prepare for American Society of Mechanical Engineers (ASME) and American Welding Society (AWS) pipe welding certification in uphill shielded metal-arc welding (SMAW) for 6" diameter, schedule 80 pipe in the 6G (45 degree) fixed position. Testing materials and fee for AWS certification are added to this course.

WLD-224 Pipe Welding 3—Downhill

3 credits/2 lecture & 2 lab hours
Prerequisite: *WLD-223*

This course provides students with knowledge and skills to prepare for the American Petroleum Institute (API) downhill shielded metal-arc pipe welding process and certification. This process is employed by the Marcellus Shale industry to connect natural gas cross country transmission pipelines. Students will also be introduced to the branch tee takeoff, which includes laying out, cutting and welding. The testing fee for the downhill shielded metal-arc pipe welding certification is added to the tuition for this course.

WLD-285 Ironworker Welding 2.1

1 credit/1 lecture hour

This course is designed to teach the apprentice ironworker how to troubleshoot a welding problem. Emphasis will be placed on improving overall weld quality. Types of weld joints will also be discussed.

WLD-287 Ironworker Welding 2.2

1 credit/1 lecture hour
Prerequisite: *WLD-285*

This course is designed to provide training needs to certify a welder in Shielded Metal Arc Welding. Emphasis will be placed on taking an AWS "1" groove weld certification in the 3G and 4G positions. Welding symbols will also be discussed.

WLD-288 Ironworker Welding 2.3

1 credit/1 lecture hour
Prerequisite: *WLD-287*

This course finishes off the SMAW courses. Emphasis will be placed on complex weld symbols and welding stainless steel. The student will also field fabricate a finished beam from a detail drawing. This course provides training in the remaining components of SMAW courses.

WLD-289 Ironworker Welding 2.4

1 credit/1 lecture hour

This course is designed to introduce the student to flux-cored automatic welding, FCAW. Emphasis will be placed on the basic principles of FCAW and the safety hazards associated with FCAW. Fluxing off welds and demolition cutting with oxy-fuel cutting torches will also be demonstrated.

WLD-295 GMAW and Welding Fundamentals

3 credits/2 lecture & 2 lab hours

This is a sheet metal apprentice course in the welding of sheet metal 12 gauge and lighter. The course will cover welding safety, basic maintenance and operation of cutting torches and GMAW equipment. Students will practice welding fundamentals taught in both flame cutting and multiple position welds on black iron in the GMAW process.

WLD-296 SMAW and Applied Fundamentals

3 credits/2 lecture & 2 lab hours

Prerequisite: *WLD-295*Corequisite: *MAT-191*

This is a sheet metal apprentice course in SMAW applications to light gauge carbon steels. Students will learn the fundamentals of the SMAW process and applications for the sheetmetal industry. Instruction will cover inspection and maintenance of equipment, as well as minor repairs. Extensive practice of SMAW welding is included.

WLD-297 GTAW Processes

3 credits/2 lecture & 2 lab hours

Prerequisite: *WLD-296*Corequisite: *WLD-295*

This Sheet Metal Apprentice course is an application of the GMAW welding process as it applies to the industrial, food service and ornamental metal industries. Students will perform work on both aluminum and stainless steel. Work will focus on applying basic welding skills to applications which require much more discipline and advanced technique.

WLD-298 Industrial Metal Applications

4 credits/2 lecture & 4 lab hours

Prerequisite: *WLD-297*Corequisite: *WLD-296*

This is a sheet metal apprentice course in welding techniques associated with ferrous and non-ferrous metals thicker than .0625". Use of advanced techniques for both GMAW and SMAW welding processes will be covered. AWS welding procedures and certification testing procedures will be explained and practiced.

WLD-380 Ironworker Welding 3.1

1 credit/1 lecture hour

Prerequisite: *WLD-289*

This course is designed to present a better understanding of additional components of flux-cored automatic welding, FCAW. Emphasis will be deposition rates, shielding gases and welding in the 3G and 4G positions.

WLD-381 Ironworker Welding 3.2

1 credit/1 lecture hour

Prerequisite: *WLD-380*

This course is designed to provide understanding of advanced components of flux-cored automatic welding, FCAW. Emphasis will be electrode groups and classifications. Students will take an AWS D1.1/1.5 welder certification test in FCAW.

WLD-382 Ironworker Welding 3.3

1 credit/1 lecture hour

Prerequisite: *WLD-380*

This course is designed to present the student with components of carbon arc-gouging and cutting. Emphasis will be placed on set-up, electrodes and rod manipulation. Destructive and non-destructive weld testing will also be discussed.

PA TRAC Courses at CCAC

The following is a listing of 49 CCAC courses that are approved for the PA Trac Transfer Framework. These courses are easily transferred to any participating PA Trac institution. For more see the 30-credit Transfer Framework at <https://www.pacollegetransfer.com/TransferCourses>



ANT-101	Introduction to Anthropology	MAT-161	Elementary Statistics
ART-106	Art Appreciation	MAT-201	Calculus 1
ART-109	Drawing 1	MAT-202	Calculus 2
BIO-110	Introduction to Biological Science	MAT-220	Business Calculus
BIO-151	General Biology 1	MAT-250	Calculus 3
BIO-152	General Biology 2	MUS-101	Introduction to Music
BIO-161	Anatomy & Physiology 1	PHL-101	Introduction to Philosophy
BIO-162	Anatomy & Physiology 2	PHL-103	Logic
CHM-109	Introduction to Chemistry	PHL-155	Ethics
CHM-110	Introduction to Chemistry	PHS-107	Introduction to Astronomy
CHM-111	Introduction to Chemistry Laboratory	PHY-141	Physics 1
CHM-151	General Chemistry 1	PHY-142	Physics 2
CHM-152	General Chemistry 2	POL-101	Introduction to Political Science
ECO-102	Principles of Macroeconomics	POL-103	American Government
ECO-103	Principles of Microeconomics	PSY-101	Introduction to Psychology
ENG-101	English Composition 1	PSY-108	Human Growth and Development
ENG-102	English Composition 2	PSY-201	Educational Psychology
ENG-115	General Literature	PSY-210	Child Psychology
ENG-202	Fiction	SOC-101	Introduction to Sociology
HIS-101	History of Western Civilization 1	SOC-212	Social Problems
HIS-102	History of Western Civilization 2	SPH-101	Speech
HIS-104	United States History 1	THE-101	Theatre
HIS-105	United States History 2		
MAT-102	Mathematics Concepts		Foreign Languages
MAT-108	Intermediate Algebra	FRE-101	Elementary French 1
MAT-142	Pre-calculus	SPA-101	Elementary Spanish 1
		SPA-102	Elementary Spanish 2

For the general description of the PA Trac Transfer Credit Framework see the next page.

PA Trac Transfer Credit Framework

Students who successfully complete courses from the categories below may transfer those credits toward graduation requirements of nearly any major offered by the participating institutions. Please be aware that certain majors may have specific requirements prescribed by external agencies. Students should work with an advisor to select appropriate courses as they relate to the major.



Category 1 3-4 credits total	English Composition 1 and 2
Category 2 3-4 credits total	Oral Communications
Category 3 min 3-4 credits; max 6-8	Mathematics Concepts Intermediate Algebra Elementary Statistics Precalculus, Calculus 1, Calculus 2, Calculus 3 Business Calculus (or Analytical Methods (MAT-120)???)
Category 4 min 3-4 credits; max 6-8	Introduction to Biological Science General Biology 1 (majors & non-majors courses) General Biology 2 (majors & non-majors courses) Introduction to Chemistry Introductory Chemistry Introductory Chemistry Laboratory General Chemistry 1 (majors & non-majors courses) General Chemistry 2 (majors & non-majors courses) General Physics 1 (non-calculus) General Physics 2 (non-calculus) Anatomy & Physiology 1 Anatomy & Physiology 2 Introductory Astronomy
Category 5 min 3-4 credits; max 6-8	Introduction to Psychology Human Growth and Development Educational Psychology Child Psychology Introduction to Sociology Social Problems American Government Educational Psychology History of Western Civilization 2 Principles of Macroeconomics Principles of Microeconomics US History 1 US History 2 Introduction to Anthropology
Category 6 min 3-4 credits; credits; max 6-8	Introduction to Music Introduction to Philosophy Ethics Elementary Spanish 1 Elementary Spanish 2 Elementary French 1 Elementary French 2 Art Appreciation Drawing 1 Painting 1 General Literature Introduction to Theatre

STUDENT NOTES

Administration & Academic Community

CCAC Administrative Offices

Office of the Provost/Executive Vice President for Academic & Student Affairs

—Gretchen E. Mullin-Sawicki, PhD (Acting)
 Administrative Assistant—Heather Murphy
 Administrative Assistant—Suzanne McHenry
Grant Project Development Director—Carol Yoannone, EdD
 Grants Development Coordinator—Kathy Weir
 Grant Resource Associate—Natasha Walton
Financial Aid Executive Director—Jamie Hightower-Poindexter
 Business Analyst—Margaret Barton
Frieda G. Shapira Center for Learning through Service
 Assistant Vice President—Richard Adams
 Perkins Grant Director—Norman Downey
 Keys Program Coordinator—Linda Rohrbaugh
 Student Support Specialist—Sheryl Curtis & Barbara Kaleugher
Information Technology Services
 Assistant Vice President & Chief Information Officer
 —Ibrahim Garbioglu
 Systems Analysis & ERP Support Manager—Alan Bickerton
 Lead Systems Analyst—Deborah Barb
 Lead Developer & Database Administrator—Jason Lander
 Systems Analyst II—Gary Bercik & Ashley Dignon
 Application Development & Integrator—Mark Spano & Joseph Strayer
 Operation Center Manager—Georgeann Cochran
 Customer Support Training Manager—Stacy Silvis (Acting)
 Application Analyst Trainer—Ross Donehue
 Service Desk Analyst—Kathy Hillen, Thomas Clark & Nancy Seman
 Lead Senior Network Engineer—Steve Witsch
 Sr. Network Engineer—Rajendra Pal
 Network Engineer III—Brandon Poyner, Thomas Streiff & Robert Winners
 Network Engineer II—Byarr Meekins & Jonathan Dolny
 Network Engineer I—James Pifko
 Field Operations Director—Michael O'Brien
 Assistant Director—Megan Rice
 User Support Analyst—Daniel Russell, Travis McClellan, Wayne Krivoniak, Timothy Myers & C. Scott Hopkins
 Computer Hardware/Software Tech—Dominic Grasso, Charles Piantiny, Emily Birch, Gary Fisher, Krsnadasa Roka, Thomas DeLong & Roseann Knoerl
Learning Outcomes & Achieving the Dream
 Director—Mary Kate Quinlan
Nursing Dean—Kathy L. Mayle
 Nursing Education Data & Adjunct Faculty Administrator—Devon George
 RN Achievement Grant Project Manager—Sherry Cottom
Online Learning Director—Dwight Bishop, EdD
 Instructional Technologist—Justin Busch
 Online Support Specialist—Tawanda Wright

Office of the Provost/Executive Vice President for Academic & Student Affairs (continued)

Registrar—Diane Jacobs, EdD
Planning & Institutional Research
 Assistant Vice President—Kevin Smay
 Planning & Research Assistant Director—Giovanni Garofalo
 Analyst—Lucy Wang
 Associate—Brent Myers
Title III Grant Coordinator of Learning Commons
 —ErikaLynn Mwenze
Veterans Services Coordinator—Dwight Boddorf
 Student Success Facilitator—Daphne Rees, Priscilla Robertson & Sharmyn Straughters

Office of the Vice President for Workforce Development

Vice President—Theresa Bryant
 Administrative Assistant—Patricia Burnett
 Assistant Vice President & Dean Workforce Development—vacant
Business & Community Operations
 Director—Lawrence Furlong
 Operations Coordinator—Cynthia Safran
Community Training & Development
 College Director—Mary Jo Guercio, EdD
 Human Services Coordinator—Beth Ison
 Training Coordinator—Susan Kennedy
 Project Manager—Sylvia Elsayed
 Instructional Designer—Paul Blackford
Project Manager—Anne Tanski
 Public Safety Assistant Director—Richard Hilinski
Community Education Director—Elizabeth Sommers & Debra Killmeyer (Acting)

Office of Vice President for Finance

Vice President Finance—Joyce Breckenridge
 Administrative Assistant—Shelly Hawkins-Lee
Finance & Controller
 Assistant Vice President Controller—Paul Swearengin
 Accounting Director—Constance Dyer
 Accounts Payable Supervisor—Arlene O'Leary
 Restricted Funds Accountant—Lori Rossick
 Payroll Director—Jill Schutz
 Bursar—Kenneth Bush
 Senior Staff Accountant—Joe Miller
 Budget Coordinator/Analyst—John Forney
Purchasing, Contracts & Auxiliary Enterprises Management
 Assistant Vice President—vacant
 Purchasing Director—Michael Cvetic
 Contracts Director—Karen Hoskinson
Enterprise Risk Management Manager—vacant
Safety & Security (Office of College Services only)
 Director—Edward Bogats

CCAC Administrative Offices (continued)

CCAC Educational Foundation

Chief Executive Officer—Rose Ann DiCola
Major & Planned Gifts Director—Jarrett Stull
Development Director—Jodi Beemer
Foundation Relations Coordinator & Executive Assistant to the Board—Cara Huey
Alumni Affairs Coordinator—Rocco Pacella

Office of Institutional Diversity & Inclusion (OIDI)

Special Assistant to the President for Diversity & Inclusion—Clyde Pickett
Civil Rights Compliance Officer—Sumana Misra-Zets

Office of Vice President for Human Resources

Vice President—vacant
Human Resources Executive Director—Paul Schwarzmiller
Human Resources Assistant—Susan Ingold
Human Resources Director—Michael Swartzendruber
Faculty Staff Development Director—Valery Keibler
Human Resources Administrator—Shakia Robinson
Human Resources Specialist—Kathy D’Imperio
Senior Administrative Clerk—April Cole

Facilities Management

Chief Facilities Officer—vacant
Assistant Director—Raymond Marks
Energy Manager—Elaine Sadowski
Operations Manager—Richard Schlegel

Public Relations & Marketing

Executive Director—Elizabeth Johnston
Marketing Manager—Jason Price
Graphic Designer—June Marshall
Web Content Manager—Amanda Lawson
Web Producer—Jennifer Scott

College Auditor—Daniel M. Carr

Governmental & External Affairs Executive

Director—Nancilee Burzachechi, JD, CFRE

Strategic College Initiatives Executive Director

—Mary Francis Archey, EdD

Vice President & College Counsel

—Anthony L. DiTommaso, Esq.

Campus Administration

Allegheny Campus

President—Donna L. Imhoff, PhD
Administrative Assistant—Judy Collins
Academic Affairs Dean—Carol Yoannone, EdD (Interim)
Associate Dean—Richard Betters
On-site Director—Betsy Rozen
Administration Dean—Janet Christensen
Student Accounts Coordinator—Mary Mullin
Business Affairs Assistant Director—Mary Henderson
Office Services Manager—Maureen Farrell
Physical Plant Supervisor—Richard Warren
Housekeeping Supervisor—Richard Graham
Safety & Security Director—Edward Bogats
Assistant Director—David Grimes
Special Projects Director—Susan Gall
Student Development Dean—Roslyne Wilson, EdD (Interim)
Admissions Director—Robert Kmetz (Interim)
Student Recruiter—Theodore Ketchum
Counseling Services (AFT) (see page 304)
Financial Aid Director—Kevin A. Totty
Assistant Director—vacant
Case Manager/Student Success Facilitator—Jessica Rahim
International Students Director—Robert Russo
Job Placement & Career Services Director—Darla Coleman (Interim)
Employment Specialist—Anthony Wieckowski
Registration & Advisement Director—Lucille Adkins
Specialized Programs Director—Roslyne Wilson, EdD
Student Success Coach—Laura Boxer
Student Life Director—Vladimir St. Surin
Student Development Specialist—Gaina Miklusko,
 Christine McQuaide & Robert Keslar
Student Success Coach—Megan Crane & Miles Hines
Supportive Services for Students with Disabilities Director—Christopher Richardson (Interim)
Student Support Specialist—Gary Looker
Vocational Education Director—Jennifer Amrhein
Career Support Specialist—Nancy Wareham
Homewood-Brushton Center Assistant Dean
 —Jane Greenwood

Boyce Campus

President—The Honorable Charles J. Martoni, PhD
 Administrative Assistant—Janet Teti
Academic Affairs Dean—Richard Allison
 Associate Dean—Tomi Waters
Administration Dean—Nancy Jenkins
 Student Accounts/Business Assistant Coordinator
 —Catherine Brock
 Physical Plant Supervisor—Jil DeShong
 Housekeeping Supervisor—Edmund Uniatowski
Middle College Coordinator—vacant
Safety & Security Director—Mike Stowell
Student Development Dean—Yvonne Burns
Admissions Director—Elizabeth Strenkowski, PhD
 Student Recruiter—vacant
Counseling Services (AFT) (see page 304)
Financial Aid Executive Director—Jamie Hightower-Poindexter
 Assistant Director—Christine Carr
Job Placement & Career Services Director
 —Pamela Nichols
 Employment Specialist—Carol Johnson
Registration & Advisement Director—Quiana Golphin
Student Life Director—Frank Kaufman
 Student Development Specialist—David Devenzio
 & Linda Neubauer
Student Success Coach—Marshall Ellison
Supportive Services for Students with Disabilities
 Director—Patricia Florentine
 Student Support Specialist—Edward Adams
Vocational Education Director—Darlene Billeck
 Math Cafe Project Coordinator—Alycia Becloski-Brashear
Braddock Hills Center
 Assistant Dean—Gyndolyn Bradford
 MOST Project Director—Cathy Hester

North Campus

President—Mary Lou Kennedy, EdD (Acting)
 Administrative Assistant—Joan Follen
Academic Affairs Dean—David Young (Acting)
 Associate Dean—David Young
 Career & Technical Education Director—Laurel Westrom
Administration Dean—John Boehm (Acting)
 Physical Plant Supervisor—Kenneth Weber
 Housekeeping Supervisor—Aaron Kotys
Safety & Security Director—David Schwab
Student Development Dean of Student Development
 —Kristin Spiker (Acting)
Admissions Director—Rhena McCaskill
 Student Recruiter—James Bender
 Nursing Admissions Coordinator—Amber Reed
Counseling Services (AFT) (see page 304)
Financial Aid Director—Jynhae Tyler
 Assistant Director—Nancy Keilly
Job Placement & Career Services Director
 —Michelle Talbert-Horsey

North Campus (continued)

Registration & Advisement Director—Susan McCleary
Student Life Director—Antoinette (Nina) Mulé Lyons
 Student Development Specialist—Charles Bell
Student Success Coach—Fatinma Olaleye (Acting)
Supportive Services for Students with Disabilities
 Director—Della Pappas
 Student Support Specialist—Theresa Smochko
West Hills Center Assistant Dean—Ronald Logreco

South Campus

President—Charlene Newkirk, JD
 Administrative Assistant—Kathy D'Imperio
Academic Affairs Dean—Brenda Trettel, EdD
 Associate Dean—Barbara Evans, EdD
Administration Dean—Sharon Mills
 Student Accounts/Business Assistant Coordinator
 —Patricia Martler
 Physical Plant Supervisor—vacant
 Housekeeping Supervisor—Brian Richards
Safety & Security Director—William Hixson
Student Development Dean—Kelli Maxwell, PhD
Admissions Director—Tara Zirkel
 Student Recruiter—Michael Rose
 Career & Technical Education Director—Pamela Kennedy
Counseling Services (AFT) (see page 304)
Financial Aid Director—Kyle Mosley
 Assistant Director—Kelly Yurkovich
Job Placement & Career Services Director
 —Richard Roberts
 Employment Specialist—Jennifer Holbert
Registration & Advisement Director—Tiffany Evans, PhD
Student Life Director—Antonio Quarterman
 Student Development Specialist—Ronald Rocco
 & Benjamin Williams
Student Success Coach—Mark Craven & Michelle Thomas
Supportive Services for Students with Disabilities
 Director—Carissa Monaco
Washington County Center Assistant Dean—Justin Tatar

For contact information for the college's regular full-time and part-time employees, go to ccac.edu/Directory

Faculty & Support Staff

Counseling Services

Toni Taylor Carney, Professor & Counselor (1978)

BS, University of Pittsburgh;
MEd, University of Pittsburgh
Boyce Campus

Lenore Hiller, Assistant Professor & Counselor (1997)

MSEd, Duquesne University
South Campus

Evelyn Kitchens-Stephens, Professor & Counselor (1990)

BS, University of Pittsburgh
MEd, University of Pittsburgh
PhD, Duquesne University
Allegheny Campus

Fanny Liu, Professor & Counselor (2000)

MEd, University of Pittsburgh
MA, University of Pittsburgh
Allegheny Campus

Daniel Maddox, Assistant Professor & Counselor (2008)

MEd, Duquesne University
North Campus

Patrick McKenna, Professor & Counselor (2002)

BA, University of Pittsburgh
MEd, University of Pittsburgh
Allegheny Campus

Devin Patterson, Assistant Professor & Counselor (2012)

BA, Cheyney University of PA
MS, Chatham University
North Campus

John Rush, Professor & Counselor (1979)

BSEd, Memphis State University
MEd, Memphis State University
PhD, University of Pittsburgh
North Campus

Amy Siler, Counselor (2014)

BA, Baldwin Wallace College
MEd, Indiana University of PA
MEd, University of Pittsburgh
South Campus

Lisa Centa Slagle, Assistant Professor & Counselor (1992)

BA, Gannon University
MS, Gannon University
Boyce Campus

Pamela Young, Professor & Counselor (1992)

BA, Indiana University of Pennsylvania
MEd, University of Pittsburgh
South Campus

Library & Learning Resources

Mary Ellen Benson, Professor & Librarian (1992)

BS, Pennsylvania State University
MLS, University of Pittsburgh
Boyce Campus

Ruth Byers, Professor & Librarian (1986)

BA, University of Pittsburgh
MLS, University of Pittsburgh
CAS, University of Pittsburgh
Allegheny Campus

Sally Caldron, Professor & Librarian (2002)

BS, Kent State University
MLIS, Florida State University
South Campus

Diann Colose, Librarian: Integrated Library Systems Specialist (2014)

BS, Indiana University of Pennsylvania
MLS, University of Pittsburgh
Boyce Campus

Elora Cunningham, Professor & Librarian (2001)

BA, Goucher College
MLS, University of Maryland
Allegheny Campus

Christopher Galluzzo, Associate Professor & Librarian (2006)

BS, Ohio University
MSLS, Clarion University
North Campus

Irene Grimm, Professor & Librarian (1999)

BS, West Liberty University
BA, West Liberty University
MLS, University of Pittsburgh
South Campus

Dennis Hennessey, Professor & Librarian (1989)

BA, Bucknell University
MA, Duquesne University
MLS, University of Pittsburgh
Allegheny Campus

Raymond Martin, Professor & Librarian (1991)

BA, University of Pittsburgh
MLS, University of Pittsburgh
Boyce Campus

Barbara Thompson, Professor & Librarian (1980)

BA, Pennsylvania State University
LS, University of Pittsburgh
North Campus

Educational Technicians

Michael G. Baret, Assistant Instructor (1998)

AS, Community College of Allegheny County
Engineering Technology, North Campus

Donald Breitbarth, Assistant Instructor (2008)

BA, Governors State University
Developmental Studies, Allegheny Campus

Sandra Callan, Assistant Instructor (1992)

BS, California University of Pennsylvania
Biology, Allegheny Campus

Tuyet Chau, Assistant Instructor (2003)

AS, Community College of Allegheny County
Computer & Information Technology, North Campus

Zachary Cox, Assistant Instructor (2013)

BS, Indiana University of PA
MA, Indiana University of PA
Reading Laboratory, Boyce Campus

Mark Czapko, Assistant Instructor (1988)

AS, Community College of Allegheny County
Computer Services, Boyce Campus

Lisa DiMaria, Assistant Instructor (2012)

BSED, Duquesne University
MSED, Duquesne University
DVS, Allegheny Campus

Deborah Folino, Assistant Instructor (1991)

AS, Community College of Allegheny County
BS, University of Pittsburgh
MEd, University of Pittsburgh
Chemistry, South Campus

Dawn Gallimore, Assistant Instructor (1988)

BA, Carlow University
BS, Carlow University
Computer Services, Allegheny Campus

Ken Hoeltje, Assistant Instructor (1972)

AS, Community College of Allegheny County
BS, Robert Morris University
Athletics, Allegheny Campus

Dale Jacobs, Assistant Instructor (2002)

AS, Community College of Allegheny County
BS, Pennsylvania State University
MEd, California State University
Biology, North Campus

Margery S. Lentz, Assistant Instructor (1993)

BS, Seton Hill College
Biology, Boyce Campus

Mary Luzanski, Assistant Instructor (1990)

BA, Seton Hill College
Technical Services, South Campus

Susanne Maher-Kelley, Assistant Instructor (1983)

AA, Ivy School of Art
BS, LaRoche College
Graphics, Office of College Services

Diana Marshall, Assistant Instructor (1983)

AS, Community College of Allegheny County
Chemistry, Allegheny Campus

Patrick Murphy, Assistant Instructor (2012)

BSED, Indiana University of PA
Biology, South Campus

Conrad Quesen, Assistant Instructor (2012)

BFA, West Virginia University
Humanities, South Campus

Kelly Shepherd, Assistant Instructor (2005)

BA, Grove City College
MS, Bay Path College
Art, Allegheny Campus

Carlos Taylor, Educational Technician 2 (2012)

AS, Community College of Allegheny County
Engineering, South

Donald Vescio, Assistant Instructor (1973)

AA, Community College of Allegheny County
BA, Point Park College
Physical Education, Allegheny Campus

Teaching Faculty

Wahi Abdulmalek, Associate Professor (2002)

BS, Southern Illinois University at Carbondale
MS, Southern Illinois University at Carbondale
English as Second Language, Allegheny Campus

Waseem Ahmed, Professor (2005)

MS, Duquesne University
MD, World University School of Medicine
Biology, Boyce Campus

Maryann B. Anderson, RHIA, Professor (1986)

BS, Colby-Sawyer College
MPH, University of Michigan
Health Information Technology, Allegheny Campus

Kevin Anderson, Associate Professor (2013)

BS, Pennsylvania State University
Diploma, Pennsylvania School of Muscle Therapy
MS, California University of PA
Massage Therapy, Allegheny Campus

Eugene Anitori, Professor (2003)

BS, University of St. Francis
MS, University of St. Francis
EdD, NOVA Southeastern University
Diagnostic Medical Sonography, Boyce Campus

Jean Aston, Professor (1967)

BA, Carnegie Mellon University
MA, University of Pittsburgh
PhD, University of Pittsburgh
English, Allegheny Campus

JoAnn Avoli, RHIA Professor (1969)

BA, Carlow University
MEd, University of Pittsburgh
Health Information Technology, Allegheny Campus

Stephen W. Bannister, PT, DPT Professor (1989)

BS, University of Pittsburgh
MS, University of Pittsburgh
EdD, Duquesne University
DPT, Slippery Rock University
Physical Therapy & Massage Therapy, Boyce Campus

Allison Caveglia Barash, Professor (1991)

AA, Nassau Community College
BA, Hofstra University
MA, California State University
Psychology, North Campus

Christopher Belcher, Professor (1990)

BA, University of Kentucky
MA, University of Kentucky
MS, Robert Morris University
Computer & Information Technology, South Campus

Michael Bennett, Instructor (2012)

MA, Carnegie Mellon University
BA, Arizona State University
English, Allegheny Campus

Gerard Berardino, CPA, Professor (1972)

BS, Villanova University
MA, Bowling Green State University
CPA, Commonwealth of Pennsylvania
Accounting, Boyce Campus

Diantha Bey, Associate Professor (2006)

BS, Hampton University
MA, LaRoche College
Nursing, Allegheny Campus

John Biondo, Professor (1970)

BA, Indiana University of Pennsylvania
MA, West Virginia University
Psychology, Boyce Campus

Max Blobner, Professor (2000)

BFA, Edinboro University
MS, Duquesne University
Art, Allegheny Campus

Dianna L. Bourke, Associate Professor (2006)

BS, Pennsylvania State University
PhD, University of Pittsburgh, School of Medicine
Biology, Allegheny Campus

Corinne Brucato, Instructor (2014)

BA, Sonoma State University
Mathematics, Allegheny

Lillian Briola, OTR/L, Professor (1984)

BA, Bloomsburg State University
MOT, Texas Woman's University
DOT, Chatham University
Occupational Therapy, Boyce Campus

Doralee Brooks, Professor (1982)

BS, University of Pittsburgh
MEd, University of Pittsburgh
Developmental Studies, Allegheny Campus

Barbara Brown RN, CCRN-R Professor (1982)

BSN, Pennsylvania State University
MN, University of Pittsburgh
PhD, Duquesne University
Philosophy, North Campus

Ricky Burgess, Associate Professor (1991)

BA, LaSalle University
MA, Eastern Michigan University
Speech, Allegheny Campus

Rong Cao, Associate Professor (2010)

ADN, Community College of Allegheny County
 BS, Jilin University
 MS, Carnegie Mellon University
 MS, Dalian Institute of Chemical Physics
 PhD, Carnegie Mellon University
 Chemistry, Allegheny Campus

Beverly Carmo, Professor (1982)

BS, Indiana University of Pennsylvania
 MA, Indiana University of Pennsylvania
 English, South Campus

Richard Carney, Professor (1972)

BS, University of Pittsburgh
 MS, University of Pittsburgh
 Psychology, Allegheny Campus

Jacqueline Cavalier, Associate Professor (2000)

BA, California University of Pennsylvania
 MA, California University
 DEd, Walden University,
 History, Allegheny Campus

Reza M. Chitsazzadeh, Professor (1982)

BSEE, College of Science & Technology
 MS, Gannon University
 Engineering Technologies, South Campus

Mary Cimador, RN, Professor (1990)

AS, Community College of Allegheny County
 BSN, Carlow University
 MSN, University of Pittsburgh
 Nursing, North Campus

Elizabeth Claytor, Associate Professor (2010)

BA, Chatham College
 MA, Carnegie Mellon University
 English, North Campus

Maxine Coleman, Associate Professor (2013)

Diploma, Mercy Hospital School of Nursing
 BS, University of Pittsburgh
 MA, University of Pittsburgh
 MBA, Old Dominion University
 MSN, University of Phoenix
 Nursing, Allegheny Campus

Richard Coleman, Associate Professor (2013)

BS, University of Pittsburgh
 MA, University of Pittsburgh
 MEd, Duquesne University
 Mathematics, Allegheny Campus

Kelli Collette, Associate Professor (2013)

AS, Robert Morris University
 BSEd, Slippery Rock University
 Radiation Therapy, Allegheny Campus

Janet Colville, RN, Professor (1982)

BSN, University of Pittsburgh
 MSN, La Roche College
 Nursing, Allegheny Campus

Rocco Commisso, Professor (1988)

BA, California University of Pennsylvania
 MS, California University of Pennsylvania
 Biology, South Campus

Sara Conroy, Instructor (2012)

BSBA, University of Pittsburgh
 MS, Robert Morris University
 Business & Accounting, South Campus

Deborah G. Conway, Professor (2002)

BA, Duquesne University
 MSW, University of Pittsburgh
 PhD, University of Pittsburgh
 Social Work/Early Education & Child Development,
 South Campus

Scott Cornish, Associate Professor (2008)

BFA, Edinboro University
 MFA, West Virginia University
 Art, South Campus

Robert Coppala, Instructor (2014)

ASN, CCAC
 BSN, Waynesburg University
 MSN, University of Alabama
 Nursing, South

Jane Coughanour, MT, ASCP Professor (1976)

BS, Marietta College
 MEd, Duquesne University
 Allied Health, South Campus

Marie Dailey, Instructor (2013)

BS, John Carroll University
 MS, John Carroll University
 Mathematics, Allegheny Campus

Adam Davis, Associate Professor (2013)

BS, Mercyhurst University
 MA, University of Pittsburgh
 Biology, Allegheny Campus

Gregory B. Davis, MT ASCP, AMT, Professor (1973)

BS, California University of Pennsylvania
 MS, Duquesne University
 Biology, Allegheny Campus

Joseph DeBlassio, Professor (1968)

BS, California University of Pennsylvania
 MA, West Virginia University
 PhD, University of Pittsburgh
 Mathematics, Allegheny Campus

Joseph Delphia, Instructor (2008)

BS, Miami University
 BFA, Miami University
 Art, Allegheny Campus

Anna DelVitto, Professor (1990)

BS, University of Pittsburgh
 MS, Wichita State University
 Mathematics, North Campus

Gerry Dinnen, Professor (2005)

AA, Community College of Allegheny County
 BS, University of Pittsburgh
 MAEd, West Virginia University
 MFA, Edinboro University of Pennsylvania
 Art, Boyce Campus

Elaine DiPerna, Professor (1976)

BS, California University of Pennsylvania
 MEd, University of Pittsburgh
 Mathematics, North Campus

Joyceann Ditka, Professor (1977)

BS, Edinboro State University
 MA, University of Pittsburgh
 English/Speech, North Campus

Steve Dodin, Professor (1982)

BA, Queen's College
 MSeq, Pennsylvania Department of Education
 Physics, Allegheny Campus

Denise A. Doliveira, Professor (2003)

BSN, West Virginia Wesleyan
 MSN, LaRoche College
 Nursing, Boyce Campus

Mark Domencic, Assistant Professor (2013)

AA, CCAC
 BFA, Carnegie Mellon University
 MMU, Carnegie Mellon University
 Music, Allegheny Campus

Diane Dressel, Assistant Professor (2013)

ASN, CCAC
 BSN- Penn State University
 MSN, Waynesburg University
 Nursing, North

Nicholas Duerlinger, Associate Professor (1994)

BS, Marquette University
 MS, University of Pittsburgh
 Mathematics, North Campus

Joseph Dvorak, Professor (2000)

BA, Robert Morris University
 MBA, University of Pittsburgh
 Computer & Information Technology, Boyce Campus

John Dziak, Assistant Professor (1972)

BA, Washington and Jefferson College
 MS, Duquesne University
 Biology, Allegheny Campus

Beth Edson, Associate Professor

BA, La Roche College
 Diagnostic Medical Sonography, Boyce

Ebony Edwards, Assistant Professor (2012)

BSN, University of Pittsburgh
 MSN, Waynesburg University
 Nursing, Allegheny Campus

Carolanne Eicher, Assistant Professor (2012)

AAS, Westmoreland County Community College
 BSN, California University of PA
 MSN, Waynesburg University
 Nursing, South Campus

Ebony English, Assistant Professor (2005)

BA, Indiana University of Pennsylvania
 MSW, University of Pittsburgh
 Social Work, Allegheny Campus

David Enock, Professor (1977)

BS, Yeshiva College
 MA, Hunter College
 Biology, Allegheny Campus

Aime Erickson, Instructor (2011)

BA, Bryn Mawr College
 MEd, Penn State University
 Developmental Studies, South Campus

Caroline Evans, Associate Professor (2011)

BS, John Carroll University
 MSBE, University of Pittsburgh
 Biology, Allegheny Campus

Sean Evans, Instructor (2012)

BS, Millersville University
 MA, University of Pittsburgh
 Mathematics, Allegheny Campus

Julia Fennell, Professor (1990)

BA, Westminster College
 MA, University of Pittsburgh
 Communication Arts, South Campus

Daniel Ference, Professor (1977)

BS, California University of Pennsylvania
 MEd, California University of Pennsylvania
 Engineering Technologies, South Campus

Ileen Finley, RN, Professor (1992)

BSN, Pennsylvania State University
 MSN, University of Pittsburgh
 Nursing, South Campus

Christopher Fischbach, Instructor (2012)

Diploma, Dean Institute of Technology
Heating & Air Conditioning, North Campus

Je Xiang For, Professor (2005)

BS, University of Botswana
MS, New Mexico State University
MAT, University of Texas
Mathematics, South Campus

Carl Francolino, Professor (2002)

BS, University of Pittsburgh
MSOL, Geneva College
MSIT, Carnegie Mellon University
Computer & Information Technology, North Campus

Joyce Frauenholz, Professor (1983)

BA, Carlow University
MA, Duquesne University
English, North Campus

Angela Gaito-Lagnese, Assistant Professor (2013)

AS, CCAC
BA, University of Pittsburgh
MFA, University of Pittsburgh
MESE, Slippery Rock University
English, Allegheny Campus

O. Rita Gallegos, Professor (2002)

AA, El Camino Community College
BA, California Polytechnic State University/San Luis Obispo
MA, California Polytechnic State University/San Luis Obispo
Developmental Studies, Boyce Campus

Sophia Gardner, Professor (2003)

BSN, Carlow University
MSN, University of Pittsburgh
Nursing, Boyce Campus

John Ginther, Assistant Professor (2007)

Welding, North Campus

Paul A. Gogniat, Professor (2003)

BS, John Carroll University
MS, John Carroll University
Mathematics, Boyce Campus

Stephanie Goloway, Professor (2005)

BA, Allegheny College
MEd, Edinboro University of Pennsylvania
Education, Allegheny Campus

Janet Gorda, Professor (1982)

BA, Carlow University
MA, Duquesne University
English, South Campus

Gretchen Graham, Professor (2005)

BS, Robert Morris University
MBA, Robert Morris University
Business, Boyce Campus

Nancy S. Grant, Professor (1985)

BSBA, Robert Morris University
MSEd, Robert Morris University
MA, West Virginia University
EdD, Indiana University of Pennsylvania
Computer & Information Technology, South Campus

Gary Grassinger, Professor (1967)

BS, Indiana University of Pennsylvania
MA, University of Pittsburgh
PhD, University of Pittsburgh
English, North Campus

Richard Greene, Professor (2002)

BA, Bucknell University
MS, University of Pittsburgh
Computer & Information Technology, North Campus

Bonita Gregg, RN, Professor (1991)

BSEd, California University of Pennsylvania
MSEd, Duquesne University
RN, Presbyterian-University Hospital
Allied Health, South Campus

Joseph Guiciardi, Professor (1990)

BS, University of Pittsburgh
MEd, University of Pittsburgh
Mathematics, Boyce Campus

Keerti Gulati, Instructor (2014)

Chemistry, South

Lori Guzikowski, Professor (2003)

BSN, Indiana University of Pennsylvania
MSN, University of Pennsylvania
Nursing, Boyce Campus

Debra Hamel, Associate Professor (2010)

BS, Robert Morris University
MS, Robert Morris University
Business Accounting, North and Boyce Campus

Derek Handley, Associate Professor (2009)

BA, Hampton University
MFA, University of Pittsburgh
English, Allegheny Campus

Lisa Hankinson, RN, Professor (1984)

BSN, University of Pittsburgh
MNEd, University of Pittsburgh
Nursing, Boyce Campus

Aylene Harper, Professor (1970)

BS, University of Pittsburgh
MS, Indiana University, Bloomington, Indiana
PhD, University of Pittsburgh
Psychology/Sociology, South Campus

John Hartner, Professor (2002)

AA, Community College of Allegheny County
 BA, Carnegie Mellon University
 MA, Duquesne University
 English, South Campus

Elizabeth Healy, Associate Professor (2009)

MSN, Waynesburg University
 Nursing, Boyce Campus

Jessica Heathcote, Instructor (2014)

BA, University of Pittsburgh
 MA, Carnegie Mellon University
 English, North (West Hills Center)

Sue Heilman, Instructor (2008)

AS, Community College of Allegheny County
 Vocational Education, North Campus

Lori Hills, Instructor (1997)

AS, Community College of Allegheny County
 BS, Duquesne University
 MS, Duquesne University
 Vocational Education, North Campus

Aaron Hoffman, Associate Professor (2006)

BA, Wabash College
 MA, Ball State University
 PhD, University of Aberdeen
 History, Boyce Campus

Joseph Hrebenak, Professor (1983)

BS, University of New Hampshire
 MBA, University of New Hampshire
 Business, Allegheny Campus

Jo Ann Hunter, Professor (1991)

BA, St. Mary's College
 MBA, DePaul University
 Business, North Campus

Patrick Huth, Professor (2008)

BA, University of Pittsburgh
 MEd, University of Pittsburgh
 Physics, Boyce Campus

Craig Ilk, Associate Professor (1978)

BS, University of Minnesota
 MS, Duquesne University
 Biology, Allegheny Campus

George Jaber, Professor (1983)

BS, Clarion University of Pennsylvania
 MA, University of Denver
 Performing Arts, South Campus

Joanne T. Jeffcoat, OTR/L, Professor (1993)

AS, Mt. Aloysius
 BS, College Misericordia
 MEd, Pennsylvania State University
 Occupational Therapy, Boyce Campus

Mary Beth Johnson, Professor (1993)

BA, Dickinson College
 MEd, Duquesne University
 Court Reporting, Allegheny Campus

Norman L. Johnson, PT, DPT, Professor (1987)

AAS, Saint Philip's College
 BS, George Washington University
 BS, University of Pittsburgh
 MS, University of Pittsburgh
 MSS, US Army College
 MBA, Waynesburg University
 DEd, Pennsylvania State University
 DPT, Slippery Rock University
 Physical Therapy/Massage Therapy, Boyce Campus

Neil Jones, Associate Professor (2013)

BSCE, Grove City College
 MEd, Pennsylvania State University
 Paramedics, Boyce Campus

James Jordan, Professor (1979)

BA, St. Francis of Loreto
 MA, Duquesne University
 MSW, University of Pittsburgh
 JD, University of Pittsburgh
 Business, Boyce Campus

Greg Joyce, Professor (2005)

AS, Community College of Allegheny County
 BS, Point Park College
 MA, California University of Pennsylvania
 EJD, Concord Law School
 Criminal Justice, Boyce Campus

Donald Jukes, Professor (1976)

BA, Westminster College
 MA, University of Denver
 PhD, University of Pittsburgh
 Speech/Theatre, Allegheny Campus

Kathleen Kane, Professor (2002)

BS, Pennsylvania State University
 MA, University of Pittsburgh
 Mathematics, Allegheny Campus

Srujana Kanjula, Professor (2006)

BA, Sri Satya Sai Institute of Higher Learning
 MA, Sri Krishnadevaraya University
 MA, University of Hyderabad
 MPhil, Jawaharlal Nehru University
 PhD, Jawaharlal Nehru University
 Political Science/Sociology, North Campus

Jayne Karcesky, Associate Professor (2008)

BSN, Waynesburg University
 MSN, Waynesburg University
 Nursing, South Campus

Cristen A. Kassai, Professor (1991)

BA, Washington and Jefferson College
 MS, Duquesne University
 Chemistry, North Campus

Joanna Kazmierczak, Professor (2005)

BS, Washington and Jefferson College
 PhD, West Virginia University, School of Medicine
 Biology, Allegheny Campus

August Kellermann, RTR, Professor (1984)

RTR, Montefiore Hospital
 BA, LaRoche College
 MS, University of Pittsburgh
 PhD, LaSalle University
 Radiologic Technology, Boyce Campus

George Kerlin, Associate Professor (2003)

General Motors Training Center, Parkway Vo-Tech
 Automotive Engineering, North Campus

Roger Kinger, Professor (1989)

Automotive, North Campus

Heather Klenovich, Assistant Professor (2011)

BA, Washington and Jefferson College
 MS, Howard University
 Biology, Allegheny Campus

Robert Koch, Professor (1988)

AS, Vale Tech
 Automotive, North Campus

Patricia Kowalski, Associate Professor (2008)

BSN, Duquesne University
 MSN, Robert Morris University
 Nursing, Allegheny Campus

John Kudlik, Professor (1967)

BA, Duquesne University
 MA, Duquesne University
 MA, Pittsburgh Theological Seminary
 MA, Harvard University
 PhD, Harvard University
 History, Allegheny Campus

Denise Lake, Associate Professor (2010)

AS, Pennsylvania State University
 BS, University of Pittsburgh
 MEd, Pennsylvania State University
 Radiologic Technology, Boyce Campus

Katherine Lang Instructor (2013)

BA, Duquesne University
 MA, Carnegie Mellon University
 PhD, Duquesne University
 English, South Campus

Jeffrey Langstraat, Associate Professor (2012)

BA, Iowa State University
 MA, Minnesota State University, Mankato
 PhD, Boston College
 Sociology, Allegheny Campus

Jo Ann Lauer, Professor (2002)

AS, Community College of Allegheny County
 BS, Indiana University of Pennsylvania
 MEd, University of Pittsburgh
 Computer & Information Technology, Allegheny Campus

Richard J. Laurent, RRT, Professor (1999)

AS, Community College of Allegheny County
 BS, University of Pittsburgh
 Respiratory Therapy, Allegheny Campus

John Law, Professor (2003)

BS, University of Pittsburgh
 MS, University of Pittsburgh
 PhD, University of Pittsburgh
 Biology, Allegheny Campus

Barbara Lax, Professor (1976)

BS, University of Pittsburgh
 MS, University of Pittsburgh
 PhD, University of Pittsburgh
 Biology, South Campus

Caroline Lee, Associate Professor (2002)

BA, Chatham University
 MS, Carlow University
 Business, Allegheny Campus

Tae Song Lee, Assistant Professor (2011)

Physics, South Campus

Frances M. Leifheit, Professor (2002)

BS, Bowling Green State University
 MS, Bowling Green State University
 Speech, Allegheny Campus

Rachael Leonard, Associate Professor (2009)

BS, Clarion University
 MS, Clarion University
 Biology, North Campus

Rodger Lindenfesler, Professor (1986)

BA, Thiel College
 MBA, Youngstown State University
 Business, South Campus

Richard Lippert, Assistant Professor (2014)

Paramedics, Boyce

Carmen Livingston, Associate Professor (2012)

BA, Pennsylvania State University
 MEd, Northwestern University
 MFA, Chatham University
 English, South Campus

Daniel J. Lowe, Professor (1992)

BA, West Michigan University
MFA, University of Pittsburgh
English, Allegheny Campus

Sandra Mahon, Associate Professor (2001)

BS, Indiana University of Pennsylvania
MEd, University of Pittsburgh
Developmental Studies, Allegheny Campus

W. Scott Main, Professor, Coordinator (1997)

Automotive, North Campus

Kevin Maloney, Professor (1990)

BS, SUNY, Brockport
MEd, University of Pittsburgh
Dance/Theatre, South Campus

Phyllis Mandella, Instructor (2002)

BS, Indiana University of Pennsylvania
Vocational Education, North Campus

David Manel, Associate Professor (2002)

BA, Michigan State University
MA, Western Michigan University
Political Science, Allegheny Campus

Francis Maxin, Professor (1966)

BA, Gannon College
MS, Duquesne University
MPH, University of Pittsburgh
Biology, Allegheny Campus

Matthew Mayberry, Assistant Professor (2011)

BA, Washington and Lee University
MA, University of South Carolina
Philosophy, Boyce Campus

Carl Mazzetti, ARRT, CNMT, NMTCB, Associate Professor (1979)

BS, Geneva College
Nuclear Medicine, Allegheny Campus

Joanne McCalip, Professor (1981)

BA, Lake Erie College
MEd, University of Pittsburgh
Chemistry, Allegheny Campus

Lisa McCormick, Professor (2006)

BS, University of Pittsburgh
MBA, University of Pittsburgh
Business, Boyce Campus

Jacqueline Meyers, Professor (1967)

BS, University of Pittsburgh
MEd, University of Pittsburgh
PhD, Fielding Institute
Psychology, Allegheny Campus

Joanne Michel de Guerrero, Professor (2005)

BS, University of Pittsburgh
MA, University of Pittsburgh
CLAS Graduate Certificate (Linguistics), University of Pittsburgh
PhD, University of Pittsburgh
Foreign Culture & Language, Allegheny Campus

Susan Miller, Instructor (2014)

AS, CCAC
Surgical Technology, Boyce

Debora L. Misencik, Professor (2003)

AS, Robert Morris University
ARRT Certified Radiologic Technologist
BS, LaRoche College
MS, Duquesne University
MEd, Duquesne University
Biology, South Campus

Kenneth L. Moore, Professor (2001)

BS, University of Pittsburgh
MSEE, University of Pittsburgh
Computer & Information Technology, Boyce Campus

Jack Morales, Assistant Professor (2009)

BA, State University of New York at Oswego
MA, State University of New York at Oswego
English, Allegheny Campus

Janet N. Moynihan, Professor (2003)

BS, Clarion University of Pennsylvania
MEd, University of Pittsburgh
Developmental Studies, South Campus

Leelavati Murthy, Professor (2003)

BS, University of Bombay
MS, University of Bombay
PhD, University of Bombay
Biology/Biotechnology, Boyce Campus

Jason Nadzam, Associate Professor (2007)

AS, Community College of Allegheny County
Automotive, North Campus

John Nadzam, Professor (1997)

BS, Duquesne University
MA, Duquesne University
MSIE, University of Pittsburgh
Computer & Information Technology, Allegheny Campus

Rathna Nanjundappa, Associate Professor (2007)

AS, Community College of Allegheny County
BSN, University of Pittsburgh
MSN, University of Pittsburgh
Nursing, Allegheny Campus

Joseph Nese, Professor (1991)

BA, Waynesburg College
JD, Duquesne University
Criminal Justice/Paralegal, Boyce Campus

Marsha Nicholas, Instructor (2008)

AS, Community College of Allegheny County
 BS, Duquesne University
 MS, Duquesne University
 Vocational Education, North Campus

Charles Noel, Professor (2002)

BA, Indiana University of Pennsylvania
 MA, Indiana University of Pennsylvania
 Paralegal Certification, Pennsylvania State University
 Criminal Justice, South Campus

Lester Nott, Professor (1990)

BA, Indiana University of Pennsylvania
 MA, Indiana University of Pennsylvania
 MEd, Westminster College
 English, Allegheny Campus

Augustine Obiaku, Professor (2002)

BS, Gregorio Araneta University Foundation
 MBA, Manuel L. Quezon University
 PhD, Manuel L. Quezon University
 Business, South Campus

Jeff O'Donnell, Assistant Professor (2014)

BA, University of Pittsburgh
 MS, Youngstown State University
 Criminal Justice, North

Helen Ortmann, Professor (1985)

BS, Indiana University of Pennsylvania
 MSIS, University of Pittsburgh
 Computer & Information Technology, South Campus

Rodger O'Toole, Professor (1972)

BA, University of Dayton
 MA, University of Pittsburgh
 PhD, University of Pittsburgh
 Speech, Boyce Campus

Patricia Paul, Professor (1993)

RN, Sharon General Hospital
 BSN, Pennsylvania State University
 MSN, University of Pittsburgh
 DNP, Carlow University
 Nursing, South Campus

Walter Pauli Jr., Professor (1997)

BS, Rochester Institute of Technology
 MS, University of Pittsburgh
 MBA, Santa Clara University
 Computer & Information Technology, Boyce Campus

Maureen Pavlik, RN, Professor (1991)

BSN, University of Pittsburgh
 MSN, University of Pittsburgh
 Nursing, North Campus

Timothy Pavlik, Professor (1977)

BA, Allegheny College
 MS, Indiana University of Pennsylvania
 Business, North Campus

Janette Petro, Professor (2005)

BSN, Carlow University
 MSN, University of Pittsburgh
 Nursing, Boyce Campus

Theresa Piekut, Professor (1987)

RN, McKeesport Hospital School of Nursing
 BSN, LaRoche College
 BSEd, California University of Pennsylvania
 MSN, University of Pittsburgh
 Nursing, South Campus

Juanita Plaskon, Professor (2001)

BA, Johns Hopkins University
 PhD, University of Pittsburgh
 Biology, Boyce Campus

Sulakshana Plumley, Professor (1991)

BS, Lucknow University of India
 MS, University of Illinois
 PhD, Kent State University
 Physics, Boyce Campus

Charles Poetain, Professor (1990)

MA, Carnegie Mellon University
 Mathematics, Allegheny Campus

Mary J. Popojas, Professor (2006)

BSN, Pennsylvania State University
 MSN, University of Pittsburgh
 Nursing, South Campus

Ralph Proctor, Professor (2001)

BS, University of Pittsburgh
 PhD, University of Pittsburgh
 Ethnic & Diversity Studies, Allegheny Campus

Barbara Radigan, Professor (1991)

BS, Kent State University
 MA, University of Pittsburgh
 PhD, University of Pittsburgh
 Psychology, Allegheny Campus

Linda C. Radzvin, RN, CRNP, Professor (1991)

RN, St. Francis Medical Center
 BS, California University of Pennsylvania
 BSN, Carlow University
 MEd, University of Pittsburgh
 MSN, West Virginia University
 PhD, Duquesne University
 Surgical Technology, Boyce Campus

John Reynolds, Associate Professor (2010)

BA, Mercer University
 MA, University of Reading, Berkshire
 MAT, Georgia College
 English, Boyce Campus

Kate Ritchey, Instructor (2012)

MS, Clemson University
 BS, Baldwin Wallace College
 Mathematics, Boyce Campus

Christopher W. Robinson, Assistant Professor (2010)

BSW, Jackson State University
 MSW, University of Pittsburgh
 Social Work, South Campus

Audrey Rosenthal, Professor (1988)

BA, Mercyhurst College
 MA, Duquesne University
 English, Allegheny Campus

Susan Rosepink, Assistant Professor (2013)

BSN, Waynesburg University
 Nursing, Boyce Campus

Valjean Rossmann, Associate Professor (2007)

BS, University of Pittsburgh
 MAT, California University of Pennsylvania
 MS, Saint Joseph College
 Biology, South Campus

Vicki Rostis, Associate Professor (2008)

BSN, Waynesburg University
 MSN, Waynesburg University
 Nursing, South Campus

Rosemary Russell, Professor

BSN, Widener University
 MSN, Syracuse University
 Nursing, North Campus

Linda Salicce, Professor (1994)

BS, West Liberty University
 MEd, University of Pittsburgh
 Biology, Boyce Campus

Brad Sandrock, Professor (1981)

BS, University of Pittsburgh
 MS, Carnegie Mellon University
 MSNE, Carnegie Mellon University
 Engineering Technologies, South Campus

Tammy Sawmelle, Associate Professor (2013)

BSN, Pennsylvania State University
 MSN, Duquesne University
 Nursing, South Campus

Brenda Schneider, Professor (2007)

BSN, Duquesne University
 MSN, Waynesburg College
 Nursing, North Campus

Rebecca Senkowicz, Assistant Professor (2013)

AA, Shoreline Community College
 BS, University of Pittsburgh
 MA, University of Pittsburgh
 MA, University of Wisconsin-Madison
 Mathematics, North Campus

William Serafin, CPA, Professor (1977)

BS, California University of Pennsylvania
 MBA, Duquesne University
 Accounting, South Campus

Rebecca Shaheen, RN, Professor (1982)

BSN, Indiana University of Pennsylvania
 MSN, Indiana University of Pennsylvania
 DNP, Waynesburg University
 Nursing, Boyce Campus

Thomas Shaheen, Associate Professor (2006)

BA, Indiana University of Pennsylvania
 MA, California University of Pennsylvania
 Criminal Justice, South Allegheny Campus

Margaret Shaughnessy, Professor (2005)

BA, Maryville College
 MA, St. Louis University
 English, Boyce Campus

William Shay, Professor (1968)

BS, University of Pittsburgh
 MA, Michigan State University
 Physical Education, Allegheny Campus

Laura Shuman, Instructor (2012)

BS, Aquinas College
 MS, Washington State University
 Mathematics, Allegheny Campus

Carrie Slagle, Professor (2007)

BSN, Indiana University of Pennsylvania
 MSN, University of Phoenix
 Nursing, Boyce Campus

David Sluss, Professor (2005)

BS, University of Akron
 MA, University of Pittsburgh
 Mathematics, Allegheny Campus

Donald Smith, Professor (2002)

AS, Community College of Allegheny County
 BS, Otterbein College
 MEd, University of Pittsburgh
 Computer & Information Technology, Allegheny Campus

Juel Smith, Associate Professor (2012)

BS, Carlow University
Biology, Boyce Campus

Mary Jane Smith, RN-BC, Professor (1968)

BSN, University of Michigan
MA, University of Pittsburgh
Nursing, Allegheny Campus

Patricia Smutko, Professor (2003)

BSN, Slippery Rock University
MSN, LaRoche College
Nursing, Allegheny Campus

Laurie Sprankle, Professor (2007)

BA, Pennsylvania State University
MA, Pennsylvania State University
History, South Campus

Richard Stec, CPA, Professor (1977)

BS, University of Pittsburgh
MS, Duquesne University
JD, Duquesne University
Accounting, North Campus

Maureen Stradley, Professor (1989)

BS, Pennsylvania State University
MEd, University of Pittsburgh
Developmental Studies, Allegheny Campus

Michael Sullivan, Professor (1985)

AS, Community College of Allegheny County
BA, Robert Morris University
MS, Robert Morris University
Computer & Information Technology, North Campus

Jonathan Summer, Associate Professor (2006)

BS, University of Pittsburgh
MS, University of Nevada
Mathematics, Boyce Campus

Paula Susi, Professor (2008)

BSN, University of Pittsburgh
MSN, Waynesburg University
Nursing, North Campus

Stephanie Swindle, Associate Professor (2010)

BS, Indiana University of Pennsylvania
MS, Indiana University of Pennsylvania
Mathematics, North Campus

Cynthia Syskowski, Professor (2005)

AA, Northern Virginia Community College
BA, Chatham University
MEd, Carlow University
Early Education & Child Development, North Campus

Linda Tessmer, Instructor (1999)

AA, American River College
Vocational Education, North Campus

Susan Thornton, Professor (2007)

BSN, University of Texas
MSN, University of Texas
Nursing, South Campus

Rosalena Thorpe, RN, Professor (1981)

BSN, Columbia University
MA, Columbia University Teachers' College
MEd, Columbia University Teachers' College
PhD, University of Pittsburgh
Nursing, Allegheny Campus

Elizabeth Throesch, Associate Professor (2013)

BA, University of Texas at Austin
MA, University of Southampton, UK
PhD, University of Leeds, UK
English North Campus

Alex Tongchinsub, Instructor (2013)

BS, Allegheny College
MA, University of Pittsburgh
Mathematics, South Campus

Marianne Trale, Associate Professor (2009)

AA, Community College of Allegheny County
BA, University of Pittsburgh
MFA, University of Pittsburgh
English, Boyce Campus

Jason Trautman, Professor (2005)

BS, Indiana University of Pennsylvania
Respiratory Therapy, Allegheny Campus

Bruce A. Turchetta, Professor (1987)

BS, Indiana University of Pennsylvania
MS, Indiana University of Pennsylvania
PhD, Pennsylvania State University
Health & Physical Education, Boyce Campus

Pamela Turley, Professor (1990)

BA, Wittenberg University
MA, University of Pittsburgh
English, Allegheny Campus

Eugene Turner, Professor (1973)

AA, Community College of Allegheny County
BA, Carnegie Mellon University
Physical Education, Allegheny Campus

Luis Ulloa, Associate Professor (2008)

MS, University of Pittsburgh
MS, Indiana University of Pennsylvania
Mathematics, Allegheny Campus

Helena Vankova-Walters, Assistant Professor (2009)

BSN, Palacky University
 MSN, Palacky University
 Nursing, Allegheny Campus

Elizabeth Vargo, RD, LDN, Professor (1987)

BS, Mercyhurst College
 MS, University of Pittsburgh
 Dietetics, Allegheny Campus

Joalice Vecchio, Professor (2005)

BA, Seton Hill University
 BSN LaRoche College
 MSN, LaRoche College
 Nursing, South Campus

Veena Venugopal, Instructor (2014)

BS, University of Calicut
 MS, Duquesne University
 MS, University of Calicut
 Mathematics, South

Gregory Wagner, Professor (1991)

BA, Duquesne University
 MAT, Duquesne University
 BSIS, University of Pittsburgh
 MSIS, University of Pittsburgh
 Computer & Information Technology, Boyce Campus

Kathleen Wallace, Associate Professor (2008)

MS, Duquesne University
 Biology, Boyce Campus

Ping An Wang, Professor (2002)

BA, Xi'an International Studies University
 MA, Xi'an International Studies University
 MA, Cleveland State University
 MCIS, Cleveland State University
 PhD, Nova Southeastern University
 Computer & Information Technology, South Campus

Monica Washington, Professor (1991)

BA, California University of Pennsylvania
 MA, California University of Pennsylvania
 English/Speech, South Campus

Mary Ann Watkins, Professor (1985)

BA, West Virginia University
 MA, West Virginia University
 Mathematics, North Campus

Karl Watson, Associate Professor (2000)

Chrysler Corporation Training Center
 Automotive Engineering, North Campus

Raymond Weaver, Professor (1972)

BS, Holy Cross College
 MS, Carnegie Mellon University
 Mathematics, Boyce Campus

Michele Wehrle, Professor (1991)

BS, Indiana University of Pennsylvania
 MS, Pennsylvania State University
 PhD, Iowa State University
 Foodservice, Lodging & Recreation Management, Boyce Campus

Stephen Wells, Professor (2002)

AS, Community College of Allegheny County
 BA, Duquesne University
 MA, Duquesne University
 PhD, Duquesne University
 English, South Campus

Kalina White, Associate Professor (2005)

BA, Earlham College
 MS, University of Connecticut
 Biology, Allegheny Campus

Thomas Wieloch, Professor (1976)

AS, Worcester Junior College
 BS, University of Lowell
 MS, University of Massachusetts
 Physical Science, North Campus

Patsy Williamson, Professor (1988)

BA, University of Alabama in Birmingham
 MA, University of Alabama in Birmingham
 English, South Campus

Miriam Wilson, Instructor, (2012)

BS, Messiah College
 MS, Framingham State University
 Dietetics, Allegheny Campus

Thaddeus Worek, Professor (1982)

BS, University of Pittsburgh
 MS, University of Pittsburgh
 PhD, University of Pittsburgh
 Physics, Allegheny Campus

Lore Wright, Professor (1994)

BS, University of Pittsburgh
 BSN, University of Pittsburgh
 MSN, University of Pittsburgh
 Nursing, Allegheny Campus

Eileen Wrigley, Professor (1976)

BS, University of Pittsburgh
 MS, University of Pittsburgh
 Computer & Information Technology, South Campus

Melanie Yeschenko, Associate Professor (2005)

BS, Indiana University of Pennsylvania
 MEd, California University of Pennsylvania
 Early Education & Child Development/Education,
 Boyce Campus

Joseph Yoest, Instructor (2012)

BS, Robert Morris University
MA, University of Pittsburgh
Mathematics, South Campus

Carla Young, Professor (1991)

BS, Clarion University
MEd, Clarion University
Developmental Studies, Allegheny Campus

Robert Young, Professor (2006)

BA, Wichita State University
MA, Wichita State University
Sociology, South Campus

William Zahurak, Professor (1970)

BS, Indiana University of Pennsylvania
MBA, University of Pittsburgh
Accounting, Allegheny Campus

Michael Zdilla, Assistant Professor (2013)

BS, University of Pittsburgh
DC, New York Chiropractic College
Biology, South Campus

Michele Zerebnick, Professor (1991)

BA, University of Pittsburgh
MA, University of Pittsburgh
Corrections/Sociology, Boyce Campus

Eugene Zizka, Professor (1980)

AA, Cuyahoga Community College
BS, The Ohio State University
MS, University of Pittsburgh
PhD, University of Pittsburgh
Physics, Allegheny Campus

STUDENT NOTES

Glossary and Definitions

Academic Advisor. The CCAC faculty or staff member(s) who will help students develop their educational plan and facilitate their registration each term.

Academic Calendar. The calendar that tells when the academic terms begin and the dates for grades, withdrawal and other important academic deadlines. (*see ccac.edu/Academic_Calendars.aspx*)

Academic Forgiveness. The process by which students may apply for forgiveness of D and F grades due to an absence of four years from credit study or because they have changed their program of study. The adjusted GPA will be used for determining academic standing to include suspension, probation, good standing, honors and dean's list. (*See the Academic Rules & Regulations, "Academic Forgiveness" section of the catalog for more information.*)

Academic Probation. A student who has attempted a minimum of 12 credit hours with a cumulative grade point average below a 2.00 and is not suspended is placed on academic probation. (*See the Academic Rules & Regulations, "Academic Probation" section of the catalog for more information.*)

Academic Progress. The academic rules established by the college to ensure that students are making progress toward the completion of their educational goals.

Academic Suspension. A temporary dismissal from the college for two academic semesters of a student whose GPA falls below acceptable levels (below 2.00) of academic progress. (All summer sessions combined equal one semester.)

Access to Student Records. The policy under which students are allowed to review their records according to college policy. Student access their records through CCAC Central e-Services.

Add &/or Drop. The process of changing schedules after students have completed their registration. Refer to the Academic Calendar for dates during which this can occur.

Administrative Withdrawal. The policy by which the college reserves the right to cancel students' registrations for just cause, such as non-payment of tuition or disruptive behavior.

Admissions Application. All students must complete the official admissions application. The form is available online or in paper. All students must complete to begin the enrollment process. The application collects basic demographic and academic information on the applicant.

Admissions Process/Procedures. Steps followed by a new or re-admitted student in order to enroll at CCAC as a credit student. These include completing an application, submitting transcripts, applying for financial aid, taking placement tests and seeing an academic advisor. Applicants can complete all steps at one time by participating in an Enrollment Express Day.

Advanced Standing. College credits taken at an accredited college or university, or earned through CLEP, Dantes and AP exams. CCAC also awards advanced standing for specific CTC coursework based on articulation agreements. (*See Transfer Credits.*)

Alpha-numeric codes. How CCAC courses are identified. Each course receives a six digit code—the first three digits are alphabetic, the second set of three are numeric.

Appointment Central. The online portal allowing CCAC students to schedule an appointment for a variety of services such as placement testing, academic advising, Enrollment Express and other events. (*See ccac.edu/appointment-central/*)

Articulation Agreements. Agreements between institutions (either a high school/area vocational school or future four-year school and CCAC) that allow for the awarding of CCAC credit for prior educational experiences or the transfer of CCAC credits to other schools.

Audit. The process of attending class on a no-academic credit basis. Students pay the same tuition whether they take the class for a grade or not.

Behavioral Intervention Team (BIT). College staff who respond to situations involving dangerous, atypical, threatening or disruptive student behaviors.

Blackboard. CCAC's course management system used for Internet, hybrid and technology-supported courses. Blackboard is accessed through the Internet; therefore there is no software to install or download to the student's computer. (*see courses.ccac.edu/*)

Bookstore Charge Authorization. The policy which allows students with pending financial aid or a financial sponsor to obtain books and supplies from the campus bookstore. (*see ccac.edu/Bookstores.aspx*)

Career & Technology Center. (CTC) Technical high schools. CCAC accepts some credit from specific CTC's. Students should see admissions counselor for additional information.

Career Planning. The availability of a career counselor at each campus to help students select major programs and careers.

CCAC Central. CCAC Central e-Services is an online product where students can apply for admissions to CCAC, search and register for credit classes, view grades and financial information, order transcripts and pay online.



Certificate. CCAC offers a number of certificate programs, requiring less than 60 credits, aimed at preparing students for a specific career.

Changing a Grade. The procedure to have a grade change includes several steps. If a student receives a grade he/she believes to be incorrect, the student should check first with his/her instructor. Consult the current Student Handbook for additional information.

Changing a Major Program. Students must see an advisor and file a change of major program form at the Registration and Advisement office.

Checksheet. (*See Graduation Checksheet.*)

Class or Course Load. The number of courses and credits for which students are registered.

Class Schedule. The college prints a class schedule each term, listing the credit courses available at each campus and center. The schedule is also available electronically at ccac.edu CCAC Central e-Services.

CLEP (College Level Examination Program). The national tests students can take to determine if they should receive advanced standing credits in a number of disciplines. (For more information go to [ccac.edu/Advanced-Placement/#College-Level_Examination_Program_\(CLEP\)](http://ccac.edu/Advanced-Placement/#College-Level_Examination_Program_(CLEP)))

Co-curricular Activities. Activities at CCAC that are designed to complement the classroom.

Code of Academic Conduct. CCAC rules and policies regarding appropriate standards of academic integrity for students.

Code of Behavioral Conduct. CCAC rules and policies regarding appropriate standards of conduct for students. These standards are embodied within a set of values that include integrity, social justice, diversity, respect, community and responsibility.

Collaborative Programs. The Collaborative program with Indiana University of Pennsylvania (IUP) require that students complete designated credits at CCAC then apply to IUP BS in Management. Students accepted into the IUP program may then continue the IUP junior and senior coursework at the Boyce campus.

Commencement: A graduation ceremony where students officially receive their degrees, typically held in May or June at the end of the academic year (*See graduation*).

Cooperative Education. On-the-job experiences arranged by the college in a number of programs to give students work experience before graduation.

Corequisite. Two or more courses that should be taken at the same time.

Counseling Services. The personal counseling, transfer counseling and career counseling services CCAC offers ensure that students are well-informed and well-guided as they make decisions about academics, careers and more. (*see ccac.edu/Counseling_Services.aspx*)

Course Outline. An outline prepared by the instructor in each class. The course outline enhances the information in the syllabus. It describes the expectations in greater detail including weekly assignments and classroom etiquette as well as behavior.

Credit. At CCAC, a credit is equivalent to 15 hours of instruction or one hour per week over a 16-week period. A three-credit class would be equivalent to 45 hours, a four-credit class to 60 hours and so on. Hours are prorated for shorter sessions. These hours do not include final examination.

Credit by Examination. If a student has experience he/she believes equivalent to a CCAC course, the student may petition to receive credit by examination rather than enrolling in the course. There is a fee for this examination.

Credits (Earned & Attempted). Credits earned are those classes that students receive an A through F grade; credits attempted are all classes in which they have enrolled, even though the student may have I, X or W on their transcript.

CTC. (*See Career & Technology Center.*)

Curriculum. The name given to a number of courses representing a program of study or the offerings of department of discipline.

Dean's List. The list of students who have high academic achievement. This list is prepared each term.

Dean of Academic Affairs (Academic Dean). The dean of Academic Affairs and the associate dean of Academic Affairs are responsible for all academic areas on each campus with the exception of Nursing (which is administered by the college-wide Dean of Nursing). The deans of Academic Affairs have additional college-wide discipline and program responsibilities.

Dean of Student Development. The dean of Student Development is responsible for all student services on each campus and respective college centers. Student services range from admissions and financial aid to supportive services for students with disabilities, child development centers and student life. The dean of Student Development is responsible for enforcing the Student Code of Behavioral Conduct. Behavioral Intervention Teams are chaired by the campus dean of Student Development.

Dean, Online. (*See Online Dean.*)

Degree. CCAC offers Associate of Arts (AA), Associate of Science (AS) and Associate of Applied Science (AAS) degrees.

Degree Audit. Academic Advisors are available to review a Degree Audit with students; this shows progress made by the student to meet the requirements of their current program or a prospective program.

Developmental Studies courses. CCAC offers courses in English, mathematics and reading to help students develop the skills necessary to succeed in the college classroom.

Diploma. CCAC offers a number of diploma programs, requiring less than 60 credits, aimed at preparing students for a specific career.

Discipline or Department Elective. A course offered within a specific discipline (for example, Business or Psychology) which students can elect to take in their major program. These are noted in the program in the catalog.

Drop &/or Add. The process of changing a schedule after students have completed their registration. (*See Add &/or Drop.*)

Dropping a Class. In order to drop a class and not receive a final grade in it, students must report to the Registration and Advisement office within the specific drop period.

Dual Enrollment. With the permission of the student's parents and school district, a high school student may take CCAC coursework.

e-portfolio. (*See Portfolio Review through College Credit Fast Track*)

eRefund. Enables students to have certain refunds electronically deposited directly into a checking or savings account.

Educational Plan. A student's academic advisor will help him/her develop a plan to facilitate educational objectives through classes at CCAC.

Electives. College level courses listed in a degree program that are not specified by title.

Enrollment Express. (*see Open House*)

Extracurricular Activities. Activities at CCAC that are outside of the classroom. Many of the extracurricular activities can be found in the Student Life section of the web and include clubs, sports and community service.

Faculty Resource Program. This program focuses on students who have completed all developmental courses as required by CCAC's placement tests or are not required to take any developmental courses, have completed between nine and 30 credits and have at a least a 2.00 GPA. It is designed to provide the students with information about their academic status and services provided by the college.

FAFSA (*see Free Application for Federal Student Aid*)

Fees. The college collects fees in addition to tuition. These cover extraordinary costs associated with education. Among others, these include a laboratory fee, technology fee and student service fee. (*See Tuition & Fees page for more information.*)

FERPA. The Family Educational Rights and Privacy Act of 1974 allow students access to their own school records and sets guidelines for the protection of the student record.

Final Examination. Each class taken will have a final examination. This may or may not include a review of the entire term's work.

Financial Aid. Financial Aid is intended to aid students in reaching their educational goals. Financial aid at CCAC is available in the form of: grants and scholarships, Direct subsidized loans, Direct unsubsidized loans, Direct Parent Plus loans and private alternative loans. Financial aid also includes work-study employment. (*see ccac.edu/financial-aid/*)

Flat Rate Tuition. Tuition charged for students registering for 12 to 18 credits in a semester.

Free Application for Federal Student Aid. The Free Application for Federal Student Aid (known as the FAFSA) is a form that can be prepared annually by current and prospective college students in the United States to determine their eligibility for student financial aid (including the Pell Grant, Federal student loans and Federal Work-Study). (*See Financial Aid*)

General Equivalency Diploma (GED). The diploma awarded by the Commonwealth of Pennsylvania to those individuals who did not graduate from high school, yet successfully complete a standardized test. The college offers courses to prepare students to take the GED tests, or students can receive a GED after completing 30 credits of college work. (*see ccac.edu/GED-information/*)

General Studies. If students have completed 60 credits and have completed the distribution requirements for the associate degree, they may graduate in general studies.

Good Standing. Students are in good standing at the college if they maintain a grade point average (GPA) of 2.00 or higher.

Grade Point Average (GPA). The grade point average is calculated each term and then accumulated over the student's enrollment at the college. It is based on a 4.00 scale, with an A counted as 4 grade points, a B 3 grade points, etc.

Grades. Grades indicate students' success in each course. Students receive a grade noting their midterm progress as well as a final grade in each course. Students access their grades via CCAC Central e-Services.

Graduation. In the student's last term he/she needs to complete an application for graduation available at ccac.edu/advisement-forms/ or in the Registration and Advisement office, so the academic record can be evaluated to determine if the student has met all of the requirements for their program.

Graduation Checklist. Checksheets detailing the requirements for graduation for academic programs offered at CCAC.

Grants. Type of financial aid awarded based on financial need. The most common grants are awarded by state and federal agencies. (*See Financial Aid for more information.*)

High School Transcript. Applicants to the college are required to submit a high school transcript. Applicants must contact their high school to authorize the sending of the transcript.

Honors Programs. The Honors Program exists to unite outstanding students and faculty in the pursuit and advancement of academic excellence. For students, CCAC Honors promotes participation in a program of scholastic rigor, service to the college and community, opportunities to attend regional and national Honors conferences and activities to develop leadership skills. Students must apply to the honors program for consideration.

Horizontal Change. Students may change from one section of a course to another section during the registration or add period.

Incomplete. A student has not completed all the required work in a course within the scheduled term. It is the instructor's option to give an incomplete. The student needs to meet with the instructor and agree on the exact work to be completed and a schedule to complete the work. Work must be completed no later than eight weeks into the next semester. If a "Change of Grade Authorization" is not received, the I grade will automatically be converted to the grade earned or to an F grade.

Independent Study. Independent study experiences are planned by students and their instructors before registration and must be approved by the appropriate academic dean.

Joint Enrollment. CCAC has entered into joint enrollment programs with California University of Pennsylvania. Students who apply and meet the admissions requirements of both institutions will be jointly admitted to both institutions and may take coursework at both institutions leading to both an associate degree and then a bachelor's degree. Tuition is charged at the rate of the institution offering the course.

Learning Commons. Learning Commons are learner-center engagement spaces where tutoring, faculty interaction and facilitated computer-assisted learning is fostered at each of the college's four campuses. While focusing on improving the skills and abilities of CCAC's developmental students in English and reading courses, all CCAC students will have access to the Learning Commons. (*See ccac.edu/Learning_Commons.aspx*)

Limited Admissions. Admission to the college does not constitute admission to a limited enrollment program. Some programs are limited in enrollment due to clinical sites, employment opportunities, accreditation requirements and other factors. Students may need to complete certain requirements to be eligible to apply to a limited admission/limited enrollment program. (*see ccac.edu/limited-enrollment-specialty-programs/*)

Loans: Type of financial aid which can be either subsidized or unsubsidized that must be repaid, either six months after graduating or once the student ceases to be enrolled at least half-time. Alternative loans have lender-specific repayment terms. (*See [Financial Aid for more information.](#)*)

Major Program. All students at the college select a major program, whether or not they intend to complete all the requirements of that program. These major programs are detailed in the college catalog and should be selected in consultation with an academic advisor.

Math Café. The Math Café is a walk-in assistance center for students in need of help with mathematics courses. Math Cafés are available at all college campuses, Homewood-Brushston and West Hills Centers. Math Cafe hours of operation are available at ccac.edu/Math_Cafes_Page.aspx

Medical Withdrawal. If a student has a health problem that makes it necessary for him/her to drop out of school, the student can apply for a medical withdrawal.

Midterm Grades. Midterm grades are issued for the 16- and 14-week terms after the eighth week of the 16-week term. This grade does not appear on the transcript and is intended to help students assess their progress in each course.

Military Call to Active Duty – An M grade is posted to the student transcript when a student has elected the withdrawal option Military Call to Active Duty. (*see [Appendix L](#)*)

NetID (Network Identification). A personal, unique identifier assigned to individuals. Students can set up their username and password, which provides access to computers on the college network, e-Services, email, Blackboard, and other college electronic services.

Nondiscrimination Policy. Policy implemented at CCAC that provides procedures for dealing with complaints of discrimination, harassment, bullying, hazing, intimidation, sexual misconduct, stalking and cyber bullying.

Online Dean. Online service designed to provide opportunities for students to communicate with the deans of Student Development, ask questions and receive responses via email.

Online Learning. Online learning describes courses in which the majority of interaction between teacher and student and among students takes place electronically. Electronic communication may take the form of audio, video, email, chat and the Internet.

Online Tutoring (SMARTHINKING). Up to 10 hours of free online (24/7) tutoring per semester are offered to all CCAC students. This is particularly useful for students who are not able to use the in-house facilities. Students using SMARTHINKING receive real-time assistance in mathematics, chemistry, bilingual mathematics, physics, organic chemistry, biology, introduction to anatomy and physiology, economics, introductory finance, accounting and statistics. Writing support for all subjects is also provided through the online writing lab.

Open Admissions. CCAC has open admissions, which means that it does not require entrance examinations. Students are admitted on a first-come, first-served basis. The college does require that students take placement tests to make sure students begin their studies where they are most likely to succeed.

Open House. Event held at college campuses that enable a prospective student to meet with CCAC representatives from Admissions, Financial Aid and, Registration & Advisement. Students can get answers to questions, complete an admissions application, take placement tests, begin the financial aid process and register for classes—all in one place on one day. Preregistration is required. Students can sign up online through Appointment Central or can contact the campus.

Orientation. (*See Smart Start Orientation.*)

Outstanding Balance. Unpaid tuition, fees, parking tickets, fines and balances will prevent students from registering or receiving any other college services until resolving the balance.

PASSHE. Pennsylvania System of Higher Education institutions.

PA TRAC PA TRAC creates a seamless transfer and articulation process for students who earn degrees in specific programs and who transfer to PASSHE–Pennsylvania System of Higher Education institutions. CCAC’s programs in Biology, Business, Chemistry, Early Education and Child Development, Physics and Psychology are part of this agreement. In addition to the PASSHE institutions, Carlow University, Lackawanna College, Neumann University and St. Francis University are participating in these agreements.

Part-time Student. A part-time student is registered for less than 12 college credits for a term.

Per-credit Tuition Rate. Tuition charged to students registering 1 to 11 credits or registering for 19 or more credits in a semester.

Placement Profile. A student’s placement profile is made up of his/her placement test scores as well as previous educational and life experiences. This information will assist the academic advisor in designing a successful educational plan with the student.

Placement Tests. The college provides placement testing in English, reading and mathematics skills to help students and academic advisors determine if students need help developing the skills necessary to be successful at CCAC. (*See ccac.edu/placement-tests/*)

Portfolio (for Prior Learning Assessment) (PLA). A portfolio is an organized collection of essays and documentation demonstrating the student’s learning through work and life experiences. Through the portfolio, the student demonstrates the knowledge gained through experience equivalent to college coursework. The student must be able to identify and document experiences and learning, based on the learning outcomes stated in the CCAC curriculum. Each portfolio will include: reason for petition; an expanded resume; a personal essay outlining goals, competencies and a learning narrative; and supporting documentation (including letters of verification, copies of certificates, demonstrations, awards, portfolios, etc.) that provides evidence of experience and learning.

Prerequisite. Course or skill set a student is required to have before registering for another course.

Program Areas. Academic programs are categorized into six areas: Arts and Humanities; Business; Education, Social and Behavior & Human Services (ED,SB&HS); Health; Science, Technology Engineering and Mathematics (STEM); and Trades.

Program Requirements. These are listed under the student’s major programs in the college catalog and are the requirements needed to graduate in that program.

Quality Point Average (QPA). (*See Grade Point Average (GPA).*)

Re-admission. Students who have not attended CCAC for one year need to reapply to the college. Students may continue in their previous program or select a new program.

Refunds. The refunding of money owed to students is by check or credit card and may take as many as three weeks for processing after the start of the term. (Also see eRefund)

Registration. The process of enrolling in college classes. Currently registered students are able to use “priority registration” for the next term before registration opens to the public. The effective dates for registration are posted on each campus. Students may register at any campus of the college, no matter which campus they want to attend. Most students can register online. (*See ccac.edu/registration-services/*)

Registration and Advisement. The office on each campus that is responsible for registration, advisement and maintaining the student's records. (*See ccac.edu/academic-advisement/*)

Repeating Classes. If students have received a D or F in a class, they may elect to repeat it. Students may make four attempts to pass a course. However, the fourth attempt requires permission of the academic dean and will be allowed only under compelling circumstances. All grades earned by students from a single class will remain on their transcript, with the last grade being calculated into the GPA.

Remote Placement Testing. Placement testing available to CCAC applicants who live outside the geographic region through Remote ACT/COMPASS testing sites (there are over 550 located throughout the United States). Testing centers typically charge a fee between \$20 and \$45. The CCAC Counseling Office will help you to determine the appropriate test package and a testing center where you can take the test. For more information go to ccac.edu/Remote_Placement_Tests.aspx

Removal of Grades From GPA Calculation. Students may apply for forgiveness of D or F grades due to an absence of four years from credit study or because they have changed their program of study. The adjusted GPA will be used for determining academic standing to include suspension, probation, good standing, honors and dean's list. (*See the Academic Rules & Regulations, "Academic Forgiveness" section of the catalog for more information.*)

Residency (domicile*). CCAC is sponsored by Allegheny County and the Commonwealth of Pennsylvania. Students must prove residency to determine appropriate tuition rates.

**Domicile shall mean a person's true, fixed and permanent home, to which a person intends to return. A residence established for the purpose of attending an educational institution or qualifying for resident status for tuition purposes shall not of itself constitute domicile. The residency of a dependent student (as defined by the IRS) is determined by the parent's domicile. (See Appendix F, Student Residency Classification for more information.)*

Reverse Transfer. Within four years after leaving CCAC and after completing a minimum of 30 credits at the college, a student can apply back to the college for graduation. A maximum of 15 credits from an approved and accredited college can be applied toward graduation.

Roadmap to Your Destination. Roadmap is a clear pathway to graduation, detailing the steps to completion in logical sequence and directing students to engage in specific tasks at key times. (*See Student Services for more information.*)

Satisfactory Academic Progress. Eligibility for financial aid can be affected by failure to maintain satisfactory academic progress. (*See Financial Aid for more information.*)

Scholarships. Type of financial aid typically awarded to students who meet specific criteria. (*See Financial Aid for more information.*)

School Code. Unique codes are assigned by the Department of Education for schools participating in the Title IV federal student aid programs. Students can enter these codes on the Free Application for Federal Student Aid (FAFSA) to indicate which postsecondary schools they want to receive their financial application results. The school codes for the CCAC campuses can be found on ccac.edu.

Second Associate Degree. If students wish to earn a second associate degree, they must complete at least 21 additional credits at CCAC and complete all the requirements of the second program.

Section. The time, place and instructor of each course are noted by use of a section number.

Semester. CCAC is on a semester calendar, with a fall and spring term, each comprised of 15 weeks of instruction and an additional week for final exams for a total of 16 weeks (online, courses at college centers & evening courses are usually 13 weeks instruction plus a final exams week). There are 6-, 8- and 10-week sessions during the summer.

Smart Start Orientation. Smart Start helps students begin their college experience by providing information on college life—educational, social and cultural activities offered by CCAC. Students can get their photo ID, NetID and learn about essential college services. Students sign up for Smart Start online using Appointment Central, by telephone or via mail.

SMARTHINKING. (*See Online Tutoring.*)

Syllabi/Syllabus. A summary of the main points of a CCAC credit course that includes course name and number, credits and number of class work required, pre- and corequisite(s) if applicable, course description and learning outcomes. Syllabi for current courses are found on the Master Course Syllabi. (*See Course Outline.*)

Third Party. The term used to describe a student's tuition sponsor that may refer to an employer or other funding agency

Transcript. A student's grade record is available in official and unofficial formats. When grades are changed, completed or old grades are removed from GPA calculation and these transactions are noted on the official transcript. For more information, go to ccac.edu/transcripts-degree-verification/

Transfer Credits. If a student has taken courses at another accredited college and wishes to have them count toward his/her degree at CCAC, he/she should request that a transcript be forwarded to CCAC from the other college and request evaluation. These transferred credits will appear on the CCAC transcript. Only A, B and C grades are transferred. The grades earned elsewhere will not calculate into a student's CCAC GPA. Some limited admission/limited enrollment programs may take these grades into consideration when students are applying to them.

Transfer Student. A student who plans to continue his or her education after CCAC. Transfer students should meet early in their CCAC career with a counselor at their campus to develop a program of study using transferable courses.

Transferable Course. Course that another college or university will accept toward a student's program of study at the college or university.

Tuition. The tuition is a per-credit tuition rate for students taking 1 to 11 credits and a flat tuition rate for students taking 12 to 18 credits. Students registering for more than 18 credits will be charged the flat tuition rate plus the per credit tuition rate. Specific tuition amounts and associated fees are available at ccac.edu/payment/

Tutoring. Free service is offered through the Library and Learning Services departments at each campus for students taking credit courses. Both in-house (face-to-face) and online tutoring services (SMARTHINKING) are available. Students are encouraged to make an appointment for this service. (See ccac.edu/Tutoring.aspx)

Unspecified Elective. Any college level credit CCAC course may satisfy this requirement. Students should select all courses in consultation with an academic advisor.

UserName. A name that uniquely identifies someone on a computer system. Each student has a unique username and is responsible for managing the password for this account that provides access to computers and numerous electronic systems for learning, communications, and financial and academic records.

Vertical Change. Students will be tested early in English, mathematics and reading classes to determine if they are appropriately enrolled. If the test results indicate a change is necessary the instructor will direct the student on how to make the change.

Web Advising. Students living more than 50 miles from a CCAC location can complete the enrollment process and meet with an academic advisor using the Web Advising program. Students must meet the technical requirements for Web Advising. For more information go to ccac.edu/Web-Based-Advising/

Withdrawal. In order not to receive a grade in a class or classes, students must officially withdraw within the specific withdrawal period. When this is done a W grade appears as the final grade on the student transcript. Students who stop attending without officially notifying the Registration and Advisement office will receive a grade in the class or classes.

Workforce Development and Community Training And Development. Programs and classes that provide job training and teaches life skills to those who can benefit from this support in order to better socialize, care for themselves and contribute to society. We provide skills training for those who take care of this special population and we make sure that the elderly have the proper programs to enjoy and take care of their affairs. We provide classes for those who wish to develop or improve skill sets in the human service/non-profit arena. (See ccac.edu/Human_Service_Programs.aspx)

Work-Study. Students may qualify for a work-study award as part of the financial aid package. Students are able to earn a wage while working in a college office or approved off-campus location. (See *Financial Aid for more information.*)

Appendices

Appendix A Financial Aid Academic Progress Guidelines

In order to qualify for federal financial aid (Federal Pell Grant, Federal SEOG, Federal Work study, Federal Direct Student Loans and Federal Direct Plus Loans) and/or any CCAC funded grant or scholarship, a student must maintain satisfactory academic progress as established by the college in accordance with federal guidelines. A student's **entire** academic record will be considered in the determination of eligibility for financial assistance, whether or not any previous aid was received.

Satisfactory Academic Progress Definition:

1. Satisfactory academic progress for financial aid recipients is defined as follows:
 - Successful completion of 67 percent of all credits attempted;
 - A degree, certificate or diploma must be earned within 150 percent of attempted required credits for each program. For example, if a program requires 30 credits to graduate, the certificate must be earned within 45 attempted credits. If a program requires 60 credits to graduate, the degree must be earned within 90 attempted credits.
 - A student pursuing financial aid eligible diploma or certificate programs that are less than two years in length, academic progress will be checked at the mid-point of the student's program.
 - An overall minimum grade point average (GPA) is maintained as follows:

Credits attempted	GPA
0–24.....	1.50
25–48.....	1.75
49–59.....	1.90
60+.....	2.00

W, I, F, N and X grades will be calculated into the GPA as credits attempted with zero grade points earned. Courses passed with a grade of P will be counted into courses attempted but not into GPA.

2. Developmental courses will be counted as credits attempted and calculated into the GPA.

3. Students who feel that there are extenuating circumstances which may effect the denial of financial aid have the right to appeal in accordance with the financial aid appeal process. Appeals must be in writing, must be accompanied by any appropriate documentation that would support the appeal request and must be submitted prior to the 75 percent refund period for the term for which the student is making the appeal.

4. Satisfactory academic progress is checked each May; therefore, students who begin courses in the summer or fall term will first be reviewed for academic progress at the end of the spring term. However, students who do not meet the academic progress guidelines at the end of the fall term will be considered on academic probation. Students will be notified of this probationary status.

Academic Progress for PHEAA State Grants:

Academic progress guidelines for PHEAA state grants are different than the academic progress guidelines for federal and institutional grants and scholarships described above. Academic progress requirements for PHEAA state grants are disclosed in each student's PHEAA Grant eligibility notice.

If you are applying for or receiving a grant from the Pennsylvania Higher Education Assistance Agency (PHEAA) please note that at least half of your class schedule must be for classes that are fully offered on a campus/center. In addition, your program of study also needs to have at least half of its courses offered fully on a campus/center. If you are uncertain how this PHEAA policy relates to your class schedule, please contact the director of Financial Aid at the campus of your choice.

Note: students with medical disabilities as defined by the American with Disabilities Act (ADA) of July 1990 (PL 101-336) may request an accommodation to the 50 percent in-classroom instruction enrollment requirement of the Pennsylvania state grant program. The ADA Accommodation Request Form may be found online at <http://www.pheaa.org/funding-opportunities/stategrant-program/pdf/2011-2012/ADA-accomodation-request-form.pdf>.

Federal Student Loan Grade Levels:

Students applying for Federal Stafford Student Loans or Federal PLUS Loans are subject to the same academic progress guidelines described above. In addition, for the purpose of processing student loans, grade levels are defined as follows:

Credits completed

0–29.....Grade Level 1
30 +.....Grade Level 2

Withdrawals

Students receiving financial aid and who withdraw, never attend or stop attending class(es) either officially or unofficially will have financial aid adjusted as follows:

Never Attended

Financial aid is available to eligible students who enroll at the institution for the period for which aid is awarded. Students who never attend classes after registering for a specific term are not eligible for financial aid.

Students who never attend classes and are reported by the faculty as never attending will have all financial aid cancelled for the class(es) in question. All forms of financial aid including federal, state and/or institutional grants or scholarships will be fully cancelled, even if the institution elects to retain tuition and fees assessed at the time for registration. In addition, students who have applied for and would otherwise be eligible for the Federal Stafford Student Loan program will have their loan proceeds returned to the lender. The institution will retain all tuition and fees assessed those students but will not include these students for state appropriations.

Students who received a refund as a result of receiving financial aid in excess of tuition and fees and who never attend will be expected to repay the institution for all funds disbursed to the student in good faith.

Official Withdrawals

Financial aid is available to eligible students who enroll at the institution for a specific period and for a specific number of courses. Financial aid will be calculated based upon the initial enrollment of the student but will be adjusted to reflect a student's adjustment to his/her schedule during the 60 percent period enrollment.

Students who drop or withdraw from classes **after the institution's refund period** may have financial aid adjusted (unless the student completely withdraws, either officially or unofficially, *i.e.*, stops attending) but will be expected to continue to maintain satisfactory academic progress according to federal guidelines for financial aid recipients. The institution will not adjust the student's tuition and fees for students who

withdraw after the institution's refund period and may include these students for state appropriations.

Unofficial Withdrawals (Stops Attending)

Financial aid is available to eligible students who enroll at the institution for a specific period and for a specific number of courses. Students who stop attending classes as reported by the faculty will have financial aid adjusted to reflect the actual courses the student is enrolled in and attending.

Students who are reported by the faculty as stopped attending classes will have their financial aid adjusted if the student has stopped attending classes **during the institution's refund period**. The institution will retain the full tuition and fees of students who stop attending classes and may report these students as enrolled for state appropriations. This procedure parallels the manner in which the institution adjusts students who officially withdraw from classes.

Students who are reported by the faculty as having stopped attending classes **after the institution's refund period** (unless the student has stopped attending all classes) will not have financial aid adjusted, but will be expected to make satisfactory academic progress according to the federal guidelines established for financial aid recipients. The institution will retain the full tuition and fees of students who stop attending classes and may report these students as enrolled for state appropriations. This procedure parallels the manner in which the institution adjusts students who officially withdraw from classes.

Title IV Refund Procedures

Students who received federal financial aid and who completely withdraw (either officially or unofficially) from classes up to the 60 percent period of enrollment will have federal financial aid adjusted. This adjustment will reflect the portion of federal financial aid that is unearned for the period for which the student attended. If the student received a refund as a result of receiving financial aid in excess of tuition and fees, some or all of the refund money may need to be repaid to the institution. In addition, if the student's financial aid is adjusted and that adjustment leaves an unpaid balance for tuition and fee expenses, the student is expected to also pay the institution for these charges.

The institution will retain all tuition and fee charges if the student withdraws after the refund period. The institution will adjust tuition and fee charges if the student withdraws during the refund period.

Financial Aid Refunds

Effective with the fall 2012 semester there will be a 30 day delay in the disbursement of all eligible financial aid funds to student's accounts. This means that financial aid funds will be dispersed to eligible student's accounts on the 30th calendar day of the semester. Refund checks will be prepared and mailed as soon as possible after the disbursement date.

Students will be able to charge required books and supplies at the CCAC campus bookstore during the first three weeks of the Fall semester, provided that the Free Application for Federal Student Aid (FAFSA) has been filed by August 1st and all required additional documentation that is needed to complete the file is received by their CCAC campus Financial Aid Office no later than August 1st. Students who wish to charge their books during the first 3 weeks of the Spring semester must have their FAFSA and all required documentation filed and submitted no later than December 1st.

A complete copy of the new financial aid refund policy can be found at ccac.edu, search keywords "*financial aid refund*."
Effective Fall 2012

Appendix B College Refund and Drop Policies

As you consider whether you want to drop and/or add a class or classes, you should be aware of the following rules:

- No tuition and refundable fees will be dropped from the 15% point of the term forward. Fall, Spring, and Summer sessions may be of varying lengths, each with their own drop dates. These drop dates are published in the Credit Schedule and on ccac.edu. You may also consult the Registration and Advisement office at your campus for information on drop dates.
- All tuition and refundable fees will be dropped when you drop your classes before the first day of the semester. If you are due a refund it will be in the form of a check or credit to your credit card (MasterCard, Visa, or Discover) if applicable, or directly to your checking account if you use e-Refund.

If you drop a course within the published drop period, you will receive a 75 percent drop in tuition and a 100 percent drop in refundable fees. The remaining 25 percent of your tuition and 100 percent of non-refundable fees are forfeited.

If you drop a course within the published drop period and add a class of equal credits at the same time, the 25 percent is not forfeited. It is automatically counted toward the costs of the added class. No tuition funds are lost to you.

Pay Your Tuition

Please be advised that once you are registered, you are responsible for payment of tuition and fees. There are four ways to pay the charges that are billed to your student account.

1. You can pay the registration costs yourself. The college accepts cash, check, money order, MasterCard, Visa or Discover Card. You can make payments in full in person at any Student Accounts office or on ccac.edu.
2. A third party (i.e. employer/third party agency) can guarantee payment by signing a contract. A copy of that contract should be presented to the cashier. Contract forms are available at the Student Accounts office on each campus and on ccac.edu.
3. You can be awarded financial aid which can pay for all or some of your registration costs. You should contact the Financial Aid office prior to registration to find out about your financial aid options.
4. You can setup a tuition payment plan for your semester registration costs. Refer to the college's current schedule of classes for the most current tuition payment plan information or visit the Student Accounts office on your campus for more details. A tuition payment plan can only be set up in person at a Student Accounts office on campus.

Detailed information regarding these payment options is available at ccac.edu/payment-options/

Student Financial Responsibility

Student acknowledges that all financial assistance received in connection with his or her attendance at the College, including all loans, scholarships, grants, stipends, sponsorships, payment plans or other financial aid, constitute educational loans or educational benefits that are non-dischargeable under Section 523(a)(8) of the United States Bankruptcy Code.

Student acknowledges that any overpayment or refund received by Student from any loan, scholarship, grant, stipend, sponsorship, payment plan, or other financial aid received in connection with his or her registration at the College constitutes an educational benefit that is non-dischargeable under Section 523(a)(8) of the United States Bankruptcy Code.

Bookstore Charge

You can charge certain purchases made in the CCAC campus bookstores as well as on the CCAC online bookstore if:

- You are sponsored by an agency or company that pay for books and/or supplies. You will need to submit a contract form authorizing payment for books at the Student Accounts office.
- You have been awarded financial aid in excess of tuition and fees. Please refer to FA Refunds, Appendix A.
- You have excess guaranteed student loan funds. Please refer to FA Refunds, Appendix A.

Appendix C Procedure for Readmission from Academic Suspension

A. A student who is academically suspended at the end of a semester and who does not take any courses in the ensuing four years:

1. may register for 12 credits or more for the semester for which the student wishes to register when the student returns.
2. must make an appointment to see a counselor who will discuss the plans the student has for future success and the specific courses the student may want to take.
3. will then be referred to an academic advisor by the counselor.

B. A student who is academically suspended at the end of a semester and who does not take any courses in the ensuing two consecutive semesters (all summer sessions combined are equal to one semester):

1. may register for up to nine credits for the following semester.
2. must make an appointment to see a counselor who will discuss the plans the student has for future success and the specific courses the student may want to take.
3. will then be referred to an academic advisor by the counselor.

C. A student who is academically suspended at the end of a semester, is granted an academic appeal or successfully takes courses in the ensuing semester, with a semester GPA of 2.00 or above:

1. may register for up to 12 credits for the following semester.

2. must make an appointment to see a counselor who will discuss the plans the student has for success and the specific courses the student may want to take.
3. will then be referred to an academic advisor by the counselor.

D. A suspended student whose cumulative GPA has risen to a 2.00 or above due to course work is no longer suspended. The student is free to take a full-time course load and is not required to see a counselor.

E. A student who is academically suspended at the end of a semester, who is granted an academic appeal, but who never registered for courses in the ensuing semester:

1. will have credits and course restrictions prescribed as the terms of the student's appeal being granted still in effect.
2. must still make an appointment to see a counselor, who will discuss a schedule with the student.
3. will then be referred to an academic advisor by the counselor.

Appendix D The Student Code of Academic Conduct

The college is committed to the advancement of knowledge and learning and to the development of responsible individuals. In meeting this commitment, the college has an obligation to monitor academic integrity. Students are expected to uphold appropriate standards of academic integrity. The college assumes, and indeed views as indispensable to a student's academic career, the principle that every student is honor-bound not to cheat or act dishonorably in or out of the classroom. Academic dishonesty is a serious offense because it undermines the bonds of trust and honesty among members of the campus community.

Academic Misconduct Rules–

The college expects students will not engage in:

Cheating

The act or attempted act of deception by which a student misrepresents that he/she has mastered information on an academic exercise that, in fact, has not been mastered.

Fabrication

The use of invented information or citation in an academic exercise or the falsification of research or other findings.

Plagiarism

Occurs when a student:

- fails to place quotation marks around material copied word-for-word from another source, published or not, including web-based content (long quotes are indented and blocked, according to discipline documentation requirements.);
- neglects to attribute words and/or ideas to their author, whether the author is published or not;
- closely follows the original's wording and sentence structure when attempting to paraphrase; and/or
- presents all or part of a paper from an essay-purchasing website or other source as his or her own work.

Ethical Misconduct

- Knowingly violating a standard of ethical conduct incorporated into a specialized program of study

Academic Dishonesty

- Changing or altering a grade or obtaining and/or distributing any part of a test that is to be administered, or inappropriate collaboration or other violation of the terms of an academic assignment as defined by the instructor and/or syllabus.

Facilitation of Academic Misconduct

- Intentionally and/or knowingly helping or attempting to help another to violate any provision of the student code for academic conduct

The following sanctions may be imposed for violations of the Student Code of Academic Conduct.

SANCTIONS IMPOSED BY FACULTY AT THE INFORMAL STAGE:

The faculty member in whose course the violation took place may impose one of the following sanctions:

A. Warning or Grade Penalty

An instructor may determine that the violation of the Student Code of Academic Conduct was unintentional. If so, the instructor may warn the student orally or in writing about the violation and/or may impose a penalty to the grade for the assignment or the course as per the instructor's outline.

B. Academic Misconduct Referral

An instructor requests intervention by the appropriate associate dean of Academic Affairs. The following sanctions may be imposed.

SANCTIONS IMPOSED BY THE DEAN AT THE FORMAL STAGE:

The following sanctions may be imposed by the appropriate associate dean of Academic Affairs for violations of the Student Code of Academic Conduct:

A. Warning

Oral or written notification of a violation of a specified rule and warning that further misconduct will result in more severe consequences.

B. Probation

Continued classroom attendance is permitted subject to appropriate and specific restrictions.

C. Suspension

Total exclusion from the college, its property and events for a specified and appropriate period of time, or until the satisfaction of conditions established at the time of the suspension.

D. Expulsion

Permanent exclusion from the college, its programs, property and events as a full-time or part-time student.

Sanctions may be modified or additional restrictions may be imposed depending upon the merits of the individual case and the nature of the offense. Additional and/or alternative sanctions may be imposed which could include but are not limited to: exclusion from campus activities, temporary or permanent loss of electronic (computer and email) resources, reduced academic course load, referral to the counseling department and/or restitution and service to the campus.

SANCTIONS IMPOSED BY THE DEAN AT THE FORMAL STAGE:

Repeated violations of the Student Code of Academic Conduct may result in more severe sanctions. The student's record of academic misconduct will be kept at least as long as the student is enrolled.

Procedures for Academic Misconduct

Informal Procedure

Faculty member discusses academic misconduct with student.

If the student admits to or is cleared of the academic misconduct, the matter can be resolved between the faculty member and the student.

If the matter is not resolved satisfactorily at the informal stage, it will be subject to formal procedures.

Formal Procedure

Step 1: Report the Allegation(s)

If a student denies the academic misconduct, the faculty member must notify the student, in writing, that he/she will be filing an allegation of academic misconduct with the appropriate associate dean of Academic Affairs and the campus dean of Student Development. The faculty member must complete the Academic Misconduct Report form and send it to the appropriate associate dean, the dean of Student Development and the student within two weeks of the infraction. The appropriate associate dean will oversee the conduct procedures.

Step 2: Review the Allegation(s)

Upon receipt of the allegation(s), the appropriate associate dean in collaboration with the campus dean of Student Development will conduct a preliminary investigation and may do any of the following:

- dismiss the allegation(s);
- if the student admits the violation, impose a sanction as prescribed by the Student Code of Academic Conduct; or
- if the student admits the violation, impose additional and/or alternative sanctions to those prescribed by the Student Code of Academic Conduct;
- if the student contests the allegation, refer the matter to the Conduct Hearing Board composed of one student, one faculty member and one administrator chosen by the appropriate associate dean of Academic Affairs. The hearing board will be convened by the appropriate associate dean who will assist the hearing board in the selection of a chairperson and inform the committee of proper hearing procedures.

The following due process procedures will apply during the hearing.

The student has the right to:

- a. receive adequate written notice of the specific charges and the hearing date at least three calendar days prior to the hearing. Such notice will include the information that evidence and/or testimony will be presented;
- b. have sufficient time to prepare a response;
- c. examine and respond to evidence and testimony; have witnesses appear on the student's behalf; question any witnesses who appear at the hearing; and
- d. have any person(s) accompany the student during the hearing as an advisor, but not to actively participate.

All decisions will be made by a majority vote of the Conduct Hearing Board on the basis of whether the evidence showed a violation was more likely than not. The hearing board

will forward its written recommendation to the appropriate associate dean of Academic Affairs in charge of the proceedings within 48 hours upon reaching a decision. The appropriate associate dean has the authority to accept, reject or modify the recommendation and will inform the student of his/her decision by certified mail.

Step 3: Right to Appeal

The student will have the right to appeal, in writing, the decision of the appropriate associate dean to the campus dean of Academic Affairs who will serve as the final authority. Such an appeal must be presented in writing by the student within three calendar days of the associate dean's decision and should contain the specific reasons why the decision of the associate dean is being challenged. The campus dean of Academic Affairs will review the appeal and convey his/her decision to the student in writing within seven calendar days of the date the appeal was filed.

Academic Record

For tracking purposes, faculty report all violations of the Student Code of Academic Conduct at the formal stage, via an Academic Misconduct Report form, to the appropriate associate dean of Academic Affairs. The dean's office is responsible for keeping an academic record of the violation.

Appendix E

Student Code of Behavioral Conduct

1. Introduction

At CCAC, student members of the community are expected to uphold and abide by certain standards of conduct that form the basis of the Student Code of Behavioral Conduct. These standards are embodied within a set of values that include integrity, social justice, diversity, respect, community and responsibility. When members of the community fail to exemplify these values, campus conduct proceedings are used to assert and uphold the Student Code of Behavioral Conduct. The CCAC Student Code of Behavioral Conduct and its procedures are meant to be in keeping with the mission of the Community College of Allegheny County and are designed to educate the student members of our community and encourage them to uphold the standards of conduct that this community espouses while still affording all involved parties to have appropriate due process if a student is accused of violating the standard(s). It is meant to be developmental in nature and not punitive.

Students should be aware that the student conduct process is quite different from criminal and civil court proceedings. Procedures and rights in student conduct proceedings are conducted with fairness to all, but do not include the same protections of due process afforded by the courts. Violations of federal, state and local laws are incorporated as offenses under the Student Code of Behavioral Conduct. When an offense occurs over which the college has jurisdiction, the college conduct process will usually go forward notwithstanding any criminal charges that may arise from the same incident. Should a student withdraw from the college when criminal charges are made, it is the typical practice of the college to pursue investigation and resolution of campus conduct matters, regardless of the fact that the student has withdrawn.

When a student is accused, arrested, charged or indicted for a violent or drug-related off-campus crime, the college may elect to take action against that student for violation of the code of conduct, which incorporates violation of local, state and federal laws as code infractions.

When it has reasonable cause to separate a student from the community, the college may suspend a student for a reasonable time pending the scheduling of a campus hearing for violation of the code of conduct. The college reserves the right to exercise its authority of suspension upon notification that a student is facing criminal investigation and/or charges. The college will permit a student who receives a suspension to request a meeting with the campus president to show cause why a suspension is not merited. Regardless of the outcome of this meeting, the college may still proceed with the scheduling of a campus hearing.

When criminal charges are pending, the college may be delayed or prevented from conducting its own investigation and moving forward with a campus hearing. In such cases, the college will delay its hearing until such time as it can conduct an internal investigation, or obtain from law enforcement sufficient information upon which to proceed.

The Student Code of Behavioral Conduct applies to guests of community members, whose hosts may be held accountable for the misconduct of their guests. Visitors to and guests of the college are also protected by the Student Code of Behavioral Conduct and may initiate grievances for violations of the Student Code of Behavioral Conduct committed by members of the college community against them. Those who are aware of misconduct are encouraged to report it as quickly as possible to the campus dean of Student Development.

STANDARDS OF BEHAVIOR

Any student found to have committed the following misconduct is subject to the sanctions outlined below. Unacceptable conduct includes, but is not limited to, the following:

Integrity

CCAC students exemplify honesty, integrity and a respect for truth in all of their dealings. Behavior that demonstrates a lapse of integrity includes, but is not limited to:

- knowingly furnishing false, falsified or forged information to any member of the college community, such as falsification or misuse of documents, accounts, records, identification or financial instruments;
- acts of academic dishonesty as outlined in the Code of Academic Misconduct;
- unauthorized possession, duplication or use of means of access (keys, cards, etc.) to any college building;
- action or inaction by someone in collusion with a wrongdoer which fails to discourage a known and obvious violation of college policy or law;
- violations of positions of trust or authority within the college community; and/or
- tampering with the election of any college-recognized student organization.

College Community

CCAC students honor and value their college community. Behavior that violates this value includes, but is not limited to:

- misuse of access privileges to college premises or unauthorized entry to or use of buildings, including trespass;
- misuse or unauthorized use of college or organizational names and images;
- knowingly taking possession of stolen property;
- intentional and unauthorized taking of the property of the college or personal property of a member of the college community which is on campus;
- intentional and unauthorized destruction or damage to college property or to the property of another;
- misuse of college computing facilities, equipment, network, passwords, accounts or information. Students who connect their personal computers to the campus network will be held responsible for any violation of this policy that originates from that computer. Examples of misuse include:
 - a. use of computing facilities to send harassing or abusive messages;
 - b. use of computing facilities to interfere with the work of other community members;

- c. unauthorized access to a file or personal or group account; and/or
- d. use of computing facilities to interfere with normal operation of the college computer system;
- anonymous or forged network news articles or email messages;
- disk usage over the allotted limit without prior approval;
- unauthorized transfer of an electronic file;
- use of another individual's identification and password;
- gambling in any form, including the use of playing cards and dice (subject to local statutes, activities such as raffles or drawings that benefit recognized campus organizations are permitted with the approval of the dean of Student Development);
- possession of firearms, explosives, other weapons (including, but not limited to BB/pellet guns, slingshots and sharp edged instruments, such as hatchets when used as weapons), or dangerous chemicals while on campus, unless properly authorized; and/or
- violation of state, local, or campus fire policies, including:
 - a. failure to evacuate a college building during a fire alarm;
 - b. improper use of college fire safety equipment; and/or
 - c. tampering with or improperly engaging a fire alarm in a college building.

Social Justice, Diversity

CCAC students hold social justice, equality and respect for difference and diversity as values central to the community. Behavior that violates this value includes, but is not limited to:

- discrimination, intimidation, harassment and bullying;
- malicious, callous or reckless disregard for the welfare of another human being;
- disruption of college operations, including obstruction of teaching, research, administration, other college activities, or other authorized non-college activities which occur on campus;
- obstruction of freedom of movement by community members or visitors;
- the knowing failure of any organized group to exercise preventive measures relative to violations of this Student Code of Behavioral Conduct by members;
- abuse, interference or failing to comply in college processes including conduct hearings; and/or
- abuse of the campus conduct system, including:
 - a. failure to attend meetings scheduled for conduct code administration purposes;
 - b. falsification, distortion or misrepresentation of information;
 - c. failure to provide, destroying or hiding information during an investigation of an alleged policy violation;

- d. attempting to discourage an individual's proper participation in, or use of, the campus conduct system;
- e. harassment (verbal or physical) and/or intimidation of a member of a campus conduct body prior to, during and/or after a campus conduct proceeding;
- f. failure to comply with the sanction(s) imposed by the campus conduct system; and/or
- g. influencing or attempting to influence another person to commit an abuse of the campus conduct system.

Respect

College students show respect for each other, for property and for the community. Behavior that violates this value includes, but is not limited to:

- threatening or causing physical harm, verbal abuse or other conduct which threatens or endangers the health or safety of any person;
- hazing (as defined below);
- violence between those in an intimate relationship to each other;
- stalking, defined as repetitive, menacing pursuit, following, harassment and/or interference with the peace and/or safety of a member of the community; or the safety of any of the immediate family members of the community;
- sexual misconduct, (defined below):
 - a. sexual harassment;
 - b. non-consensual sexual contact;
 - c. non-consensual sexual intercourse; and/or
 - d. sexual exploitation;
- inappropriate conduct which is disorderly, disruptive or indecent while on campus or at functions sponsored by, or participated in by, the college—this includes disruptive or unauthorized use of cameras and/or electronic devices that interfere with classroom activities or other college business;
- failure to comply with directions of college officials or law enforcement officers during the performance of their duties and/or failure to identify oneself to these persons when requested to do so; and/or
- use of all tobacco products, including cigarettes, pipes, cigars, smokeless or vapor cigarettes, chewing tobacco and snuff, except in designated outdoor locations.

CCAC students are given and accept a high level of responsibility as role models. Behavior that violates this value includes, but is not limited to:

- use, possession or distribution of alcoholic beverages except as expressly permitted by law and the college's Alcohol Policy. This includes possession/consumption by
- those under the age of 21, providing alcohol to those under the age of 21, possession of a common source container

(empty or full), driving under the influence and public intoxication by persons of any age (see the full policy on alcohol Appendix K);

- use, possession or distribution of narcotic, or other controlled substances, as well as drug paraphernalia, except as expressly permitted by law; (see the full policy on alcohol Appendix K);
- abuse or misuse of prescriptions or over-the-counter medications;
- assisting in the violation of college policies or public laws;
- violations of federal, state or local laws which affect the interests of the college community, whether on or off-campus;
- violation of other published college policies, rules, or policies; and/or
- intentionally or recklessly causing a fire which damages college or personal property, or which causes injury to any member of the community.

CONDUCT PROCEDURES

Whenever a complaint is made against any student for misconduct, the dean of Student Development or such other person as may be designated by the college president will conduct an investigation of the allegations as soon as possible (generally, for offenses against the academic community the president will designate the dean of Academic Affairs). The dean of Student Development may make any necessary modification to these procedures that does not materially jeopardize the fairness owed to any party.

Notice & Pre-hearing Procedures

Once a determination is made that reasonable cause exists for the dean of Student Development or designee to refer a complaint for a hearing, notice will be given to the accused student. Notice will be in writing, and may be delivered in person during a meeting with the dean of Student Development or designee. Notice will also be mailed to the local or permanent address of the accused student. Once mailed, such notice will be presumptively delivered. If a student is under the age of 18, a copy of the notice will be sent to the parents or guardian of the student.

The letter of notice will state briefly a description of the incident alleged, as well as stating all policies the accused student is alleged to have violated and the possible consequences if the accused student is found in violation. Relevant procedures for resolution of the complaint will be included in the notice. The letter of notice will direct the accused student to contact the dean of Student Development or designee within three calendar days of receipt to respond to the complaint.

A meeting with the dean of Student Development or designee will be arranged to explain the nature of the complaint and the conduct process. Within the three calendar day period, the accused student must schedule this meeting and at that time or before, indicate in writing to the dean of Student Development or designee whether s/he admits or denies the allegations of the complaint. If the accused student admits the violation(s), the dean of Student Development will impose appropriate sanctions. Such a disposition will be final and there will be no subsequent proceedings, unless the sanctions include suspension or expulsion. In that case, the accused may request a hearing by the conduct hearing board on the issue of sanctions, only. If the student does not admit to the violation(s), the complaint will be referred for a hearing. Minor complaints will be referred for an administrative hearing and more serious complaints will be referred to the conduct hearing board (see below for details on the proceedings of this committee). The dean of Student Development has discretion to determine the severity of the alleged violation(s) and whether informal or formal hearing procedures will apply. Generally, any misconduct that will result in less than separation is considered minor, and any misconduct that is likely to result in suspension or expulsion is eligible for referral to the conduct hearing board.

Each campus will identify a pool of representatives made up of an equal number of students, faculty and administrators chosen by the leadership of each constituency to be trained to serve as needed on conduct hearing boards. This pool of representatives will be expected to be available for conduct hearings and participate in training as identified below. When a conduct hearing board is convened one of the trained representatives from each constituency group will be selected by the dean of Student Development based upon availability in consideration of the established time frames in the Student Code of Behavioral Conduct, Conduct Procedures. (Note: Conduct Hearings addressing Title IX action will be made up of three individuals: one from the staff, one from administration and one from the faculty. See Sexual Misconduct Offenses, page 324)

Training for the Conduct Hearing Board.

Training for the conduct hearing board pool will take place as early in the fall semester as is reasonable for a minimum of five students, five faculty, three staff and five administrators from each campus to be chosen by the leadership of each constituency.

Decisions made by the conduct hearing board or the dean of Student Development or designee will be final, and sanctions implemented, pending the normal appeal process. The dean of Student Development has the authority to not impose the implementation of sanctions pending the appeal, at his/her discretion.

Administrative Hearings Procedures (Informal)

- a. Administrative hearings will be heard by the dean of Student Development or designee, and will be informal in nature.
- b. Written notice of the time, date and location of the hearing will be sent to the accused student at least five calendar days prior to the hearing date. The accused student may additionally be notified in person, by telephone or by email. Students may waive the five day notice requirement if they prefer an expedited hearing.
- c. If a student fails to respond to notice from the dean of Student Development or designee, the dean of Student Development or designee will initiate a complaint against the student for failure to comply with the directives of a college official and give notice of this offense. Unless the student responds to this notice within two calendar days by answering the initial notice, the student will be automatically suspended until such time as s/he responds to the initial complaint.
- d. Where a student denies violation of the Student Code of Behavioral Conduct, the dean of Student Development or designee will, upon receipt of a written denial from the accused student, schedule a hearing.
- e. Once a student denies a violation, they will be given a minimum of seven calendar days to prepare for a hearing.
- f. At least 48 hours before any scheduled hearing, the following will occur:
 - the accused student will deliver to the dean of Student Development or designee a written response to the complaint; and
 - the accused student will deliver to the dean of Student Development or designee a written list of all witnesses the accused student wants the college to call on his/her behalf at the hearing, giving the full contact information of any such witness, if known.
- g. At the hearing, witnesses and admissibility of information will be determined at the discretion of the dean of Student Development or designee. The hearing will consist mainly of informal questioning and discussion of the alleged incident.
- h. After the hearing, the dean of Student Development or designee will deliberate and determine whether it is more likely than not that the student has violated the Student Code of Behavioral Conduct. Once a finding is determined, if that finding is that of a policy violation,

the dean of Student Development or designee will determine an appropriate sanction. The dean of Student Development or designee will prepare a written finding, which will be shared with the accused student no later than two business days following the hearing.

- i. Procedures for appeal are detailed below.

Conduct Hearing Board Formal Hearing Procedures

1. Notice

Written notice of the time, date and location of the hearing will be sent to all parties to the complaint, who may additionally be notified in person, by telephone or by email.

2. Record of Proceeding

Proceedings before the conduct hearing board will be recorded. It is not necessary that a certified court reporter be used in the proceedings. An audio recording or minutes of the proceedings will be sufficient. In the event a transcript of the proceedings is requested, the person so requiring will pay the cost of reproduction. Recordings and communications related to the disciplinary procedure and resulting actions (before the dean of Student Development or such other designee of the president) will not be considered a public record as that term is defined by the Pennsylvania Open Records Act.

3. Committee Procedures

Once a student denies a violation, they will be given a minimum of seven calendar days to prepare for a hearing.

At least 48 hours before any scheduled hearing, the following will occur:

- the accused student will deliver to the dean of Student Development or designee a written response to the complaint;
- the accused student will deliver to the dean of Student Development or designee a written list of all witnesses the accused student wants the college to call on his/her behalf at the hearing, giving the full contact information of any such witness, if known;
- the accused student will deliver to the dean of Student Development or designee a written list of all items of physical information the accused student intends to use or needs to have present at the hearing, and will indicate who has possession or custody of such information, if known;
- the complainant will deliver to the dean of Student Development or designee a written list of all witnesses the complainant wants the college to call and all physical information that will be used by the complainant at the hearing and will indicate who has possession or custody of such information, if known;

- the parties will notify the dean of Student Development or designee, at least 48 hours prior to the hearing, of the names of any person who will serve in an advisory role and may be accompanying the parties at the hearing; Those in an advisory role are to be selected from members of the college community unless special permission for an outside person is granted by the dean of Student Development. Attorneys are permitted to attend conduct hearing board hearings, but must serve in an advisory role only, and may not address the committee. A student who intends to bring an attorney to the hearing must notify the dean of Student Development at least 48 business hours prior to the hearing. The college reserves the right to request that its attorney also attend in such circumstances and the hearing may be postponed if the college's attorney is not available at the time and date of the hearing until s/he is available to appear. Hearings shall be held within a reasonable amount of time;
- the dean of Student Development or designee will ensure that this information and any other available written documentation is shared between the complainant and accused student at least 24 hours before any scheduled hearing. In addition, the parties will be given a list of the names of all the hearing officers for the complaint. Should either party object to any members of the board or panel, they must raise all objections in writing to the dean of Student Development or designee immediately. Hearing officers will only be unseated if the dean of Student Development or designee concludes that their bias precludes an impartial hearing of the complaint. Additionally, any conduct hearing board member or hearing officer who feels he/she cannot make an objective determination must recuse himself or herself from the proceedings.
- the conduct hearing board shall be convened by the campus Dean of Student who will assist the conduct hearing board in selecting a chairperson.

If there is an alleged victim of the conduct in question, the alleged victim may serve as the complainant, or may elect to have the administration serve as complainant. Where there is no victim, the administration will serve as complainant. In any joint hearing, separate determinations will be made as to the responsibility of each student accused. The conduct hearing board may elect to separate hearings that have been referred jointly, in its discretion and in consultation with the dean of Student Development.

After a conduct hearing board hearing, the committee will deliberate and determine by majority vote whether it is more likely than not that the student has violated the Student Code of Behavioral Conduct. The dean of Student Development or designee will be present and available as a resource during all deliberations. Once a finding is determined, if that finding is that of a policy violation, the conduct hearing board will determine an appropriate sanction. The dean of Student Development or designee is responsible for informing the conduct hearing board of applicable precedent and any previous conduct violations by the accused student. The chair will prepare a written deliberation report to the dean of Student Development or designee detailing the finding, how each body member voted, the information cited by the body in support of its finding, and any information that the body excluded from its consideration, and why. This report should conclude with any recommended sanctions. This report should not exceed two pages in length, and must be submitted to the dean of Student Development or designee within 48 hours after the end of deliberations. The dean may make appropriate modifications and then will implement the final determination and inform the parties within seven calendar days after the hearing.

4. Admissible Information

The committee will consider all information that is relevant and credible. The committee may in its discretion limit or bar character witnesses. Any questions of the admissibility of information will be determined by the chair or the dean of Student Development.

The past sexual history or sexual character of a party will not be admissible by the other party in hearings unless such information is determined to be highly relevant by the chair or the dean of Student Development. All such information sought to be admitted at the hearing will be presumed irrelevant and any request to overcome this presumption by the parties must be included in the complaint/response or a subsequent written request and must be reviewed in advance of the hearing by the dean of Student Development or designee.

Previous conduct violations by the accused student are generally not to be considered as information about whether or not a student committed a subsequent violation of the Code of Behavioral Conduct (particularly if the student was found not responsible for the previous allegation). However, the dean of Student Development or designee may supply previous complaint information to the committee, or may consider it him/herself if he/she is hearing the complaint, and:

- 1) the accused student was previously found to be responsible for violating the Code of Behavioral Conduct in the previous case; and/or
- 2) the previous allegation would indicate a possible pattern of behavior and substantial conformity with that pattern by the accused student in the current case.

5. Sanctions

The following sanctions may be imposed upon any student found to have violated the Student Code of Behavioral Conduct:

A. Written Warning

A notice in writing to the student that the student is violating or has violated institutional policies. The letter informs the student that continued misconduct will result in further conduct action. The letter will be sent to the student's permanent residence and by email using the student's CCAC email account.

B. Probation

Probation for behavioral misconduct or academic misconduct reasons is a written reprimand for violation of specified college policies. Probation is for a designated period of time and includes the probability of more severe sanctions if the student is found to be violating any institutional regulation(s) during the probationary period. Conduct Probation is defined as: A student whose behavior on- or off-campus is in violation of established college policies and/or rules. Sanction imposed for not less than one semester nor more than three semesters. The conduct body determines the beginning and ending dates. Students on conduct probation may incur additional sanctions for any subsequent violation of college policies and/or rules, whether or not this violation is related to the original violation for which conduct probation was imposed.

Probation Restrictions

Students on probation may be subject to the following restrictions:

- (1) They may not hold any office or leadership role in any student or college organization or activity.
- (2) They may not represent the college in any on- or off-campus event.
- (3) Other restrictions may be established for individual situations.

C. Restricted Access

Offender may be restricted from entering specified buildings or areas on campus, from attendance at specified campus events or from use of specified equipment or facilities for definite periods of time.

D. Fines

Previously established and published fines may be imposed. In addition, the conduct body may recommend that the college refuse: (1) to grant academic credits or degrees; or (2) to issue grades or transcripts to the student offender(s) or student member(s) of an offending organization, until such fine is paid. The method of payment will be specified by the conduct body imposing the fine.

E. Restitution

Compensation for loss, damage or injury. This may take the form of appropriate service and/or monetary or material replacement. The conduct body may recommend that the college refuse: (1) to grant academic credits or degrees; or (2) to issue grades or transcripts to the student offender(s) or student member(s) of an offending organization, until restitution is complete.

F. Educational Projects

Completion of an educational or developmental project such as, but not limited to, the following: attending a specific workshop or program, writing an article or research paper on a specified topic, making an oral presentation to a campus group, participating in specified counseling/evaluation, work assignments and/or service to the college.

G. Suspension

Separation of the student from campus, classes and all privileges for a definite period of time, after which the student is eligible to return. The offender may not be on campus at any time except to come to the Safety and Security office for matters directly related to the suspension. In cases where suspension prevents coursework, the student will receive a grade of W. There will be no refund of tuition or fees. Any conditions for readmission will be stated in the order of suspension.

H. Expulsion

Permanent separation of the student from the college and a barring of the student from being present on-campus and at college-sponsored events. The student will receive a grade of W. There will be no refund of tuition or fees.

The following sanctions may be imposed upon groups or organizations:

- a. Those sanctions listed above.
- b. Deactivation: Loss of all privileges, including college recognition, for a specified period of time.

More than one of the sanctions listed above may be imposed for any single violation.

6. Appeal

There is no appeal from an administrative hearing.

To appeal from a conduct hearing board hearing:

1. Accused students or complainants may petition within three calendar days of receiving the written decision of the conduct hearing board for the review of its decision or the sanction imposed. Such petitions will be in writing and will be delivered to the dean of Student Development or designee.
2. If the dean of Student Development or designee determines that one of the five bases for appeal below has been met, the dean may either re-open the hearing to allow reconsideration of the original determination and/or sanction(s) or will refer the matter back to the conduct hearing board for reconsideration. The dean of Student Development or designee serves as the final level of review in the conduct matter.
3. Except as required to explain the basis of new information, a review will be limited to review of the verbatim record of the initial hearing and supporting documents for one or more of the following purposes:
 - a. to consider new information, unavailable during the original hearing, that could be outcome determinative;
 - b. to assess whether a material deviation from written procedures impacted the fairness of the hearing;
 - c. to decide if a sanction(s) is grossly disproportionate to the severity of the offense;
 - d. to determine that the finding is not in accordance with the information;
 - e. to assess whether bias on the part of a conduct board member deprived the process of impartiality.

Every opportunity should be taken to return the complaint to the conduct hearing board for reconsideration, where possible. On appeal by any party to the complaint, the dean of Student Development or designee may support or change a decision, increase, decrease or modify a sanction. An appeal is not a rehearing, though witnesses may be called or parties questioned as necessary. The reviewing body will be deferential to the original decision maker, making changes to the finding only where there is clear error and to the sanction only if a compelling justification to do so exists.

SUPPLEMENTAL COLLEGE POLICIES & PROCEDURES

Gambling Policy

Students are expected to abide by the federal laws and the laws of the Commonwealth of Pennsylvania prohibiting illegal gambling, including online gaming. Gambling for money or other things of value on campus or at college-sponsored activities is prohibited except as permitted by law.

Such prohibited activity includes, but is not limited to, betting on, wagering on or selling pools on any college athletic event; possessing on one's person or premises (e.g., room, car) any card, book or other device for registering bets; knowingly permitting the use of one's premises or one's telephone or other electronic communications device for illegal gambling; knowingly receiving or delivering a letter, package or parcel related to illegal gambling; offering, soliciting or accepting a bribe to influence the outcome of an athletic event; and involvement in bookmaking or wagering pools with respect to sporting events.

Hazing

All acts of hazing by any individual student and college registered student club or organization and any of its members or alumni are prohibited. Students are entitled to be treated with consideration and respect, and no individual may perform an act that is likely to cause physical or psychological harm or social ostracism to any other person within the college community. Accordingly, the following behavior is expressly forbidden as hazing when related to the admission, initiation, pledging, joining or any other group-affiliation activity:

- a. physical abuse (on- or off-campus), including but not limited to, paddling, slapping, kicking, choking, scratching and exposure to extreme (i.e. cold or hot) water temperatures, the consumption of disgusting and/or dangerous concoctions;
- b. causing excessive mental stress, including but not limited to, placing prospective members of an organization or group in ambiguous situations which lead to confusion and emotional stress, sleep deprivation;

- c. verbal abuse, including but not limited to, shouting, screaming or use of derogatory, profane, or obscene language; or
- d. subservience, including but not limited to, any activity which promotes a class system within organizations or activities which facilitate inappropriate levels of authority over students.

This list is not exhaustive and any student or organization found to be involved in any hazing activity will face conduct action and will likely be subjected to expulsion from the college. Violation of this policy exists irrespective of the voluntary or consensual participation in the hazing activity by the person being hazed.

SEXUAL MISCONDUCT OFFENSES INCLUDE, BUT ARE NOT LIMITED TO:

1. Sexual Harassment
2. Non-consensual Sexual Intercourse (or attempts to commit same)
3. Non-consensual Sexual Contact (or attempts to commit same)
4. Sexual Exploitation

1. SEXUAL HARASSMENT

Unwelcome, gender-based verbal or physical conduct is sufficiently severe, pervasive and objectively offensive that unreasonably interferes with or deprives someone of educational access, benefits or opportunities.

Three Types of Sexual Harassment

A. Hostile Environment includes any situation in which there is harassing conduct that is sufficiently severe, pervasive and objectively offensive that it alters the conditions of education or employment, from both a subjective (the alleged victim's) and an objective (reasonable person's) viewpoint.

B. Quid pro quo sexual harassment exists when there are:

- 1) unwelcome sexual advances, requests for sexual favors or other verbal or physical conduct of a sexual nature; and
- 2) submission to or rejection of such conduct results in adverse educational or employment action.

C. Retaliatory harassment is any adverse employment or educational action taken against a person because of the person's participation in a complaint or investigation of discrimination or sexual misconduct.

2. NON-CONSENSUAL SEXUAL INTERCOURSE

Non-consensual Sexual Intercourse is:

- any sexual intercourse (anal, oral or vaginal),
- however slight,
- with any object,
- by a man or a woman upon a man or a woman,
- without consent*.

3. NON-CONSENSUAL SEXUAL CONTACT

Non-consensual Sexual Contact is:

- any intentional sexual touching,
- however slight,
- with any object,
- by a man or a woman upon a man or a woman,
- without consent*.

***Consent Defined**

Consent is informed, knowing and voluntary. Consent is active, not passive. Silence, in and of itself, cannot be interpreted as consent. Consent can be given by words or actions, as long as those words or actions create mutually understandable permission regarding the conditions of sexual activity. Consent to one form of sexual activity cannot imply consent to other forms of sexual activity. Previous relationships or consent cannot imply consent to future sexual acts. Consent cannot be procured by use of physical force, compelling threats, intimidating behavior or coercion. If you have sexual activity with someone you know to be—or should know to be—mentally or physically incapacitated (by alcohol or other drug use, unconsciousness or blackout), you are in violation of this policy. Use of alcohol or other drugs will never function to excuse behavior that violates this policy.

4. SEXUAL EXPLOITATION

Occurs when a student takes non-consensual or abusive sexual advantage of another for his/her own advantage or benefit, or to benefit or advantage anyone other than the one being exploited, and that behavior does not otherwise constitute one of other sexual misconduct offenses. Examples of sexual exploitation include, but are not limited to:

- prostituting another student;
- non-consensual video or audio-recording of sexual activity;
- going beyond the boundaries of consent (such as letting your friends hide in the closet to watch you having consensual sex);
- engaging in peeping tommery;
- knowingly transmitting an STI or HIV to another student.

Sanction Statement

- Any student found responsible for violating the policy on Non-consensual Sexual Contact (where no intercourse has occurred) will receive a sanction ranging from warning to expulsion, depending on the severity of the incident, and taking into account any previous campus conduct code violations.*
- Any student found responsible for violating the policy on Non-consensual Sexual Intercourse will face a recommended sanction of suspension or expulsion.*
- Any student found responsible for violating the policy on sexual exploitation or sexual harassment will receive a recommended sanction ranging from warning to expulsion, depending on the severity of the incident, and taking into account any previous campus conduct code violations.*

*The conduct hearing board reserves the right to broaden or lessen any range of recommended sanctions in the complaint of serious mitigating circumstances or egregiously offensive behavior. Neither the initial hearing officers nor any appeals body or officer will deviate from the range of recommended sanctions unless compelling justification exists to do so.

Student Code of Behavioral Conduct Special Provisions

a. Attempted Violations

In most circumstances, the college will treat attempts to commit any of the violations listed in the Student Code of Behavioral Conduct as if those attempts had been completed.

b. College as Complainant

As necessary, the college reserves the right to initiate a complaint, to serve as complainant and to initiate conduct proceedings without a formal complaint by the victim of misconduct.

c. False Reports

The college will not tolerate intentional false reporting of incidents. It is a violation of the Student Code of Behavioral Conduct to make an intentionally false report of any policy violation, and it may also violate state criminal statutes and civil defamation laws.

d. Misconduct Online

Students are cautioned that behavior conducted online can subject them to college conduct action, such as harassment delivered electronically. Students must also be aware that blogs, webpages and postings on social networking sites are in the public sphere and are not private. These postings can subject a student to allegations of conduct violations, if evidence of policy violations is posted online. The college does not actively monitor this information, but will take action if and when such information is brought to the attention of college officials.

e. Defenses

Students attempting to defend their actions with excuses, such as prescription drug interaction, self-defense, disabilities, etc. are admitting to a policy violation. For example, taking someone's property while under the influence of an anti-depressant is still taking someone else's property. While the defense does not excuse the action, the college will take the legitimacy of the defense into consideration in addressing the proper sanction. In the event of a fight the student who is not the aggressor in a fight will be sanctioned but the sanction may be lesser than the sanction of the person who started the fight.

f. Group Violations

When members of groups, individuals acting collusively or members of an organization act in concert in violation of any policy, they may be held accountable as a group and a hearing may proceed against the group as joint accused students. In any such action, however, determinations will be made with respect to the involvement of each accused individual.

g. Immunity for Victims

The college encourages the reporting of conduct code violations, especially sexual misconduct. Sometimes, victims are hesitant to report to college officials because they fear that they themselves may be charged with policy violations, such as underage drinking at the time of the incident. It is in the best interest of this community that as many victims as possible choose to report to college officials. To encourage reporting, the college pursues a policy of offering victims of sexual misconduct limited immunity from being charged for policy violations related to the sexual misconduct incident. While violations cannot be completely overlooked, the college will provide educational options rather than punishment, in such cases.

h. Good Samaritan

The welfare of students in our community is of paramount importance. At times, students on- and off-campus may need assistance. The college encourages students to offer help and assistance to others in need. Sometimes, students are hesitant to offer assistance to others, for fear that they may get themselves in trouble (for example, a student who has been drinking underage might hesitate to help take a sexual misconduct victim to the campus office of Safety and Security). The college pursues a policy of limited immunity for students who offer help to others in need. While policy violations cannot be overlooked, the college will provide educational options, rather than punishment, to those who offer their assistance to others in need.

i. Parental Notification

The college reserves the right to notify parents/guardians of dependent students regarding any conduct situation, particularly alcohol and other drug violations. The college may also notify parents/guardians of non-dependent students who are under age 21 of alcohol and/or drug policy violations. Where a student is not-dependent, the college will contact parents/guardians to inform them of situations in which there is a health and/or safety risk. The college also reserves the right to designate which college officials have a need to know about individual conduct complaints pursuant to the Family Educational Rights and Privacy Act.

j. Notification of Outcomes

The outcome of a campus hearing is part of the educational record of the accused student and is protected from release under a federal law, FERPA. However, the college observes the legal exceptions as follows:

- 1) Complainants in sexual misconduct and sexual harassment incidents have an absolute right to be informed of the outcome and sanctions of the hearing, in writing, without condition or limitation.
- 2) The college may release publicly the name, nature of the violation and the sanction for any student who is found in violation of a college policy that is a “crime of violence,” including: arson, burglary, robbery, criminal homicide, sex offenses, assault, destruction/damage/vandalism of property and kidnapping/abduction.

The college will release this information to the complainant in any of these offenses regardless of the outcome.

This code of conduct has been reviewed by Brett Sokolow from the National Center for Higher Education Risk Management (www.ncherm.org). Some of the language may be proprietary and copyrighted. It is licensed to the college for its use and publication, but all other uses and copying are prohibited without express permission from NCHERM.

Appendix F

Student Residency Classification

Residency (domicile*) requirements have been established for the purpose of assessing tuition and related fees. The requirements are set forth as follows:

**Domicile shall mean a person's true, fixed and permanent home, to which a person intends to return. A residence established for the purpose of attending an educational institution or qualifying for resident status for tuition purposes shall not of itself constitute domicile. The residency of a dependent student (as defined by the IRS) is determined by the parent's domicile.*

Students moving to Pennsylvania from outside the state must reside in Pennsylvania for one year before becoming eligible for in-state tuition. Students must substantiate changes in status by appropriate documentation. All documentation for proof of residency must be received before the start day of the term.

Exceptions may be made to these statuses for students moving to Allegheny County if they can demonstrate an intent to remain in Allegheny County for purposes other than attending school. These exceptions may include a move for full-time employment and will require a written statement from the student's employer (or the parent's employer if the student is a dependent).

A student may also need to show financial independence as part of establishing residency.

Appendix G

Access to Student Records

The Family Educational Rights and Privacy Act (FERPA) of 1974, otherwise known as the Buckley Amendment, allows students access to their own school records and sets guidelines for the viewing of a student's records by outside agencies. CCAC has adopted a student records policy which is a consistent general statement appearing on all registration forms.

Due to amendments to FERPA, CCAC will disclose student information to state agencies for longitudinal studies on student outcomes. See Student Handbook for additional information.

The college is subject to the provision of and complies with the Family Educational Rights and Privacy Act of 1974. A statement of the college policy can be found in the college catalog, the dean of Student Development office, the Registration and Advisement office and the Academic Deans office. The college not only provides a student access to his or her official records, but also provides an opportunity to challenge those records on the grounds that they are inaccurate, misleading or otherwise inappropriate.

Written permission of the student must be obtained before releasing personal information about that student. The policy lists the following rights of students regarding their official records:

- Right to inspect and review information contained in educational records.
- Right to challenge the contents of their educational records.
- Right to submit an explanatory statement for inclusion in the educational records if the outcome of the hearing is unsatisfactory.
- Right to prevent disclosure, with certain exceptions or personally identifiable information.
- Right to secure a copy of the college policy, which includes the location of all educational records.
- Right to file complaints with the Department of Health, Education and Welfare, concerning the alleged failures by institutions to comply with the act.
- The college policy also lists the materials to which the students do not have access. This information includes parents' confidential financial statements; medical, psychiatric or similar records which are confidential in nature and only available to professionals and paraprofessionals; confidential letters and letters of recommendation which were placed in the educational records prior to January 1, 1975; and records issued by another educational agency or institution prior to a student's first registration at the college.

Students should be aware that the college (at the discretion of the Registrar) releases directory information requested by interested persons or agencies, unless the student submits a written request to the college (addressed to the director of Registration & Advisement at the campus attended) that any or all of this information should not be released. Directory information includes a student's current and former name, postal and email addresses, registration period(s), number of credits, program of study and degrees awarded.

Appendix H

Security Information Act 73

In order to comply with the Commonwealth of Pennsylvania's College and University Security Information Act 73, Community College of Allegheny County annually publishes and distributes security policies, procedures and crime rate statistics. The college also maintains a daily log and public record of each valid complaint and reports of crimes. This information may be obtained by contacting the campus Security Office or the campus director of Safety and Security.

Appendix I

Computer & Electronic Resources College Expectations

Computers for student use are available in some college centers and at each campus in the library, learning center, computer center and in computer classrooms. At the campus computer center, you can access word processing, email, the Internet and a variety of software packages for completing coursework.

The college relies upon users to conduct themselves according to the basic principles of mutual respect. In this way, we attempt to promote the most effective and beneficial use of the college's computer equipment and facilities and protect the free exchange of information and ideas.

Your CCAC academic email account is your key to accessing CCAC resources. All current students, faculty and staff are provided with an account. Your CCAC academic email address consists of your assigned NetID username followed by @acd.ccac.edu. Your CCAC academic email account is the formal means of communication from the college to students.

When using computer resources, students are expected to:

1. Check their CCAC academic email account regularly.
2. Use the computer resources primarily for scholarly purposes.
3. Use discretion when displaying and printing material that may be offensive to others.
4. Not use college computer resources to transmit or display obscene, illegal, violent, discriminatory or other information that may result in harassment or defamation.
5. Discourage inappropriate usage by others.
6. Avoid disruptive behavior when using computer resources.
7. Abide by all signs posted in the computer labs.
8. Respect the needs of other users to access limited computer resources.
9. Not use college computer resources to gain unauthorized access to any other computer system.
10. Respect the integrity of the system and related physical resources, and observe all relevant laws, regulations and contractual obligations.
11. Not download, or share (through browsers, peer-to-peer networks or other means), post or install to college computers, or transport across college networks material which is illegal, proprietary, in violation of license agreements, copyrights or college contracts, or that may be damaging to the college network or infrastructure.

12. Not share passwords. Students are responsible for any activity executed under his/her account.
13. Not use CCAC resources (email, computer hardware, software or supplies) or your account for personal financial gain and/or commercial purposes (whether for-profit or not-for-profit), or for supporting political campaigns, candidates, legislation or ballot issues.
14. Use the systems and individual accounts in a manner consistent with the instructional, research and administrative objectives of the college. Legally, the college electronic network is not an open forum (such as a free-speech park); thus, its use is limited to activities consistent with college objectives.
15. Not use the CCAC name or logo or likeness on your webpage without the consent of the Marketing and Communications department.
16. Not print large quantities of flyers, banners or other printed materials intended for multiple distribution. For print jobs of this nature, only one copy may be printed in the labs.
17. Take responsibility and report any problems with computer hardware or software.
18. Not smoke, drink or eat in any computing facility.
19. Not misrepresent your identity or affiliation in email communication.
20. Use email for purposes which do not violate federal and/or state laws.
21. Not send harassing, intimidating, abusive or offensive material to or about others.
22. Not intercept, disrupt or alter electronic communications packets.
23. Not cause congestion on the network by such things as "chain letters," "broadcasting" inappropriate messages to lists or individuals or excessive use of the email system.
24. Not attach non-CCAC computer equipment to the CCAC network.

Any unauthorized attempt to modify computer hardware and software components is prohibited. This includes attempts to use and/or copy software in violation of federal copyright laws.

All instances of misuse of computer equipment and facilities constitute grounds for disciplinary action under the CCAC Student Code of Behavioral Conduct. Instances of abuse may also result in civil and/or criminal proceedings.

Appendix J Statement of Accessibility

Individuals with disabilities who are requesting accommodations should contact the Supportive Services for Students with Disabilities office at the campus they will be attending. This publication is available in alternate formats.

Call the Supportive Services for Students with Disabilities office at 412.469.6215 (voice) or 412.469.6005 (TTY).

Appendix K Drug & Alcohol Policy for Students

In compliance with federal regulations set forth by the Drug-free School and Communities Act Amendments of 1989 and the CCAC Student Behavioral Code of Conduct, CCAC specifically prohibits the possession, sale, use, manufacturing or being under the influence of alcohol or illegal substances on campus, at college centers or college-sponsored activities off campus. College sanctions for violation(s) of this policy will result in appropriate disciplinary suspension or disciplinary dismissal. Students are also subject to applicable legal sanctions, which may include fines and/or imprisonment, for use of illicit drugs or illegal use of alcohol.

Additionally, local, state and federal laws prohibit the unlawful possession, use, manufacturing or distribution of illicit drugs and alcohol. Conviction for violating these laws can lead to imprisonment, fine, probation and/or assigned community service. Students convicted of a drug and/or alcohol-related offense will be ineligible to receive federally funded or subsidized grants, loans, scholarships or employment. The college supports all local, state and federal laws related to drug and alcohol abuse, including but not limited to, the Drug-free Workplace Act and the Drug-free Schools and Campuses Act.

DANGERS ASSOCIATED WITH THE USE OF ILLICIT DRUGS & ALCOHOL

There are definite health risks associated with the use of alcohol and illegal substances. Dependence on drugs and alcohol is a serious public health problem. Dependency is prevalent in all regions of the country and transcends all ethnic and socioeconomic groups. Students who experiment with drugs, alcohol and illegal substances or use them recreationally may develop a pattern of use that leads to

abuse. Use of alcohol and illegal substances is a major factor in accidents and injuries among persons between the ages of 18 and 24; it is responsible for more deaths than any other causes combined. College officials will assist students with appropriate referrals and information concerning drug and alcohol education, counseling, treatment or rehabilitation or reentry programs that may be available in the community. Contact the counseling center on any campus.

Appendix L

Military Call to Active Duty (Military Deployment)

Military Call to Active Duty (Military Deployment)

A military student or the student's spouse called to active duty during an academic semester has the following options:

The student must file written verification of the activation order as soon as it becomes available with the CCAC Veterans Services Center and inform the faculty member.

1. The student can take the grade earned to date in class/es provided that more than 75% of class meetings have passed and both student and faculty agree to this option. A student selecting this option will not be refunded any tuition or fees and will have the grade processed in the normal manner at the end of the semester with appropriate credit and grade earned.
2. A student can elect to have an incomplete I grade recorded at the end of the semester provided more than 50% of the class meetings have passed and both student and faculty agree to this option. The faculty member and the student must come to agreement on the work to be completed and the faculty member submits an "incomplete grade" form to the appropriate Associate Academic Dean. Faculty members are encouraged to detail the work still to be completed and outline the criteria for the final grading. A student must complete the work detailed on the I grade form in accordance with the college I grade policy or within 90 days from completion of active duty, whichever affords the student more time. If no Change of Grade Authorization is received from the instructor within the agreed upon time, the I grade will automatically be converted to the grade earned or to an F grade. In accordance with the current American Federation of Teachers (AFT) contract, in the event the faculty member is not available at the time the student completes the work, the department head will assume responsibility for reviewing the work and assigning the final grade.
3. A student can elect to withdraw from one or more courses with a grade of M at any time during the semester by informing the CCAC Veterans Services Center and/or the Registration Office. A student electing this option will have his/her tuition refunded or credited, in accordance with VA policy.

Interpreting Your Grade Report

In addition to grades A through F, other symbols that may appear on your grade record but are not calculated into your GPA are:

I—Incomplete: An incomplete I grade may be given at the discretion of the instructor. An I grade can only be given for the final grade, not at midterm. The instructor and the student must agree to postpone the completion of certain required coursework and to a timetable for completion of the work not to exceed eight weeks into the following regular semester. An Incomplete I Grade Agreement Form must be signed by the instructor and submitted to the Office of the Associate Dean of Academic Affairs at the time that the I grade is given.

When the required work has been completed, the instructor will submit a Change of Grade Authorization. If the work is not completed by the agreed-upon deadline, the instructor can issue the grade earned at the time when the I grade was agreed upon. If no Change of Grade Authorization is received from the instructor within the eight weeks into the following semester, the I grade will automatically be converted to the grade earned or to an F grade.

M—Military Call to Active Duty: An M grade is posted to the student transcript when a student has elected the withdrawal option Military Call to Active Duty.

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Community College of Allegheny County (CCAC)

CCAC annually educates more than 30,000 credit students through 155 degree, certificate, diploma and transfer programs and offers thousands of students access to noncredit and workforce development courses. The learning-centered institution's mission is to provide affordable access to quality education and offer a dynamic, diverse and supportive learning environment that prepares the region's residents for academic, professional and personal success in our changing global society. CCAC's quality programs enable students to transfer credits to nearly 500 colleges and universities and support regional workforce needs with accessible instruction available day, evening, weekend and online in Allegheny County and beyond. Visit ccac.edu to learn more.

