



COMMUNITY
COLLEGE OF
ALLEGHENY
COUNTY

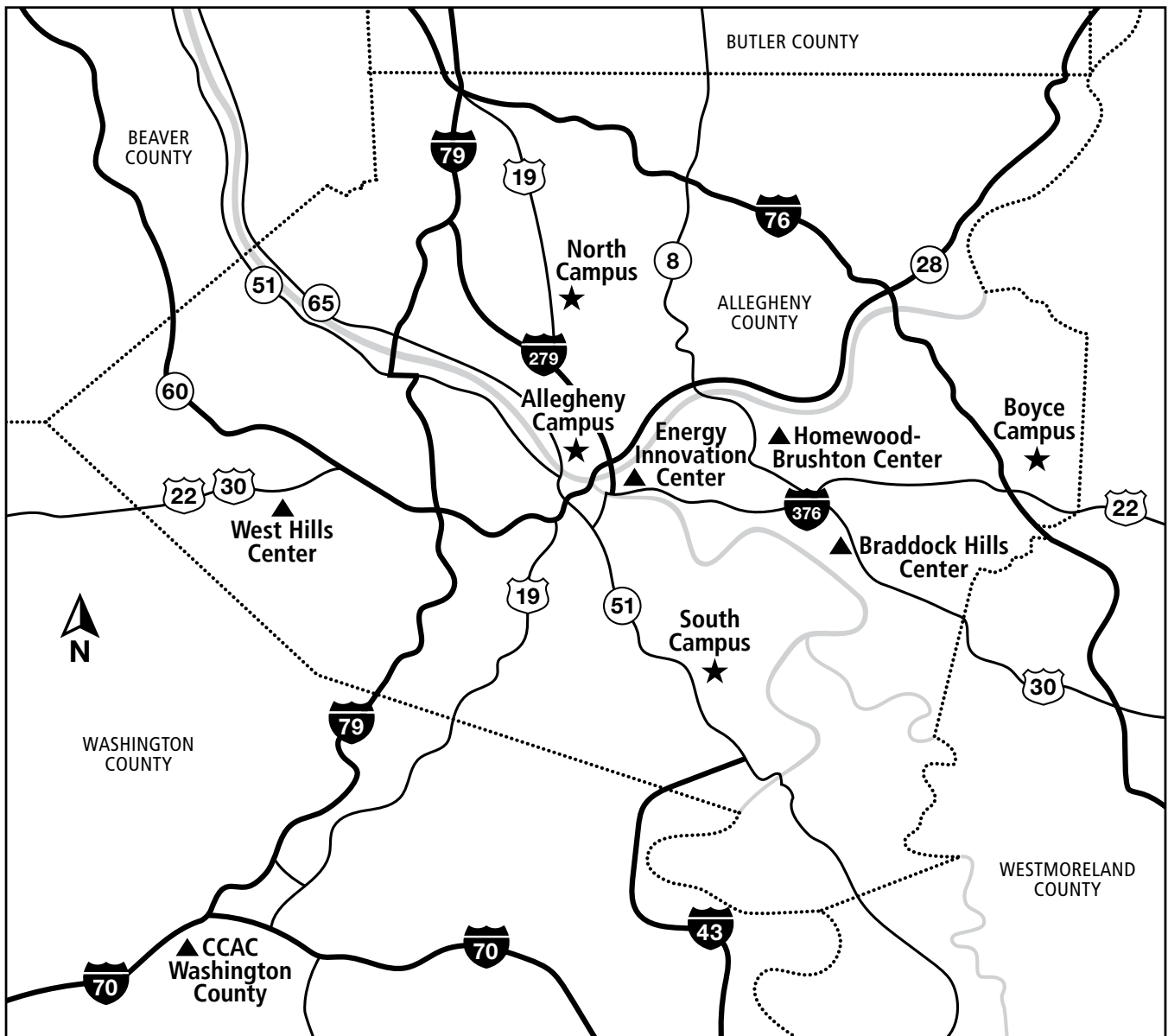
CATALOG

2016–2017



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CAMPUSES & CENTERS

ALLEGHENY CAMPUS

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

BOYCE CAMPUS

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

NORTH CAMPUS

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

SOUTH CAMPUS

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

CCAC Homewood-Brushton Center

701 North Homewood Avenue
Pittsburgh, PA 15208-1806
412.371.1600

CCAC Braddock Hills Center

250 Yost Boulevard
Pittsburgh, PA 15221-4818
412.271.0201

CCAC West Hills Center

1000 McKee Road
Oakdale, PA 15071-1099
412.788.7500

CCAC Washington County Center

1500 West Chestnut Street
Washington, PA 15301-5857
724.223.1012

Energy Innovation Center

1435 Bedford Avenue
Pittsburgh, PA 15219
412.788.7534

COMMUNITY COLLEGE OF ALLEGHENY COUNTY

CATALOG

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COMMUNITY COLLEGE OF ALLEGHENY COUNTY

This catalog is a one-year publication containing revisions or additions that have occurred since the 2015–2016 edition. It is in effect for students who begin their studies or change their programs during or after fall 2016. 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.



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.










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*.

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¹ Certificate ² Degree ³ Diploma

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LETTER FROM THE PRESIDENT

Thank you for considering 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 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, you can do so knowing 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 nearly 90 student clubs and organizations, including five honor societies, 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 50 years CCAC has flourished, becoming the educational powerhouse it is today. We are honored to have one of the largest veteran and military student populations in the state and take pride that we graduate one of the highest number of health career graduates among two-year colleges, ranking number three 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 adults in Allegheny County.

I 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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Clyde W. Pickett
 Special Assistant to the President, Diversity & Inclusion

Governance

The Community College of Allegheny County (the College) is a locally sponsored public college duly organized, approved and established under the Community College Act of 1963. The Board of Trustees constitutes the governing body of the College, and is empowered to govern, operate and maintain the College under and in accordance with the Act and the policies, standards, rules and regulations which may be adopted, from time to time, by the Pennsylvania Department of Education. The specific powers and duties of the Board are set forth in the Act, the Board Policy Manual, and the Board Bylaws. Members of the Board of Trustees are recommended by the Allegheny County Chief Executive and appointed by the Allegheny County Council, the College's local sponsor.

In accordance with the authority granted to it under the Act, the Board has delegated authority to the College president to manage the operations of the College. This authority includes the development and implementation of administrative regulations and procedures as may be necessary to implement and carry out the objectives of Board Policy. The College also utilizes a shared governance process, through which members of the administration and faculty review, develop and recommend new or revised academic policies, procedures and programs and other matters pertaining to the teaching-learning mission of the College.

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.

SUMMER 2016–FALL 2017 ACADEMIC SCHEDULE¹

Summer Term 2016

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 ²	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

Spring Term 2017³

16-week spring term classes begin	January 17
14-week spring term classes begin	January 30
Spring break	April 10–16
16-week classes end	May 8
14-week classes end	May 7
14-week classes Reading Day	May 8
Finals week	May 9–15

Summer Term 2017

Memorial Day observed, college closed	May 27–29
Independence Day observed, college closed	July 4
First summer six-week session	May 22–July 1
First summer eight-week session	June 5–July 29
First summer ten-week session	May 22–July 29
Second summer six-week session ²	July 3–August 12

Fall Term 2017³

16-week fall term classes begin	August 21
Labor Day observed, college closed	September 4
14-week fall term classes begin	September 5
Thanksgiving Break	November 20–26
Classes end	December 11
Finals week	December 12–18

¹ Dates subject to change

² Second summer introduces the new academic year.

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

Academic calendars are found on the website at: http://www.ccac.edu/Academic_Calendars.aspx

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	\$107.75/credit	\$1,616.25	None	None
Pennsylvania Residents Outside Allegheny County	\$215.50/credit	\$3,232.50	\$6.50/credit	\$78.00/semester
Out-of-state & Foreign Residents	\$323.25/credit	\$4,848.75	\$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 \$1,616.25 (flat rate) + \$323.25 [$\$107.75$ (per credit rate) \times 3 (credits over 18)] = \$1,939.50

REGISTRATION FEES

Fee	Amount
College Fee: Full-time (12 or more credits) ²	\$72.00/semester
College Fee: Part-time(1-11 credits) ²	\$6.00/credit (\$72.00 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	\$5.40/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	\$22.25/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	\$107.75/course
Returned Check Handling Charge ⁴	\$25.00/check
Official Transcript of Academic Record ⁴	\$5.00/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 financially responsible for payment of all tuition and fees associated with registration unless you officially drop all courses before the term begins. 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.

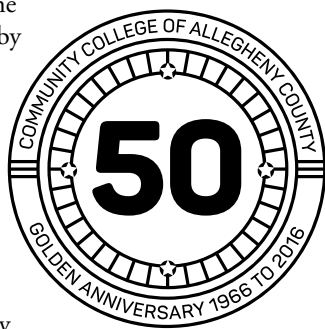
Tuition & fees are subject to change.

7 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.

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.

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.
4. Synthesize and integrate information in order to support conclusions.

5. When supported, articulate findings and prioritize solutions appropriately.

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.

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. Harassment that is based on any of these characteristics, whether in verbal, physical, or visual form, constitutes a form of prohibited discrimination. This includes harassing conduct which affects tangible job benefits, unreasonably interferes with an individual's academic

or work performance, or which creates what a reasonable person would perceive to be an intimidating, hostile or offensive work or educational environment.

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, the Title IX Coordinator/Civil Rights Compliance Officer or such other officials as may be designated in other Board policies or administratively issued regulations and procedures. The College prohibits and will not engage in retaliation against any person who in good faith reports a violation of this Policy, provides information in an investigation of a potential violation, or otherwise engages in protected activity under the law.

TITLE IX NOTIFICATION

It is the further policy of the College to comply with Title IX of the Education Amendments of 1972, which prohibits discrimination based on gender or sex in the College's educational programs and activities, as well as the requirements of the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act (Clery Act), as amended by the Campus Sexual Violence Elimination Act (SaVE Act). Conduct prohibited under Title IX, the Clery Act and the SaVE Act includes sexual harassment, sexual misconduct and acts of sexual violence, including sexual assault, domestic violence, dating violence, and stalking. In furtherance of this Policy, the College will designate a Title IX Coordinator whose responsibilities will include overseeing the College's response to Title IX reports and complaints and identifying and addressing patterns or systemic issues revealed by such reports and complaints. With the exception of staff designated by the College to provide confidential professional counseling services to victims of such conduct, College employees are required to inform the Title IX Coordinator of incidents or suspected incidents of sex or gender discrimination, sexual harassment, or sexual violence against a student, employee, vendor or guest of which they become aware.

Questions or complaints regarding Title IX issues may be directed to the College's Title IX Coordinator or the United States Department of Education's Office of Civil Rights as follows:

CCAC Civil Rights Compliance Officer/Title IX Coordinator
808 Ridge Avenue
Byers Hall - Room 317
Pittsburgh, PA 15212
Telephone: 412.237.4535
Email: smisra@ccac.edu

GETTING STARTED

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. CCAC provides complete academic advising, counseling and career planning and job placement services to help answer these and other questions:

- What do I want from CCAC?
- 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.

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 the 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/

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/

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/

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).
 - 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 testing tips and sample questions by going to CCAC's Placement Testing page at: ccac.edu/placement-tests/
 - 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.

Students with SAT or ACT test scores above the 50th percentile will be exempt from the reading placement testing, but still must take the English writing test (there is no SAT/ACT exemption for English.) Students with SAT or ACT scores above the 50th percentile will be exempt from developmental math courses, but must complete the placement test if intending to take a course above the Intermediate Algebra *MAT-108* level. 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

ACADEMIC PLANNING

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.

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/

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 alphacodes 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

Cross-registration provides opportunities to enrich educational programs by permitting full-time undergraduate students to cross-register at other local colleges for courses not offered at their own institution. Participating institutions of the Pittsburgh Council on Higher Education (PCHÉ) include Carlow University, Carnegie Mellon University, Chatham University, CCAC, Duquesne University, La Roche College, Pittsburgh Theological Seminary, Point Park University, Robert Morris University and the University of Pittsburgh. If you cross-register, you will pay CCAC tuition for the additional credits and you must pay special course or laboratory fees to the host institution. Full credit and grades are transferred to the home institution. Cross-registration guidelines are as follows:

- enrollment is limited to only one course per term/semester;
- you may not cross-register after the end of the host institution's add/drop period;
- approval of the designated individual from the home institution is needed;
- your advisor must check course eligibility;
- you may not cross-register for classes at another institution in which you are already enrolled as a student;

- academic rules and regulations of the host institution will prevail;
- while you do not acquire status at the host institution, you have library and bookstore privileges;
- permission is required from the home and host institutions to add/drop a course after the home and host institutions' deadlines;
- cross-registration does not apply to summer or Fastrack courses; and
- you must be enrolled for 12 or more CCAC credits in the semester you are cross-registering.

VIRTUAL ADVISING

CCAC students may meet with an academic advisor using our virtual advising program. For additional information on the virtual advising process and to determine if you meet the technical requirements for Virtual Advising, go to ccac.edu/Virtual-Advising/

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.

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 for college credit at CCAC.

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 CCAC credits are calculated into the CCAC GPA.

Credit by Examination

Students in good standing who feel 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.

If a student wishes to challenge a course for which there is no standardized test, the student will contact the appropriate academic department at CCAC to inquire as to whether or not a test is offered for credit. The course must be listed in the CCAC college catalog and available at the campus. A student may not challenge a course that he/ she has already completed,

or for which he/ she is currently registered. A student may only challenge and test once for any given course.

- If a test is available, obtain permission to test from the Academic Dean at your campus. The Dean may recommend another form of evaluation for prior learning assessment (CLEP or Portfolio). Once permission is granted, the student must schedule and take the test within 60 business days.
- If the student successfully passes the exam, the appropriate course and credits will be posted to the transcript. If a student is new to CCAC, the credit will not be posted to the transcript until at least one course for college credit is completed at the college. The grade earned will not be calculated into the Grade Point Average (GPA).
- A fee equal to the tuition for one credit is charged.

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.

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

If students 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.

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

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, 2014-2015 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 who accept loans as part of their financial aid package must participate in student loan entrance counseling, and sign a Master Promissory note. This information is available at <https://studentloans.gov/myDirectLoan/whatYouNeed.action?page=counseling>

Financial aid staff at all campuses are available to assist students in completing financial aid applications. Students are encouraged to apply for financial aid by the priority deadlines stated below, so that funds are available in time to pay 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/

MANDATORY STUDENT ORIENTATION

Students are required to complete the online orientation prior to registration for classes at CCAC.

After students have registered for classes, students should attend the in person orientation, which is available at each campus. CCAC strongly recommends that students do both the online and the in person orientation to receive important information regarding services, resources and policies at CCAC. Students will also receive their Net ID, photo ID, and a campus tour. It is very important that students are aware of their privileges, resources and responsibilities before classes begin.

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.

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 computations involving fractions, decimals, percents and ratios without the use of a calculator 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 simplifying polynomial and rational expressions, factoring and solving equations and word problems. Students need these skills to be successful in all college mathematics courses.

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/

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Roadmaps with checklists are available at every campus Admissions & Advising offices.

If you want to be successful, use the **ROADMAP** to plan your future and track your progress.

	→ 15 credits	→ 30 credits	→ 45 credits
	<p>REQUEST HELP ALONG THE WAY</p> <ul style="list-style-type: none"> Visit Job Placement & Career Services Find work-study or similar employment Meet with an Advisor Monitor your progress with your graduation checklist Visit Math Café & Learning Commons Get help with math & writing (No appointment necessary) Get Involved Join a club/sport or volunteer 	<p>MAINTAIN YOUR FOCUS, OWN YOUR SUCCESS</p> <ul style="list-style-type: none"> Meet with an Advisor Verify your major & update your graduation checklist Stay Involved Gain leadership skills Develop Your Student Engagement Transcript Document your involvement 	<p>ALMOST THERE, EVALUATE YOUR GOALS</p> <ul style="list-style-type: none"> Meet with an Advisor Get a degree audit Apply for graduation <p>PLEASE NOTE THAT ALL ITEMS HIGHLIGHTED WITH  A YELLOW RECTANGLE WILL LINK YOU TO APPROPRIATE WEB PAGE .</p>
Career Route	<ul style="list-style-type: none"> Meet with a Counselor (After you take the Placement Tests) Discuss your career options 	<ul style="list-style-type: none"> Visit Job Placement & Career Services Begin your career exploration Register at www.collegecentral.com/ccac 	<ul style="list-style-type: none"> Visit Job Placement & Career Services Land an internship or practical experience Finalize your materials & apply for jobs
Transfer Route	<ul style="list-style-type: none"> Meet with a Counselor Discuss transfer options 	<ul style="list-style-type: none"> Meet with a Counselor Identify your transfer institution Review your transfer requirements 	<ul style="list-style-type: none"> Meet with a Counselor Apply to transfer institution
PLAN YOUR SUCCESS → GRADUATE			
<p>PLAN:</p> <ul style="list-style-type: none"> REARRANGE WORK SCHEDULE TO ACCOMMODATE YOUR CLASSES MAKE ARRANGEMENTS FOR CHILD CARE & TRANSPORTATION PREPARE FOR YOUR TUITION PAYMENT GET YOUR STUDENT ID 	<p>DO:</p> <ul style="list-style-type: none"> COMPLETE DEVELOPMENTAL COURSES AS SOON AS POSSIBLE INQUIRE ABOUT ALP TO COMPLETE ENG-100 & ENG-101 SIMULTANEOUSLY FORM A STUDY GROUP TALK TO YOUR PROFESSORS 	<p>USE:</p> <ul style="list-style-type: none"> DROP-IN ASSISTANCE CENTERS <ul style="list-style-type: none"> Math Café Learning Commons STUDENTLINGO CCAC CENTRAL e-SERVICES TUTORING SERVICES 	<p>REVIEW:</p> <ul style="list-style-type: none"> GRADUATION CHECKSHEET—EVERY SEMESTER FINANCIAL AID—EVERY YEAR <ul style="list-style-type: none"> Know your student loan responsibilities Upon graduation—Student Loan Exit Interview

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.

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.

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.

The college provides 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.

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 suggesting courses that are transferable to four-year colleges and universities and/or assist students with making contact with the intended school for more detailed information.

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 \$5.00 fee for each official transcript request.

GRADUATION

Students are expected to apply for graduation by the deadline during the student's final term. Students will complete an application for graduation, which will be reviewed to determine whether students have met all the requirements of their program, have an Institutional GPA of 2.00 or better and have earned the minimum number of college-level credits required for their degree at CCAC.

The degree audits of students in good standing who have earned 60 or more credits will be reviewed by an academic advisor. Students who meet the requirements for graduation in their declared program will have their degrees conferred at the next available degree conferral date. Students who wish to "opt-out" may do so in writing to a campus registration office.

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 minimum requirements for the first degree and must meet all the requirements of the second degree.

Completing an Associate Degree after Leaving the College - Reverse Transfer

A student who completes credits at another institution after leaving CCAC may be able to transfer credits back to CCAC and subsequently become eligible for graduation. A maximum of 30 college-level credits (39 for those in 089 General Studies or 006 Liberal Arts) earned at another institution within ten years of the student's last date of attendance at CCAC can be applied toward graduation. If CCAC changes or discontinues a program, students must complete the reverse transfer process within two years of the date of that change, or must meet the requirements of a current active program.

Limitations on Sources of Credits for Graduation

For any degree, the college requires that a minimum of 30 credits (21 for those in 089 General Studies or 006 Liberal Arts) 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, portfolio, CLEP, USAFI, AP and ACE approved military credits. A maximum of six credits of independent study at CCAC may be applied toward a degree and three credits toward a certificate or diploma.

LEARNING ENVIRONMENT & ACADEMIC SUPPORT

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 athletics as members of the National Junior College Athletic Association (NJCAA) participating in the following men's and women's sports: baseball, softball, men's and women's basketball, volleyball, men's and women's golf, men's and women's cross country, and men's and women's bowling. CCAC also participates in club hockey as members of the American Collegiate Hockey Association (ACHA).

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 five full-time directors, at least one at each campus, who manage a team of 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.

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 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 www.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 www.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.

Online Resources

Online resources including links to online tutoring, library services, and on-demand video workshops (Student Lingo) is available through www.ccac.edu/Online_Learning__Support.aspx or the resource link in your online course.

Online Learning Testing

Please note: Taking course exams at a 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 www.ccac.edu/Proctoring_Information.aspx

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

The four campus libraries offer a combined collection of more than 250,000 books, 800 periodical titles, 20,000 audio/visual titles (DVDs, compact discs, audio books, etc.) and over 55,000 e-books. The library also has over 70 online research databases accessible through the library website at www.ccac.edu/library. These research databases allow you to access thousands of full-text magazine, journal, newspaper and reference articles and streaming videos in subject areas such as business, education, medicine, arts and sciences and the social sciences. The library website provides many useful links to students, including Course Guides for projects assigned by CCAC instructors, web resources and i-CONNECT, a self-paced guide to better researching skills. In addition to traditional services for all students, such as interlibrary loans, customized services are provided to support distance learning students. Each library provides quiet study areas and professional staff to assist you with your research projects. We encourage you to visit the library and website.

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.

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

MATH CAFÉ

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.



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.

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.

STUDENT SUCCESS COACHES

Student success coaches are available on each campus to address specific needs of various student populations such as students enrolled in SDS 102. Success coaches are a resource for students and provide mentorship, monitor progress of students and provide support to students as they complete their studies at CCAC.

ACCOMMODATIONS FOR INDIVIDUALS WITH DISABILITIES

The College recognizes its responsibility to provide academic and nonacademic services and programs equally to individuals with and without disabilities. To this end, the College will provide reasonable accommodations for qualified students and employees with identified disabilities consistent with the requirements of the Americans with Disabilities Act, Sections 503 and 504 of the Rehabilitation Act, and other federal, state and local laws and regulations.

The College will maintain an Office of Supportive Services at each campus location to receive, review, and evaluate requests from students who require an accommodation with respect to their educational program. The College's Civil Rights Compliance Officer/Title IX Coordinator will have overall responsibility for coordinating disability services across all College campus locations.

The College's Office of Human Resources is designated to receive, review and evaluate employee requests for accommodations in the workplace due to an identified disability.

MILITARY & VETERANS SERVICES CENTER

Federal and State approving agencies have authorized CCAC to administer veteran education benefits for CCAC students. The Military & 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 Military & 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 Military & 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.

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/

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 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/.

- A variety of 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, and 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 or go to ccac.edu/life/

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

Attendance Procedure for Religious Observance for Students

The Community College of Allegheny County (CCAC) is committed to creating an inclusive campus community that values and respects all of its members and achieves educational excellence through diversity and nondiscrimination. As part of this commitment, the College makes good faith efforts to accommodate students' religious practices or beliefs, unless such accommodation would create undue burden on other students or the College.

The College will make reasonable efforts to accommodate students who must be absent from classes or miss scheduled exams in order to observe a religious holiday or participate in some other form of religious observance. Students shall be provided, whenever possible, reasonable opportunity to make up academic assignments missed due to such absences, unless doing so would create or impose an undue burden on other students or the College. It shall be the students' responsibility to provide written notice via the Request for Accommodation for Religious Observances Form (accessible at https://www.ccac.edu/Diversity_Initiatives.aspx) to every instructor for each course in which an accommodation is being requested at least one week in advance of the absence. Students and faculty may also consult with the Civil Rights Compliance Officer/Title IX Coordinator (smisra@ccac.edu) prior to requesting or granting an accommodation.

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 six 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](https://www.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	3 cr.	C/2	6 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 STANDING RULES

After final grades are posted at the end of each term (fall, spring, summer—all sessions combined), the student grade record will be evaluated to determine the student's academic standing. If the student has earned a cumulative Grade Point Average (GPA) at or above 2.0, the student will be considered in "Good Standing".

Midterm Alert

If the student is receiving a grade below a C at midterm, the student may be notified and should meet with the course instructor immediately to discuss progress in the course. Academic Advisors are also available to discuss the student's educational plan and CCAC's academic support services. Not receiving an alert at midterm does not guarantee that the student will pass the course.

Academic Warning

If the student's term GPA falls below 2.0, the student will be placed on Academic Warning. When placed on Academic Warning, the student will be required to meet with an Academic Advisor to discuss the student's educational plan, discuss strategies to utilize CCAC's academic support services and discuss the number and type of courses the student should take in future terms in order to help ensure academic success.

To return to good standing, the student must achieve a minimum term and overall cumulative GPA of 2.0.

Academic Probation

If while on Academic Warning, the student earns a term GPA above 2.0 but the cumulative GPA is still below 2.0, the student will stay on Academic Warning. If while on Academic Warning, both the term and cumulative GPA fall below 2.0, the student will be placed on Academic Probation. While on Academic Probation, the student is required to:

- A. Meet with an Academic Advisor to review the student's academic plan and to register for courses in subsequent terms
- B. Discuss strategies to utilize CCAC's academic support services
- C. Enroll in no more than 9-10 credits in subsequent terms
- D. Enroll in online courses only at discretion of the Advisor

To return to good standing, the student must achieve a minimum term and overall cumulative GPA of 2.0.

Academic Suspension

If while on Academic Probation, the student's academic record falls below the minimum of the range outlined below, the student will be placed on Academic Suspension. Evaluation for Suspension will occur once each year, in May after final grades are posted. While on Academic Suspension, the student will be restricted from attending CCAC for two terms, unless the student successfully appeals.

Suspension Determination Chart

If student has attempted: <i>AND</i> Cumulative GPA is:	
24 credits	<1.50
25–48 credits	<1.75
49–59 credits	<1.90
60+ credits	<2.00

College Process for Academic Suspension

- A. If the student is placed on Academic Suspension and has not registered for a subsequent term, no other action will be taken.
- B. If the student has already registered for the summer term, the registration will be cancelled with charges adjusted accordingly.
- C. If the student has NOT filed an appeal AND has already registered for fall term(s), the registration will be cancelled with charges adjusted accordingly.
- D. If the student HAS filed an appeal for Fall classes AND has already registered for Fall classes, the registration will be held until the appeal is determined.
- E. If the student does not appeal the suspension or appeal is not granted, the student must sit out for two consecutive terms (summer and fall) before being re-admitted to the college for the Spring semester. All summer sessions combined equal one term.

- F. Upon returning after the two term suspension, the student must meet with a Counselor to review the student's educational goals and academic plan, develop strategies to utilize academic support services, and register for classes. Enrollment will be limited to the credit load set by the Counselor.
- G. The student can only register with a Counselor and must maintain a term GPA of 2.0 minimum. If, in the semester in which the student returns, the student's term GPA is less than 2.0, the student will be placed on Academic Suspension and must sit out for two terms with no appeal.

College Process for the Appeal of Academic Suspension

If the student wishes to attend within the two-term restricted period, the student must appeal by submitting the Suspension Appeal form to the Associate Academic Dean on the student's campus by the deadline (instructions included in the Suspension letter).

- A. A permanent Academic Appeals Committee will be established at the beginning of every academic year on each campus under the coordination of the Associate Dean of Academic Affairs. The Committee will be comprised of one advisement administrator, two full-time teaching faculty members, one counselor and one associate dean of Academic Affairs. The term of appointment for committee members will be for one academic year. Alternates will also be selected.
- B. All students identified as 'suspended' will receive a suspension letter/e-mail/notice on portal, etc. signed by the academic leader which will outline the conditions of the suspension, appeal process, and the consequences of not filing an appeal before the due date.
- C. The student will be notified of the decision of the Academic Appeals Committee in writing.
- D. If the appeal is granted:
 - a. The student must meet with a Counselor to develop an academic plan, discuss strategies to utilize CCAC's academic support services and to select/adjust courses for fall registration, and for subsequent terms, based on the committee's recommendation. Enrollment in online courses is at the discretion of the Counselor.
 - b. For every term after the appeal, the student must register with a Counselor and must maintain a term GPA of 2.0 minimum for all subsequent semesters. Enrollment will be limited to the credit load set by the Counselor. If the student's term GPA is less than 2.0, the student will again be placed on suspension and must sit out for two terms with no appeal. If already registered for the next term, the student's registration will be cancelled with charges adjusted accordingly.
- E. If the appeal is denied:
 - a. The student must meet with a Counselor in order to be readmitted after sitting out the two terms. If the student has registered for fall courses, the registration will be

cancelled with charges adjusted accordingly. During the period of suspension, the student will be required to follow any prescribed actions as stated by the Academic Appeals Committee.

- b. For every term after suspension, the student must register with a Counselor and must maintain a term GPA of 2.0 minimum for all subsequent semesters. Enrollment will be limited to the credit load set by the Counselor. If the student's term GPA is less than 2.0, the student will again be placed on Academic Suspension and must sit out for two terms with no appeal. If already registered for the next term, the student's registration will be cancelled with charges adjusted accordingly.

Financial Aid has a separate standard for academic progress. See *Satisfactory Academic Progress Policy*.

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 my.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.*)

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 articulation agreements with 34 local and national colleges and universities for 163 programs. 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.

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

WHAT IS TAOC?

TAOC is the PA Transfer and Articulation Oversight Committee. Their task is to fashion programs for universal transfer among participating colleges. Graduates transfer with junior status. While CCAC has other programs that transfer similarly, the TAOC programs are sanctioned by state legislation.



What CCAC programs are currently TAOC-eligible?

CCAC's eligible degree programs are designated on our website and in College literature with the TAOC backpack logo. These include: Biological Sciences, Business Administration, Criminal Justice, Fine Arts, Pre-K Education, Psychology, and Social Work and Theatre.

Where can you go to find additional PA transfer information?

Go to pacollegestransfer.com.

The Pennsylvania Transfer and Articulation Center (PA TRAC) was created as a one-stop shop for transfer students, administrators and advisors/faculty. The site contains the following information:

Information about the Transfer Credit Framework

- Transfer course equivalencies
- College profiles for the participating institutions
- Searchable databases

What is the Transfer Credit Framework?

Some students may be undecided about a college or major. The Transfer Framework provides students with six categories and general course guidance for selecting the courses typically found in the college freshman year. Searchable databases then provide students with the courses at any institution that have been approved as "Framework Courses" and therefore transfer throughout the state. While CCAC has many other courses that will transfer, the transferability of the Framework Courses is the product of state legislation.

How did TAOC get started?

In July 2006, the Pennsylvania Department of Education (PDE) began implementation of Article XX-C of the Public Institution Code of 1949. Intended to create a seamless statewide transfer and articulation system, this legislation requires Pennsylvania's 14 community colleges and the 14 universities in the Pennsylvania State System of Higher Education (PASSHE) to adopt mandatory equivalency standards for the purpose of creating at least 30 hours of foundation courses that can be easily transferred to any of the participating institutions and to establish an electronic portal for providing public access to transfer information.

Voluntary participation by private colleges and universities is allowed under the law. State-related institutions also may voluntarily participate in this statewide transfer system.

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	ENG-202 Fiction	PHY-141 Physics 1
ART-106 Art Appreciation	HIS-101 History of Western Civilization 1	PHY-142 Physics 2
ART-109 Drawing 1	HIS-102 History of Western Civilization 2	POL-101 Introduction to Political Science
BIO-110 Introduction to Biological Science	HIS-104 United States History 1	POL-103 American Government
BIO-151 General Biology 1	HIS-105 United States History 2	PSY-101 Introduction to Psychology
BIO-152 General Biology 2	MAT-102 Mathematics Concepts	PSY-108 Human Growth and Development
BIO-161 Anatomy & Physiology 1	MAT-108 Intermediate Algebra	PSY-201 Educational Psychology
BIO-162 Anatomy & Physiology 2	MAT-142 Pre-calculus	PSY-210 Child Psychology
CHM-109 Introduction to Chemistry	MAT-161 Elementary Statistics	SOC-101 Introduction to Sociology
CHM-110 Introduction to Chemistry	MAT-201 Calculus 1	SOC-212 Social Problems
CHM-111 Introduction to Chemistry Laboratory	MAT-202 Calculus 2	SPH-101 Speech
CHM-151 General Chemistry 1	MAT-220 Business Calculus	THE-101 Theatre
CHM-152 General Chemistry 2	MAT-250 Calculus 3	Foreign Languages
ECO-102 Principles of Macroeconomics	MUS-101 Introduction to Music	FRE-101 Elementary French 1
ECO-103 Principles of Microeconomics	PHL-101 Introduction to Philosophy	SPA-101 Elementary Spanish 1
ENG-101 English Composition 1	PHL-103 Logic	SPA-102 Elementary Spanish 2
ENG-102 English Composition 2	PHL-155 Ethics	
ENG-115 General Literature	PHS-107 Introduction to Astronomy	

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 2 (majors & non-majors
courses)

General Biology 1 (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; 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

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.

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 enter the workforce.

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 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/

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.

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.

Many of the programs at CCAC have a certificate/diploma option. A diploma is awarded for programs with fewer than 16 credits and can be completed in as little as one or two terms. A certificate normally ranges from 16 to 48 credits. Most certificates are designed to be completed in one year of full-time study (longer for part-time students). Some may require more credits and take more than one year, based on the program and industry requirements. The credits that students earn to receive a diploma or certificate award can often be used toward an Associate's degree. 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 professional development or enhancement of work-related skills. Many courses are scheduled in the evening hours to allow students to continue their education and work at the same time.

Earning a Four-year Degree at CCAC

CCAC and Indiana University of Pennsylvania (IUP) have developed collaborative degree programs 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.

ELEMENTS OF A 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 courses 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/

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.

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...	Select program...
Student is unsure of program selection or wishes to obtain a generalized degree	"089-GENERAL-STUDY-AS"
Student is taking classes at CCAC specifically to transfer to their home college or university	"001-NON-CCAC-STUD"
Student is taking course(s) for personal enrichment and is not pursuing a degree or certificate program	"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
English Composition	6
English Electives	6
Humanities	6
Mathematics	3
Science	3
Mathematics or Science	3
Social Science	3
Computer Skills ¹	
Program Core and Electives	21
Total Minimum Credits Required²	60

Basic Skills & General Education Core

Associate of Science	Minimum Credits
English Composition	6
Humanities	3
Mathematics	3
Science	3
Social Science	3
Computer Skills ¹	
Program Core and Electives	42
Total Minimum Credits Required²	60

¹ The 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.

² Specific 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.

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 alphacodes 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.

What is Prerequisite and Corequisite Instruction?

- **Prerequisite Instruction:** Many courses at the college require prerequisites. Prerequisites provide the 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 academic advisor.
- **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.

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.

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

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.

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 15 or more Honors credits are awarded an Honors degree and wear an Honors medallion at graduation.

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/

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

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 communities throughout the region. Some offerings are designed to increase the skills of municipal employees, employees who work or volunteer in nonprofit agencies, the effectiveness of board members of nonprofit and/or employees of 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

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*
- Health Care Technician/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 go to Community Training & Development at ccac.edu/Vocational_Education_Training_for_People_Who_Need_Learning_Support.aspx

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 Design
(176) (Certificate)

Ethnic & Diversity Studies
(114.2) (Certificate)

Film Worker
(127) (Certificate)

General Education
(085) (Certificate)

General Studies (AS)
(089) (Degree)¹

Graphic Communications
(374.3) (Degree)

Graphic Design
(376.3) (Certificate)

Industrial Design & Art
(280.1) (Degree)

Liberal Arts & Sciences (AS)
(006) (Degree)¹

Music
(018.1) (Degree)

Music Technology
(140) (Degree)

Music Technology
(141) (Certificate)

Theatre
(025.2) (Degree)

Technical Theatre
(125.1) (Certificate)

¹ University parallel program

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	3
		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	3
		15
Third Semester		
	Art Electives ¹	6
	Humanities Elective	3
	Mathematics Elective	3–4
	Social Science Elective	3
		15–16
Fourth Semester		
ART-265	Portfolio	3
SPH-101	Oral Communication	3
	Art Electives ¹	9
	Science Elective	3–4
		18–19
Minimum Credits to Graduate		63–65

¹ Students 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.

² Students 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.

Transfer Opportunities

The keystone icon indicates that this particular CCAC program is a Pennsylvania Transfer and Articulation Center (TAOC) approved Associate Degree program. All credits earned in this program are accepted by any state system college in Pennsylvania that offers a Bachelor's degree in Art, including California University of PA, Carlow University, Clarion University, Edinboro University, Indiana University of PA, and Slippery Rock University. Other articulation agreements are available for students to complete the Associate Degree and transfer to Art Institute of Pittsburgh and Robert Morris University. See www.ccac.edu/articulation for details.

It is important that students consult with a counselor early in their program to develop a course plan most appropriate for the school to which they intend to transfer.

Digital Design (176)

ALLEGHENY
CERTIFICATE

This program will develop the students technical and aesthetic skills necessary for entry-level positions in the print or web design field. This program focuses on graphic design, photography and imaging for students to find employment as a production artist, graphic designer, illustrator, desktop publisher, web developer, Adobe® Certified user or freelance designer.

Upon successful completion of the program, the graduate will:

1. Develop visual communication skills.
2. Demonstrate technical and perceptual skills.
3. Use principles of design.
4. Use color theory.
5. Use current technology as it applies to the arts.
6. Analyze in order to render 2D forms via line, value and perspective.
7. Analyze visual images and objects.

CERTIFICATE REQUIREMENTS

First Semester		Credits
ART-144	Digital Photography	3
ART-150	Introduction to Digital Graphic Design	3
ART-168	Digital Imaging	3
		9

Second Semester		
ART-165	Digital Publishing	3
ART-170	Web Graphic Design	3
ART-250	Advanced Digital Graphic Design	3
		9

Minimum Credits to Graduate 18

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

¹ Recommended 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	3
		9

Second Semester

THE-122	Technical Theatre 2	3
THE-226	Film Worker 2	3
THE-403	Cooperative Learning	3
		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

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

² Cultural 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	3
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.

³ For 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	3–4
	Humanities Elective	3
	Program Core or Elective	3
	Social Science Elective	3

15–16

Second Semester

ENG-102	English Composition 2	3
	Mathematics Elective ²	3–4
	Program Core or Elective (2)	6
	Science Elective	3–4

15–17

Third Semester

Program Core Elective (5)	15
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15

Fourth Semester

Program Core Elective (5)	15
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15

Minimum Credits to Graduate

60–63

¹ CCAC 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.

² Mathematics elective must be a college-level course

Graphic Communications (374.3)

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 and digital design fields. Graduates may find employment as a production artist, graphic designer, illustrator, desktop publisher, web developer, freelance designer or eligible Adobe® Certified user. The student may also elect to transfer to a four-year institution.

Upon successful completion of the program, the graduate 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.

- Analyze in order to render 2D forms via line, value and perspective.
- Use art history to develop visual arts vocabulary and critical thinking skills, in a verbal and written manner.
- Analyze three-dimensional forms.
- Analyze visual images and objects.

DEGREE REQUIREMENTS

First Semester

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-102	or higher as Mathematics Elective	3-4
		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	3-4
		15-16

Third Semester

ART-113	Graphic Communication	3
ART-129	Printmaking 1	3
ART-130	Photography 1 or	3
ART-144	Digital Photography or	3
ART-177	Applied Digital Photography	3
ART-170	Web Graphic Design	3
SPH-101	Oral Communication	3
		15

Fourth Semester

ART-103	Art History – Ancient or	3
ART-104	Art History – Modern	3
ART-165	Digital Publishing	3
ART-250	Advanced Digital Graphic Design	3
ART-265	Portfolio	3
	Social Science Elective	3
		15

Minimum Credits to Graduate

60–62

Graphic Design (376.3)

ALLEGHENY CERTIFICATE

This program is a concentration of traditional and digital courses to develop students skills in graphic design. The certificate program is also ideal for those students seeking professional development or improving on current skills. Graduates may find employment as a production artist, graphic designer, illustrator, desktop publisher, web developer, freelance designer or eligible Adobe® Certified user. The student may also elect to transfer to a four-year institution.

Upon successful completion of the program, the graduate will:

- Develop a portfolio suitable for employment, transfer to a four-year institution or artistic development.
- Develop visual communication skills.

- Demonstrate technical and perceptual skills.
- Use principles of design.
- Use color theory.
- Use current technology as it applies to the arts.
- Analyze in order to render 2D forms via line, value and perspective.
- Analyze visual images and objects.

DEGREE REQUIREMENTS

First Semester

		Credits
ART-114	Two-Dimensional Design	3
ART-130	Photography 1 or	3
ART-144	Digital Photography or	3
ART-177	Applied Digital Photography	3
ART-148	Color	3
ART-150	Introduction to Digital Graphic Design	3
ART-168	Digital Imaging	3
		15

Second Semester

ART-109	Drawing 1	3
ART-165	Digital Publishing	3
ART-170	Web Graphic Design	3
ART-113	Graphic Communication	3
ART-250	Advanced Digital Graphic Design	3
ART-265	Portfolio	3
		18

Minimum Credits to Graduate

33

Industrial Art and Design (280.1)

ALLEGHENY ASSOCIATE OF SCIENCE

The student graduating as an industrial designer will work within the business environment to create aesthetic, functional and ergonomic designs. The industrial artist will explore fields related to indoor and outdoor installations, event promotional art and as a commissioned or non-commissioned gallery artist. Graduates may find employment in industrial design, product development, materials design, drafting, ergonomics, art director, craft and fine artist, or freelance designer/artist. The student may also elect to transfer to a four-year institution.

Upon successful completion of the program, the graduate will:

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

DEGREE REQUIREMENTS

First Semester

		Credits
ART-103	Art History – Ancient	3
ART-114	Two-Dimensional Design	3
ART-148	Color	3
ENG-101	English Composition 1	3
MAT-108	Intermediate Algebra	4
		16

Second Semester

ART-109	Drawing 1	3
ART-223	Three-Dimensional Design	3
ART-150	Introduction to Digital Graphic Design	3
ENG-102	English Composition 2	3
	Science Elective	3-4
		15-16

Third Semester

ART-137	Ceramics 1	3
ART-142	Jewelry Making 1	3
ART-168	Digital Imaging	3
PHY-141	Physics 1	4
	Social Science Elective	3
		16

Fourth Semester

ART-104	Art History – Modern	3
ART-138	Sculpture 1	3
ART-255	Industrial Design and Art	3
ART-265	Portfolio	3
SPH-101	Oral Communication	3
		15

Minimum Credits to Graduate

62-63

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	3
		15-16

Second Semester

ENG-102	English Composition 2	3
	General Elective	3
	Major Field Electives ¹ (2)	6
	Mathematics Elective	3-4
		15-16

Third Semester

SPH-101	Oral Communication	3
	Science Elective	3-4
	Major Field Electives ¹ (3)	9
		15-16

Fourth Semester

	General Electives	6
	Major Field Electives ¹ (3)	9
		15

Minimum Credits to Graduate

60-63

¹ Concentration 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.

DEGREE REQUIREMENTS

First Semester

		Credits
ENG-101	English Composition 1	3
MUS-121	History of Music 1	3
MUS-128	Music Theory and Analysis 11	3
MUS-137	Musicianship Skills 1 ¹	2
MUS-221	Class Piano 1	3
	Music Ensemble Elective ²	2
		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	2
		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	3

17-18**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**

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

² Music 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

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

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

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

Music Technology (140)ALLEGHENY
ASSOCIATE OF SCIENCE

The Associate of Science degree in Music Technology prepares the student for a variety of employment opportunities within the commercial music industry. Graduates may find employment as a recording engineer, live sound reinforcement engineer, sound designer, music producer, music publisher, broadcast technician, audio equipment technician or sound engineering technician. The student may also elect to transfer to a four-year institution.

Upon successful completion of the program, the graduate will:

1. Create audio recordings that demonstrate an understanding of the knowledge and skills associated with recording technology hardware and software.
2. Demonstrate proper use of music technology hardware and software for live sound reinforcement.
3. Create computer-based music recordings that demonstrate advanced electronic music production techniques.
4. Identify and notate musical patterns presented aurally.
5. Analyze music from the common practice period of Western music history.
6. Demonstrate artistic self-expression with fluent technical skills in performance.
7. Identify the historical context of musical compositions presented aurally.

First Semester**Credits**

ENG-101	English Composition 1	3
MUS-119	Introduction to Music Technology	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 ¹	2

16**Second Semester**

ENG-102	English Composition 2	3
MUS-129	Music Theory and Analysis 2 ²	3
MUS-138	Musicianship Skills 2 ³	2
MUS-170	Audio Recording 1	3
MUS-270	Electronic and Computer Music	3
	Music Ensemble Elective ²	2

16**Third Semester**

MAT-102	Mathematical Concepts or	3
MAT-108	Intermediate Algebra	4
MUS-171	Audio Recording 2	3
MUS-228	Music Theory and Analysis 3 ³	3
MUS-237	Musicianship Skills 3 ⁴	2
MUS-271	Music and Audio in Media	3
	Social Science Elective	3

17-18**Fourth Semester**

MUS-172	The Business of Music	3
MUS-272	Live Sound Reinforcement	3
	Humanities Elective	3
	Music History Elective ¹	3
	Science Elective	3-4

15-16**Minimum Credits to Graduate****64-66**

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

² Music 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

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

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

⁵ Music History Elective includes the following courses:

MUS-101	Introduction to Music
MUS-121	History of Music 1
MUS-122	History of Music 2
MUS-160	American Popular Music
MUS-253	History of Jazz

Music Technology (141)

ALLEGHENY CERTIFICATE

The Certificate in Music Technology program is designed to develop the student's knowledge and skills relating to software and hardware used in the commercial music industry. The certificate program is ideal for those students seeking professional development or improving on current skills. Graduates may find employment as a recording engineer, live sound reinforcement engineer, sound designer, music producer, music publisher, broadcast technician, audio equipment technician or sound engineering technician. Articulation to the Music Technology Associate's degree program is possible for all students having completed the Music Technology certificate program.

Upon successful completion of the program, the graduate will:

1. Create audio recordings that demonstrate an understanding of the knowledge and skills associated with recording technology hardware and software.
2. Demonstrate proper use of music technology hardware and software for live sound reinforcement.
3. Create computer-based music recordings that demonstrate advanced electronic music production techniques.
4. Identify and notate musical patterns presented aurally.
5. Analyze music from the common practice of Western music history.

CERTIFICATE REQUIREMENTS

First Semester		Credits
MUS-119	Introduction to Music Technology	3
MUS-128	Music Theory and Analysis 1 ¹	3
MUS-137	Musicianship Skills 1 ¹	2
MUS-170	Audio Recording 1	3
MUS-172	The Business of Music	3

14

Second Semester

MUS-171	Audio Recording 2	3
MUS-270	Electronic and Computer Music	3
MUS-271	Music and Audio in Media	3
MUS-272	Live Sound Reinforcement	3

12

Minimum Credits to Graduate

26

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

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
	15

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
	18

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
	15-16

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
	15-19

Minimum Credits to Graduate

63-68

(B) TECHNICAL THEATRE**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-117 Theatre Production 1	3
THE-121 Technical Theatre 1	3
	18

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
	15

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
	18-19

Fourth Semester

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

Minimum Credits to Graduate

66-68

(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	3
	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)	4-6
	16-19

Third Semester

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

Fourth Semester

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

Minimum Credits to Graduate

61-65

Transfer Opportunities

The keystone icon indicates that this particular CCAC program is a Pennsylvania Transfer and Articulation Center (TAOC) approved Associate Degree program. All credits earned in this program are accepted by any state system college in Pennsylvania that offers a Bachelor's degree in Theatre, including California University of PA, Carlow University, Clarion University, Edinboro University, Indiana University of PA, and Slippery Rock University. Other articulation agreements are available for students to complete the Associate Degree and transfer to Robert Morris University and Westminster College.

It is important that students consult with a counselor early in their program to develop a course plan most appropriate for the school to which they intend to transfer. See www.ccac.edu/articulation for details.

Technical Theatre (125.1)

SOUTH CERTIFICATE

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.

CERTIFICATE REQUIREMENTS

First Semester		Credits
THE-101	Introduction to Theatre	3
THE-117	Theatre Production 1	3
THE-121	Technical Theatre 1	3
		9
Second Semester		
THE-118	Theatre Production 2	3
THE-122	Technical Theatre 2	3
THE-221	Introduction to Lighting Design	3
		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/PATRAC

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
(327.4) (Degree)

Court Reporting
(329.4) (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)

¹ University parallel program

² Collaborative agreement program

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	3
		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	3-4
		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	3-4
		15-17

Fourth Semester

ACC-202	Intermediate Accounting 2	3
	Business Elective ¹	3
	General Elective	3
	Humanities Elective	3
	Social Science Elective	3
		15

Minimum Credits to Graduate **62-66**

¹ Students 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.

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

Transfer Opportunities

Articulation agreements are available for students to complete the Associate Degree and transfer to La Roche College, Point Park University, Thiel College and Westminster College. It is important that students consult with a counselor early in their program to develop a course plan most appropriate for the school to which they intend to transfer. See www.ccac.edu/articulation for details.

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	3-4
		16-18
Second Semester		Credits
ACC-203	Managerial Accounting	4
BUS-103	Principles of Management	3
ENG-102	English Composition 2	3
	Economics Elective	3
	Science Elective	3-4
		16-17

Third Semester

SPH-101	Oral Communication	3
BUS-251	Business Law 1	3
	Accounting Electives ¹ (2)	6
	Business Elective	3
		15

Fourth Semester

	Accounting Electives ¹ (2)	6
	Business Elective	3
	General Elective	3
	Social Science Elective	3
		15

Minimum Credits to Graduate**62–65**¹ Accounting 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**

ACC-104	Financial Accounting	4
	Business Elective	3
	Computer Information Technology Elective	3–4
		10–11

Second Semester

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

Third Semester

	Accounting Electives (3)	9
	Business Elective	3
		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**

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	3–4
		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	3
		16

Third Semester

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

Fourth Semester

CIT-206	Administrative Technology and Procedures	3
	Restricted Electives ¹ (3)	9
	Science Elective	3–4
		15–16
Minimum Credits to Graduate		62–65

¹ Restricted Electives (five required)

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	3–4
		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	3
		17

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		Credits
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
Third Semester		Credits
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	3
		17
Fourth Semester		Credits
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	3
		17
Minimum Credits to Graduate		65

Business (004.2)

ALLEGHENY, BOYC E, 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.

Student Learning Outcomes

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.

Transfer Opportunities

The keystone icon indicates that this particular CCAC program is a Pennsylvania Transfer and Articulation Center (TAOC) approved Associate Degree program. All credits earned in this program are accepted by any state system college in Pennsylvania that offers a Bachelor's degree in Business, including California University of PA, Carlow University, Clarion University, Edinboro University, Indiana University of PA, and Slippery Rock University. Other articulation agreements are available for students to complete the Associate Degree and transfer to Argosy University, Capella University, La Roche College, Point Park University, PSU Commonwealth Campuses, Robert Morris University, University of Pittsburgh, West Liberty University and Westminster College.

It is important that students consult with a counselor early in their program to develop a course plan most appropriate for the school to which they intend to transfer. See www.ccac.edu/articulation for details.

DEGREE REQUIREMENTS

First Semester		Credits
ACC-104	Financial Accounting	4
BUS-103	Principles of Management ¹	3
ENG-101	English Composition 1	3
MAT-165	Probability and Statistics or	4
MAT-161	Elementary Statistics ²	3
	Computer Information Technology Elective	3-4
		16-18
Second Semester		Credits
ACC-203	Managerial Accounting	4
BUS-104	Principles of Marketing ¹	3
ECO -102	Principles of Macroeconomics	3
ENG-102	English Composition 2	3
	Social Science Elective	3
		16
Third Semester		Credits
ECO-103	Principles of Microeconomics	3
SPH-101	Oral Communication	3
BUS-251	Business Law ¹	3
	Science Elective with lab ¹	4
	Social Science Elective	3
		16

Fourth Semester

MAT-201	Calculus 1 or	4
MAT-220	Business Calculus ²	4
	Humanities Elective ¹	3
	Humanities Elective	3
	Science/Lab Elective ³	3-4

13-14

Minimum Credits to Graduate

61-64

Students transferring to a TAOC participating-institution must complete the courses as outlined above.

Students transferring to a non-TAOC participating-institution should meet with a counselor to choose appropriate courses for transfer, as outlined below:

¹ Major Field Electives: students must complete a minimum of 18 credits 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.

² Required Mathematics electives:

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

7-8

Minimum Credits to Graduate

63-66

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

³ It 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 (004).

- 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 (004)

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

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

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

(A) Bachelor of Science Accounting (097)

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)		
QBUS 215	Business Statistics	3
ACCT 304	Intermediate Accounting I	3
		6
<hr/>		
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
<hr/>		
Senior, First Semester		
(Please review additional CCAC requirements also)		
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
<hr/>		
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 (097)

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
<hr/>		
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
<hr/>		
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

Senior, Second Semester

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

IUP Total Credits

CCAC Credits	75-77
Total CCAC and IUP Credits	120-122

(C) Bachelor of Science Marketing (097)

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
<hr/>		
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
<hr/>		
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

(D) Bachelor of Science General Management & Human Resource Management (Double Major) (097)

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

(E) Bachelor of Science in General Management & Marketing (double major) (097)

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	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	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	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	3
		12

Senior, Third Semester		
MGMT 495	Business Policy	3
MKTG 450	Marketing Strategy	3
	MGMT Elective	3
	MKTG Elective	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.**

**(A) General Option
DEGREE REQUIREMENTS**

First Semester		Credits
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	3-4
		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	3-4
		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	3-4

15-17**Fourth Semester**

BUS-251	Business Law 1	3
	Business Course	3
	Business Electives	3
	General Electives	6

15**Minimum Credits to Graduate****62-67**¹ Any 3 or 4 credit CIT course can be used.² *PSY-101, Introduction to Psychology*, highly recommended.³ Restricted 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**

		Credits
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	3-4

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	3-4

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	3

15-17**Fourth Semester**

BUS-251	Business Law 1	3
	General Elective	3
	Specialized Electives ⁴	9

15**Minimum Credits to Graduate****62-67**¹ Any 3 or 4 credit CIT course can be used.² *PSY-101, Introduction to Psychology*, highly recommended.³ Restricted 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

⁴ Specialized 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

(C) Marketing Option**DEGREE REQUIREMENTS****First Semester**

		Credits
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	3-4

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	3-4

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	3

15-17**Fourth Semester**

BUS-251	Business Law 1	3
	General Elective	3
	Specialized Electives ⁴	9

15**Minimum Credits to Graduate****62-67**¹ Any 3 or 4 credit CIT course can be used² *PSY-101, Introduction to Psychology*, highly recommended³ Restricted 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

⁴ Specialized 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**

		Credits
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	3-4

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	3-4
		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	3
		15-17

Fourth Semester

BUS-251	Business Law 1	3
	General Elective	3
	Specialized Electives ⁴	9
		15

Minimum Credits to Graduate 62-67

¹ Any 3 or 4 credit CIT course can be used

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

³ Restricted 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

⁴ Specialized 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

Transfer Opportunities

Articulation agreements are available for students to complete the Associate Degree and transfer to Argosy University, California University of PA, Carlow University, Point Park University and Thiel College. It is important that students consult with a counselor early in their program to develop a course plan most appropriate for the school to which they intend to transfer. See www.ccac.edu/articulation for details.

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	3-4
		16-17

Second Semester

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

Minimum Credits to Graduate 32-33

¹ Restricted Electives

Business Elective	3
Computer Information Technology Elective	3-4

Court Reporter (327.4)

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.

- Apply realtime writing skills to an internship experience wherein a 40-page error free transcript will be produced.
- Define professional, ethical and social responsibilities of court reporting professionals as they relate to the judicial and broadcast captioning community.
- 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	3
		15

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-215	Court Transcription 3	2
CRT-218	Literary 3	3
	Social Science Elective	3
		17

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

89

Court Reporting (329.4)

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:

- 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.
- Apply realtime writing skills to an internship experience wherein a 40-page error free transcript will be produced.
- Define professional, ethical and social responsibilities of court reporting professionals as they relate to the judicial and broadcast captioning community
- 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

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
		15

Fourth Semester

BUS-251	Business Law 1	3
CRT-216	Question and Answer 3	3
CRT-217	Jury Charge 3	3
CRT-215	Court Transcription 3	2
CRT-218	Literary 3	3

14

Summer

CRT-226	Question and Answer 4	3
CRT-227	Jury Charge 4	3
CRT-228	Literary 4	3
CRT-252	Courtroom Internship	3

12

Minimum Credits to Graduate

71

Culinary Arts (670.1)

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	3

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	3

18

Summer

CLR-119	Elements of Nutrition	3
CLR-211	Menu Design	3

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	3

15

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	3
		15

Second Semester		Credits
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	4
		16

Summer		Credits
FLR-155	Hospitality Seminar 1	3
		3

Third Semester		Credits
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	3
		15

Fourth Semester		Credits
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	3
		15

Summer		Credits
FLR-255	Hospitality Seminar 2	3
		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		Credits
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		Credits
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.

CERTIFICATE REQUIREMENTS

Minimum of an Associate's degree required.

First Semester		Credits
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		Credits
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		Credits
LND-403	Land Administration Co-Op	3
	Restricted Electives ³	3
		6

Minimum Credits to Graduate **32**

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

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

³ Restricted Electives:

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

Transfer Opportunities

Articulation agreements are available for students to complete the Associate Degree and transfer to California University of PA. It is important that students consult with a counselor early in their program to develop a course plan most appropriate for the school to which they intend to transfer. See www.ccac.edu/articulation for details.

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

Second Semester		Credits
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	3
		12

Summer		Credits
FLR-155	Hospitality Seminar 1	3
		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	3-4
		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	3-4
		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	3
		16

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	6
		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

Transfer Opportunities

Articulation agreements are available for students to complete the Associate Degree and transfer to Point Park University. It is important that students consult with a counselor early in their program to develop a course plan most appropriate for the school to which they intend to transfer. See www.ccac.edu/articulation for details.

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	3
		13

Second Semester

RLE-101	Real Estate Fundamentals	2
RLE-102	Real Estate Practice	2
	Restricted Electives ¹	12
		16

Minimum Credits to Graduate 29

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		Credits
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		Credits
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	3
	Science Elective	3
		15

Third Semester		Credits
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		Credits
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

¹ Restricted 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

Transfer Opportunities

Articulation agreements are available for students to complete the Associate Degree and transfer to La Roche College. It is important that students consult with a counselor early in their program to develop a course plan most appropriate for the school to which they intend to transfer. See *www.ccac.edu/articulation* for details.

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/PATRAC.

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

American Sign Language – English Interpreting
(915.2) (Degree)

American Sign Language
(912.4) (Certificate)

Child Care
(655.3) (Diploma)

Child Development
(623.5) (Certificate)

Children with Special Needs
(624.5) (Certificate)

Criminal Justice & Criminology
(600.6) (Degree)

Drug & Alcohol
(414.2) (Certificate)

Early Childhood Director Core Certificate
(654.3) (Diploma)

Early Education & Child Development
(621.5) (Degree)

Early Education & Child Development
(622.4) (Certificate)

Education Paraprofessional
(679.3) (Degree)

Education Paraprofessional
(680.4) (Certificate)

also see *Health & Physical Education*
(020.3)

Fire Science Administration
(330.2) (Degree)

Fire Science Administration
(130.1) (Certificate)

Global Studies
(103.1) (Certificate)

Health & Physical Education
(020.3) (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)

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)

Transportation Security Administration
(614) (Diploma)

Women's Studies
(106) (Certificate)

American Sign Language – English Interpreting (915.2)

NORTH
ASSOCIATE OF SCIENCE

This program provides the solid foundation necessary to lead to an interpreting career. The educational philosophy of the ASU English Interpreting program at CCAC centers on providing students with the superior language skills and ethical competencies needed by today's interpreters. Interpreting is a diverse career, offering a wide variety of settings in which to work. The US Department of Labor, Bureau of Labor and Statistics, predicts that job growth for interpreters and translators will increase 46% from 2012 through 2022 (much faster than average). Through foundational interpreting courses, observations in the field, and practicum placement, students become skilled professionals. Students who successfully complete the program will be prepared to sit for the Pennsylvania Educational Interpreter Performance Assessment (EIPA) and/or the National Interpreter Certification (NIC) written exam. Students holding a Bachelor's degree would be permitted to sit for the NIC performance 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 (PA Act 114), Pennsylvania State Police Criminal History Check (PA Act 34), Pennsylvania Public Welfare Child Abuse History Clearance Act (PA Act 151), sign a background check affidavit (PA Act 24), complete mandated reporter training (PA Act 126), and have a negative TB test. Practicum students will be required to meet local requirements of the practicum placement site.

Upon completion of this program, students will be prepared to seek provisional registration with the state for employment as an interpreter in the community, or as an educational interpreter upon taking the EIPA and scoring 3.5 or higher.

Students may enter the program in three ways:

1. Complete CCAC's 20-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, offered throughout the year.

DEGREE REQUIREMENTS

First Semester (Fall 1)

ASL-209	Advanced ASL and Cognitive Processing 1	3
ENG-101	English Composition 1	3
ITP-103	Discourse Analysis and Translation	4
ITP-105	Introduction to Interpreting	3
		13

Second Semester (Spring 1)

ASL-210	Advanced ASL and Cognitive Processing 2	3
ENG-102	English Composition 2	3
ITP-104	Consecutive Interpreting	4
ITP-200	Linguistics of English and ASL	3
		13

Third Semester (Summer 1)

ITP-112	Service Learning	4
SPH-101	Oral Communications	3
		7

Fourth Semester (Fall 2)

ITP-206	Ethics & Business of Interpreting	4
ITP-208	Simultaneous Interpreting	4
ITP-211	NIC & EIPA Test Preparation	2
	Science Elective	3-4
		13-14

Fifth Semester (Spring 2)

ITP-212	Educational Interpreting	4
ITP-250	Practicum and Portfolio	4
PSY-101	Introduction to Psychology	3
	Math Elective ¹	3-4
		14-15

Minimum Credits to Graduate

60-62

¹ Students 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 (912.4)

CERTIFICATE
NORTH

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. This certificate also serves as the language foundation and pre-requisite for the Associate's degree American Sign Language/English Interpreter Training 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.

CERTIFICATE REQUIREMENTS

First Semester - Fall		Credits
ASL-101	Elementary American Sign Language 1	4
ASL-104	Visual Gestural Communications	3
		7
Second Semester - Spring		Credits
ASL-102	Elementary American Sign Language 2	4
ASL-109	Deaf Culture	3
		7
First Summer Session		Credits
ASL-201	Intermediate American Sign Language 1	3
		3
Second Summer Session		Credits
ASL-202	Intermediate American Sign Language 2	3
		3
Minimum Credits to Graduate		20

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 course work 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 the diploma, students can 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.cdacouncil.org.

Upon successful completion of the program, the graduate will:

1. Integrate appropriate theories and practices to create, implement and evaluate developmentally effective experiences for children and their families.
2. Apply appropriate observation and assessment strategies to positively influence children's development and learning as they employ appropriate discipline terminology and professional tone in written and oral communication.

Students can apply the credits earned in this diploma program toward a certificate or Associate degree in Early Education and Child Development. Upon completion of his 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
		9
Minimum Credits to Graduate		9

Child Development (623.5)

ALLEGHENY, BOYCE, NORTH, SOUTH
CERTIFICATE

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 to create, implement and evaluate developmentally effective experiences for children and their families.
2. Work with children of diverse ages, abilities and cultures in multiple field experiences in child care and educational environments as they identify community resources to support children and their families.
3. Apply appropriate observation and assessment strategies to positively influence children's development and learning as they employ appropriate discipline terminology and professional tone in written and oral communication.

Students can apply the credits earned in the certificate program toward a certificate or Associate 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, pre-school programs, public and private schools, before and after school programs or private homes.

Weekly field observations and experiences are required throughout the course work 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), Pennsylvania Department of Public Welfare Child Abuse History Record Check (Act 151) and meet local requirements of the field placement site.

CERTIFICATE REQUIREMENTS

First Semester

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
		9

Second Semester

ECD-135P	Practicum: Observation and Assessment	3
ECD-212	Language, Literacy and Literature in Early Childhood	3
	Restricted Electives ¹	3
		9

Minimum Credits to Graduate 18

¹ Restricted Electives:

Choose one from the following:

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 (624.5)

ALLEGHENY, SOUTH
CERTIFICATE

The Children with Special Needs certificate 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 certificate program to gain specialized parenting skills.

Upon successful completion of the program, the graduate will:

1. Integrate appropriate theories and practices to create, implement and evaluate developmentally effective experiences for children and their families.
2. Apply appropriate observation and assessment strategies to positively influence children's development and learning as they employ appropriate discipline terminology and professional tone in written and oral communication.
3. Work with children of diverse ages, abilities and cultures in multiple field experiences in child care and educational environments as they identify community resources to support children and their families.

Students can apply the credits earned in the certificate program toward a certificate or Associate degree in Early Education and Child Development. Weekly field observations and experiences are required throughout the course work in this program. Students

must be eligible for clearances through the Federal Criminal History Record (Act 114), Pennsylvania State Police Criminal History Check (ACT34) and the Pennsylvania Department of Public Welfare Child Abuse History Record Check (Act151) 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, therapeutic support workers, child care workers or as respite care workers.

CERTIFICATE REQUIREMENTS

First Semester

		Credits
ECD-101	Introduction to Early Education and Child Development	3
SOC-101	Introduction to Sociology	3
SOW-130	Community Resources	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	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 crossdisciplinary 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.

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.

Transfer Opportunities

The keystone icons for Specializations A & B indicate that this particular CCAC program is a Pennsylvania Transfer and Articulation Center (TAOC) approved Associate Degree program. All credits earned in this program are accepted by any state system college in Pennsylvania that offers a Bachelor's degree in Criminal Justice, including California University of PA, Carlow University, Clarion University, Edinboro University, Indiana University of PA, and Slippery Rock University. Other articulation agreements are available for students to complete the Associate Degree and transfer to Argosy University, Capella University, Gannon University, Grand Canyon University, La Roche College, Point Park University, PSU Commonwealth Campuses, Robert Morris University and Westminster College.

It is important that students consult with a counselor early in their program to develop a course plan most appropriate for the school to which they intend to transfer. See www.ccac.edu/articulation for details.

Advanced Standing Opportunities

CCAC recognizes the Act 120 Police Training Certificate. CCAC students who have completed that certification will be awarded 15 credits as follows:

- CJC-101 Introduction to Criminal Justice & Criminology
- CJC-151 Criminal Justice System Law
- CJC-201 Fundamentals of Criminal Investigation
- CJC-203 Evidence & Procedures
- CJC-206 Police Operations

CCAC students who have completed the Basic Training curriculum offered by the Allegheny County Bureau of

Corrections will be awarded nine credits as follows:

- CJC-207 Criminal Offenders and their Environment
- CJC-211 Treatment of Offenders: Issues and Strategies
- CJC-214 Criminal Justice Administration Practicum

Students must choose one of the following Specialization tracks: **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
POL-103	American Government or	3
PSY-101	Introduction to Psychology or	3
SOC-101	Introduction to Sociology ⁴	3
		15

Second Semester		Credits
CJC-151	Criminal Justice System Law	3
CJC-152	Ethics in Criminal Justice	3
ENG-102	English Composition 2 or	3
ENG-115	General Literature 2 ⁵	3
	Science Elective ¹	4
POL-103	American Government or	3
PSY-101	Introduction to Psychology or	3
SOC-101	Introduction to Sociology ⁴	3
		16

Third Semester		Credits
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 ²	3-4
		15-16

Fourth Semester		Credits
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
MUS-101	Introduction to Music or	3
THE-101	Introduction to Theatre or	3
PHL-101	Introduction to Philosophy ⁶	3
	Mathematics Elective ³	3-4
		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	3
		15

Second Semester

CJC-151	Criminal Justice System Law	3
CJC-152	Ethics in Criminal Justice	3
ENG-102	English Composition 2 or	3
ENG-115	General Literature ⁵	3
	Science Elective ³	4
POL-103	American Government or	3
SOC-101	Introduction to Sociology ⁴	3
		16

Third Semester

CJC-207	Introduction to Criminology	3
SPH-101	Oral Communication	3
MUS-101	Introduction to Music or	3
THE-101	Introduction to Theatre or	3
PHL-101	Introduction to Philosophy ⁶	3
	Mathematics Elective ²	3-4
	Restricted Elective ¹	3-4
		15-17

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	3
	(NOTE: Students can only use <i>CJC-211</i> once to fulfill fourth semester requirements.)	
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**

Students transferring to a TAOC participating-institution must complete the courses as outlined above.

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

¹ 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

² 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

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

Students transferring to a non-TAOC participating-institution should meet with a counselor to choose appropriate courses for transfer. Minimum requirements for graduation in this program include:

⁴ Choose any Social Science elective.

⁵ Choose ENG-102 or another English elective.

⁶ Choose any Humanities Elective

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

(C) Computer Forensics

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.

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
		16

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 Foreign Language	3
SPH-101	Oral Communication	3

15

Minimum Credits to Graduate 64

Drug & Alcohol (414.2)

ALLEGHENY, SOUTH
CERTIFICATE

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.

CERTIFICATE 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

¹ Restricted 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 to create, implement and evaluate
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. Utilize student-prepared tools and strategies that reflect content and pedagogical knowledge of intentional and responsive practice.
4. Apply appropriate observation and assessment strategies to positively influence children's development and learning as they employ appropriate discipline terminology and professional tone in written and oral communication.

To begin this coursework, students must:

1. Have an associate or bachelor's degree in early childhood education, child development, special education, elementary education or the human service field.
2. Have an associate 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 (ACT114).

The student must complete three, three-credit courses that are not included in any other associate 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

	Credits
First Semester	
Restricted Elective ¹	3
Second Semester	
Restricted Elective ¹	3
Third Semester	
Restricted Elective ¹	3
<hr/>	
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 to create, implement and evaluate developmentally effective experiences for children and their families.
2. Work with children of diverse ages, abilities and cultures in multiple field experiences in child care and educational environments as they identify community resources to support children and their families.
3. Apply appropriate observation and assessment strategies to positively influence children's development and learning as they employ appropriate discipline terminology and professional tone in written and oral communication.
4. Utilize student-prepared tools and strategies that reflect content and pedagogical knowledge of intentional and responsive practice.
5. 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.

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.

Career opportunities exist in infant/toddler centers, home-family support roles, early childhood programs, nursery schools, pre-school 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 & 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 Pennsylvania teacher certification tests in both basic skills and pedagogy and should consult with faculty for current requirements.

DEGREE REQUIREMENTS

	Credits	
First Semester		
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
<hr/>		
	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 ⁴	3
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	15-16	

Third Semester		
ECD-202	Children With Special Needs	3
ECD-211	Family Systems	3
	Literature Elective ³	3
	Science/Lab Elective	3-4
	Social Science Elective ¹	3
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	15-16	

Fourth Semester		
ECD-214	Curriculum for the Early Childhood Classroom	3
ECD-240	Practicum: Pre-K-4	3
ECD/SOW	Restricted Electives ²	3
MAT-110	Mathematics for Elementary Education ²	3
	Science Elective	3-4
	Art, Music or Theatre Elective ³	3
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	15-16	

Minimum Credits to Graduate

60–63

Students transferring to a TAOC participating institution must complete the courses as outlined above

¹ Recommended 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

² Restricted 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

Students not transferring to institution related to TAOC should meet with a counselor to choose appropriate courses for transfer.

³ Any humanities elective

⁴ Mathematics/Science

MAT-107	Mathematics for Elementary Education or	3
MAT-190	Contemporary Mathematics or	4
MAT-195	Business Mathematics	3
Mathematics or Science Elective		3-4

6-8

Transfer Opportunities

The keystone icon indicates that this particular CCAC program is a Pennsylvania Transfer and Articulation Center (TAOC) approved Associate Degree program. All credits earned in this program are accepted by any state system college in Pennsylvania that offers a Bachelor's degree in Early Childhood Education, including California University of PA, Carlow University, Clarion University, Edinboro University, Indiana University of PA, and Slippery Rock University.

Other articulation agreements are available for students to complete the Associate Degree and transfer to Grand Canyon University, Robert Morris University and Westminster College. It is important that students consult with a counselor early in their program to develop a course plan most appropriate for the school to which they intend to transfer. See www.ccac.edu/articulation for details.

Early Education & Child Development (622.4)

ALLEGHENY, BOYCE, NORTH, SOUTH
CERTIFICATE

This program is primarily for students who work with children/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 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 to create, implement and evaluate developmentally effective experiences for children and their families.
2. Work with children of diverse ages, abilities and cultures in multiple field experiences in child care and educational environments as they identify community resources to support children and their families.
3. Apply appropriate observation and assessment strategies to positively influence children's development and learning as they employ appropriate discipline terminology and professional tone in written and oral communication.
4. Utilize student-prepared tools and strategies that reflect content and pedagogical knowledge of intentional and responsive practice.
5. 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.

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 inhome child care professionals. Graduates may seek employment as a child care assistant, nanny or as an 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)	3

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)	6

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	3
		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	3–4
		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	3–4
		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	3
		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

³ Restricted 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

⁴ Recommended 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	3–4
	15–16

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

¹ 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

² 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

³ Recommended 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

⁴ Restricted 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.

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

¹ Restricted Electives

ALH-102	Basic Emergency Management or EMT or	3
		3

	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

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	3
		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	3
		9

Second Semester

POL-204	Comparative Politics	3
HIS-213	Twentieth Century World History	3
	Restricted Elective ²	3
		9

Minimum Credits to Graduate 18

¹ Language 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.

² Restricted 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 (020.3)

ALLEGHENY, BOYCE, NORTH, SOUTH
ASSOCIATE OF SCIENCE

The Health & Physical Education program is a university parallel program that prepares students for transfer to bachelor degree programs related to exercise science, physical activity/wellness, sports management, and Health and Physical Education teacher certification. Students work with an academic advisor to choose electives that meet the requirements for their chosen four-year institution.

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

1. Demonstrate knowledge within the health and physical education discipline including kinesiology, functional anatomy, exercise physiology, health/wellness, and injury prevention and treatment.
2. Demonstrate knowledge and skill in risk factor and health status identification, fitness appraisal and exercise prescription.
3. Demonstrate ability to 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. Apply knowledge and skills in Health and Physical Education to professional certifications, employment in the field and/or personal health.

Graduates transfer to Bachelor's programs in health related professions including exercise physiology, sports medicine, health club management, cardiac rehabilitation, athletic administration, sports management and education. The Health and Physical Education courses are also used by non-majors to enhance knowledge and skills for personal health/enrichment, professional certifications and employment in the field.

DEGREE REQUIREMENTS

First Semester		Credits
BIO-151	General Biology 1	4
ENG-101	English Composition 1	3
HPE-171	Personal and Community Health & Wellness	3
HPE-172	Foundation of Health & Physical Education	3
	Computer Information Technology Elective	3
		16

Second Semester

	Science Elective ¹	4
ENG-102	English Composition 2	3
HPE-177	First Aid & Athletic Injuries	3
	Health & Physical Education Restricted Elective ^{1,2}	3
PSY-101	Introduction to Psychology	3
		16

Third Semester

HPE-201	Applied Anatomy & Kinesiology	3
	Health and Physical Education Restricted Elective ^{1,2}	3
	Mathematics Elective ¹	3-4
	General Electives ¹	6
		15-16

Fourth Semester

HPE-207	Fundamentals of Exercise Physiology	3
HPE-225	Fundamentals of Fitness Theory, Programming & Assessment	3
	Health and Physical Education Elective ¹	2-3
	Humanities Elective ¹	3
	General Elective ¹	3
Minimum Credits to Graduate		14-15
		61-63

¹ Students are required to meet with a transfer counselor to select electives based upon the four-year institution where the Bachelor's degree will be earned.

² Restricted Electives: Students are required to choose two (2) restricted Health and Physical Education electives from among the following:

HPE-174	Coaching and Officiating Sports	3
HPE-175	Recreation and Group Activities	3
HPE-193	Fieldwork in Health and Physical Education	3
HPE-205	Organization & Management of Adult Fitness Programs	3

Transfer Opportunities

Articulation agreements are available for students to complete the Associate Degree and transfer to University of Pittsburgh Bradford. It is important that students consult with a counselor early in their program to develop a course plan most appropriate for the school to which they intend to transfer. See www.ccac.edu/articulation for details.

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	3
		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	3-4
		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	3
	Philosophy Elective	3
	Science Elective	3-4
		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	3
		15

Minimum Credits to Graduate**61-63**

¹ CJC-101: CCAC will award credit for this course with the "Police Academy Training Certificate."

² FSA-102: CCAC will award credit for this course with the "Pennsylvania Firefighter 1 Certificate."

³ HLS-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		Credits
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

Transfer Opportunities

Articulation agreements are available for students to complete the Associate Degree and transfer to Point Park University. It is important that students consult with a counselor early in their program to develop a course plan most appropriate for the school to which they intend to transfer. See www.ccac.edu/articulation for details.

Advanced Standing Opportunities

CCAC will grant credit for courses in the Associate of Science and Certificate programs in Homeland Security as follows:

- Completion Certificate from a State Certified Policy Academy = CJC-101 Introduction to Criminal Justice/Criminology (3 credits)
- PA Firefighter 1 Certification = FSA-102 Principles of Emergency Service (3 credits).
- PA Emergency Medical Technician Certificate = HLS-203 Emergency Medical Services (3 credits).

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.

CERTIFICATE REQUIREMENTS

First Semester		Credits
LMS-101	Introduction to Labor and Management Studies	3
Second Semester		Credits
LMS-103	Critical Issues in Pittsburgh Regional Labor and Management Relations	3
Summer		Credits
LMS-105	Labor and Management Research/Portfolio Development and Application ¹	3
Third Semester		Credits
LMS-107	Human Capital in Regional Economic Development	3
Fourth Semester		Credits
LMS-109	Pittsburgh Labor and Management in the Global Economy	3
Minimum Credits to Graduate		15

¹ LMS-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)	3-4
		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	3
		16
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	3-4
		13-14
Fourth Semester		
PSY-290	Research Methods and Applications ¹	4
	Humanities Elective	3
	Restricted Elective ⁷	3
	Social Sciences Elective	6
		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.

¹ Psychology:		
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

² Computer and Information Technology Elective:		
CIT-100	Computer Fundamentals and Applications or	3
CIT-140	Office Productivity Applications	4

³ Science Course:		
BIO-151	General Biology 1	4

⁴ Psychology 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

⁵ Philosophy Elective:		
PHL-155	Ethics	3

⁶ Science Elective: Students should select lab courses from Biology, Chemistry, Physics or Astronomy.		
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⁷ Restricted Elective: Students should select from the following: Art, Dance, Foreign Language, Geography, Health and Physical Education, Literature, Music or Theatre.		
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Transfer Opportunities

The keystone icon indicates that this particular CCAC program is a Pennsylvania Transfer and Articulation Center (TAOC) approved Associate Degree program. All credits earned in this program are accepted by any state system college in Pennsylvania that offers a Bachelor's degree in Psychology, including California University of PA, Carlow University, Clarion University, Edinboro University, Indiana University of PA, and Slippery Rock University.

Other articulation agreements are available for students to complete the Associate Degree and transfer to Argosy University, Grand Canyon University, La Roche College, Point Park University, PSU Commonwealth Campuses, Robert Morris University and Westminster College. It is important that students consult with a counselor early in their program to develop a course plan most appropriate for the school to which they intend to transfer. See www.ccac.edu/articulation for details.

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.
- Differentiate among the fundamental theoretical perspectives of sociology and/or anthropology.
 - 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	3
		15-16
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

¹ Humanities electives recommended are ethics, logic and speech.

² Social science electives include alphacodes *ANT*, *CJC*, *ECO*, *GEO*, *HIS*, *POL*, *PSY* and *SOC*.

Social Science Concentrations

General Social Science

Student to select four courses with the alphacodes of *ANT*, *CJC*, *ECO*, *GEO*, *HIS*, *POL*, *PSY* and *SOC*.

Anthropology and Sociology

Student to select four courses with the alphacodes of *ANT* and *SOC*.

History

Student to select four courses with the alphacodes of *HIS* and *GEO*.

Political Science

Student to select four courses with the alphacodes of *ECO* and *POL*.

Transfer Opportunities

Articulation agreements are available for students to complete the Associate Degree and transfer to Capella University, Chatham University, La Roche College, Point Park University and Robert Morris University. It is important that students consult with a counselor early in their program to develop a course plan most appropriate for the school to which they intend to transfer. See www.ccac.edu/articulation for details.

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:

- Employ social work terminology appropriately.
- Identify the core values of the social work profession.
- Define the major elements of the social work profession.
- Examine the main theoretical perspectives of social work.
- Assess diversity and its relevance to the social work practice.
- Utilize technology including web-based resources, for the purpose of education, advocacy, research and practice
- 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:

- Professional identify
- Ethical practice
- Critical thinking
- Diversity in practice
- Human rights and justice research-based practice
- Research and practice
- Human behavior
- Policy practice

9. Practice context
 10. Encouragement, assessment, intervention and evaluation of social work practices

(Council of Social Work Education)

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

¹ Recommended 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

² Social Work Restricted Electives (6 credits)

SOW-106	Interviewing Skills	3
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SOW-120	Child Welfare	3
SOW-130	Community Resources	3

Transfer Opportunities

The keystone icon indicates that this particular CCAC program is a Pennsylvania Transfer and Articulation Center (TAOC) approved Associate Degree program. All credits earned in this program are accepted by any state system college in Pennsylvania that offers a Bachelor's degree in Social Work, including California University of PA, Carlow University, Clarion University, Edinboro University, Indiana University of PA and Slippery Rock University.

Other articulation agreements are available for students to complete the Associate Degree and transfer to Chatham University, La Roche College, Point Park University and University of Pittsburgh. It is important that students consult with a counselor early in their program to develop a course plan most appropriate for the school to which they intend to transfer. See www.ccac.edu/articulation for details.

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	3
		9
Second Semester		Credits
SOW-110	Social Work Service Learning Practicum	3
SOW-210	Human Behavior in the Social Environment	3
	Social Work Electives (2) ¹	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.

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	3

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	3

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	3

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	3-4

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.

¹ Recommended 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

² Recommended 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

³ Restricted 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	3
	(highly recommended for those interested in teaching grades 7 to 12)	

⁴ Recommended English Literature Electives:

ENG-115	General Literature	3
ENG-117	Children's Literature	3
ENG-205	American Literature to the Civil War	3

⁵ Certification concentration elective: Check with counselor to see course recommendations) mathematics, science, English and social studies.

Transfer Opportunities

Articulation agreements are available for students to complete the Associate Degree and transfer to Grand Canyon University, Robert Morris University and Slippery Rock University. It is important that students consult with a counselor early in their program to develop a course plan most appropriate for the school to which they intend to transfer. See www.ccac.edu/articulation for details.

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		Credits
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		Credits
EDU-202	Educational & Assistive Technology	3
EDSP 102	Educational Psychology ²	3
ENG-115	General Literature	3
GEO-101	World Geography	3
MAT-108	Intermediate Algebra ¹	4
		16

Sophomore, Second Semester		Credits
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	Instructional Theory and Planning for the Middle Level	3
		18

Junior, First Semester		Credits
EDUC 242	Pre-student Teaching Clinical Experience I	1
HPE-171	Personal & Community Health and Wellness	3
MAT-142	Pre-calculus ¹	4
MATH 456	Geometry for Elementary/Middle Level Teachers	3
MIDL 221	Literature for Middle Level	3
MIDL 222	Reading Instruction and Assessment in Grades 4-8	3
		17

Junior, Second Semester

EDSP 477	Assessment of Student Learning: Design and Interpretation of Educational Measures	3
GGY-203	Physical Geology	4
MAT-165	Probability & Statistics ¹	4
MATH 459	Technology in Elementary/ Middle-Level Mathematics Instruction	3
MATH 471	Algebra for Elementary/Middle Level Teachers	3
		17

Senior, First Semester

EDUC 342	Pre-student Teaching Clinical Experience II	1
EDUC 442	School Law	1
MIDL 311	Social Studies Instruction and Methods of Teaching Math at the Middle Level	3
MATH 413	Assessment in Grades 4-8	3
MIDL 312	Science Instruction and Assessment in Grades 4-8	3
MIDL 425	Methods of Teaching Language Arts in Grades 4-8	3
		14

Senior, Second Semester

EDUC 421	Student Teaching-General Education in Grades 4-6	5
EDUC 440	Professional Seminar: Teacher As Leader and Researcher Grades 4-8	2
EDUC 441	Student Teaching Math Education in grades 6, 7, or 8	5
		12

Minimum Credits to Graduate (CCAC-AA)	75
Minimum Credits to Graduate (IUP-BS)	51
Minimum Credits to Graduate (Total)	126

¹ MAT-108, MAT-142 and MAT-165 transfer to IUP as 3 credits

² 3-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	Educational Psychology ¹	3
EDU-202	Educational & Assistive Technology	3
ENG-115	General Literature	3
PHY-100	Basic Physics	4
		16

Sophomore, Second Semester

EDU-205	English Language Learners in the Classroom	3
GEO-101	World Geography	3
MIDL 310	Instructional Theory and Planning for the Middle Level	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	Pre-student Teaching Clinical Experience 1	1
GGY-203	Physical Geology	4
HPE-171	Personal & Community Health and Wellness	3
MIDL 221	Literature for Middle Level	3
MIDL 222	Reading Instruction and Assessment in Grades 4-8	3

18**Junior, Second Semester**

CHM-120	Bio-organic Chemistry	4
EDSP 477	Assessment of Student Learning Design and Interpretation of Educational Measures	3
EDUC 481	Special Topics in Science	3
GGY-201	Introduction to Geology	3
MAT-165	Probability and Statistics ²	4

17**Senior, First Semester**

EDUC 342	Pre-student Teaching Clinical Experience II	1
EDUC 442	School Law	1
MATH 413	Methods of Teaching Math at the Middle Level	3
MIDL 311	Social Studies Instruction and Assessment in Grades 4-8	3
MIDL 312	Science Instruction and Assessment in Grades 4-8	3
MIDL 425	Methods of Teaching Language Arts in Grades 4-8	3

14**Senior, Second Semester**

EDUC 421	Student Teaching-General Education in grades 4-6	5
EDUC 440	Professional Seminar: Teacher As Leader and Researcher Grades 4-8	2
EDUC 441	Student Teaching Science Education in grades 6, 7, or 8	5

12**Minimum Credits to Graduate (CCAC-Associate)****75****Minimum Credits to Graduate (IUP-Bachelor)****48****Minimum Credits to Graduate (Total)****123**¹ 3-Letter Alphacodes are CCAC classes; 4-letter Alphacodes are IUP classes² MAT-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

9**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 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

¹ Course has a prerequisite that must be completed prior to enrolling in this course.

² Restricted 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 MyCCAC. 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.

Transfer Opportunities

For students who wish to further their education at the baccalaureate level, there are articulation agreements that specifically accept the health-related Associate Degree towards a bachelor's degree in health administration, including Carlow University, Point Park University and Robert Morris University. See www.ccac.edu/articulation for details.

Anesthesia Technologist
(462.1) (Degree)

Central Service Technician
(438.2) (Certificate)

Computed Assisted Tomography (CAT Scanning)
(445.2) (Diploma)

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)
(446.2) (Diploma)

Massage Therapy
(443.2) (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)

Paramedic
(533.2) (Degree)

Paramedic
(534.2) (Certificate)

Pharmacy Technician
(518.2) (Degree)

Pharmacy Technician
(418.2) (Certificate)

Phlebotomist
(513.2) (Diploma)

Physical Therapist Assistant
(628.2) (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)

Anesthesia Technologist (462.1)

BOYCE
ASSOCIATE OF SCIENCE

This program prepares graduates to work under the supervision of an anesthesia provider and as a vital member of the anesthesia care team. The anesthesia technologist assists with the preparation of various types of equipment and pharmacology required for the delivery of anesthesia care.

Anesthesia technologist work in a variety of clinical settings that include hospital operating rooms, interventional and diagnostic radiology, labor and delivery units, intensive care units, emergency rooms, outpatient procedure suites and ambulatory surgery centers.

Enrollment in this program is limited by availability of clinical sites and other factors. Students must make a separate application to this program. Admission to the college and completion of any developmental level course is required.

Upon successful completion of the program, the graduate will:

1. Exhibit entry level competencies in the cognitive, psychomotor and affective domains of an anesthesia technologist.
2. Demonstrate proficiency in the acquisition, preparation and application of various types of equipment required for the delivery of anesthesia care.
3. Utilize independent judgment for rapid response to the changing circumstances in patient care.
4. Apply safe practices for patient, self and other members of the anesthesia care team.
5. Display professionalism and ethical behavior in patient and staff interactions.

The Anesthesia Technologist Program is an American Society of Anesthesia Technologist and Technicians (ASATT) approved program and is seeking accreditation.

DEGREE REQUIREMENTS

First Semester (Spring)		Credits
ANE-110	Basic Principles of Anesthesia	4
ANE-111	Basic Anesthesia Equipment	4
BIO-110	Introduction to Biology or	4
BIO-151	General Biology 1 ¹	4
ENG-101	English Composition	3
		15
Summer		
PSY-101	Introduction to Psychology	3
	Mathematics Elective (MAT-100 or higher) with prerequisite MAT-090	3-4
		6-7
Second Semester (Fall)		
ANE-113	Anesthesia Technology Clinical	1
ANE-114	Advanced Principles of Anesthesia Technology	4
ANE-116	Advanced Anesthesia Equipment	4
BIO-161	Anatomy And Physiology 1	4
ENG-102	English Composition 2	3
		16

Third Semester (Spring)

ANE-213	Anesthesia Technology Clinical 2	2
ANE-214	Anesthesia Pharmacology	4
BIO-162	Anatomy and Physiology 2	4
CHM-109	Introduction to Chemistry or Humanities Elective	4 3
		17

Fourth Semester (Fall)

ANE-220	Professional Issues for the Anesthesia Technologist	2
ANE-221	Anesthesia Technology Clinical 3	5
ANE-222	Anesthesia Technology Clinical 4	5
		12
Minimum Credits to Graduate		66-67

¹ Recommended for transfer students.

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	5
		16
Minimum Credits to Graduate		16

Computed Assisted Tomography (CAT Scanning) (445.2)

BOYCE
DIPLOMA

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.rrrt.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.
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.

DIPLOMA 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	2
		8

Second Semester

CAT-204	Clinical Applications of Computerized Tomography	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), 25400 U.S. Highway 19 North, Suite 158, Clearwater, FL 33763; 727.210.2350, www.caahep.org.

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.

- Review relevant patient information and present appropriate data to physician.
- 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. The objective of the General Ultrasound field of study (A) is to prepare competent entry-level general sonographers in the cognitive (knowledge), psychomotor (skills) and affective (behavior) learning domains.

DEGREE REQUIREMENTS

Program Pre-Requisite Courses		Credits
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

First Semester		Credits
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-103	Abdominal, Obstetrical & Gynecological Ultrasound	4
DMS-113	Ultrasound Clinical 1/Abdomen/GYN	2
PHY-127	Physics for Health Science/Ultrasonography	3
PSY-101	Introduction to Psychology	3
		12

Summer

DMS-115	Ultrasound Clinical 2/Abdomen-OB/GYN	4
		4

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

(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

Program Pre-Requisite Courses		Credits
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	4
	Recommended Elective(s) ¹	-
		10

¹ Recommended Elective(s)

DMS-245	Cardiovascular Phlebotomy	1
DMS-246	Cardiovascular EKG	1

Minimum Credits to Graduate

74

(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**Program Pre-Requisite Courses**

		Credits
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 Recommended Elective(s) ¹	4 -
		10

¹ Recommended 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

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

Transfer Opportunities

Articulation agreements are available for students to complete the Associate Degree and transfer to University of Pittsburgh. It is important that students consult with a counselor early in their program to develop a course plan most appropriate for the school to which they intend to transfer. See www.ccac.edu/articulation for details.

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.anfponline.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.

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.

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	3-4
		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	3
		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	3
		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	3
		15

Minimum Credits to Graduate

67-68

Magnetic Resonance Imaging (MRI Scanning) (446.2)

BOYCE
DIPLOMA

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.arrt.org

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.

- Operate magnetic resonance imaging scanners safely to meet standardized protocols under the direction of a radiologist.
- Perform equipment manipulation functions to produce quality magnetic MRI images.
- Employ professional characteristics required by the radiologic technology profession.

DIPLOMA 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 Therapist (443.2)

BOYCE
ASSOCIATE OF SCIENCE

This program is designed to prepare students for a career in professional massage therapy. Graduates of the comprehensive associate of science degree program are eligible to apply for licensure as a massage therapist in Pennsylvania. Completion of the degree program prepares students to be proficient at communicating effectively with clients, families and other healthcare practitioners, assessing client needs, as well as designing and implementing evidence-based, client-specific massage therapy approaches. Graduates of the degree program learn advanced soft tissue interventions for clinical and spa environments.

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 resorts and country clubs, beauty salons, dance studios and on cruise ships.

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. Applicants must be eligible for all college-level courses. All applicable credits earned from other schools must be transferred in to CCAC to appear on one transcript which is sent to the PA State Board of Massage Therapy upon graduation.

Upon successful completion of the program, the graduate will:

- Plan, organize and perform an effective massage and bodywork session for therapeutic benefit.
- Display skill in developing professional and ethical relationships with clients and interdisciplinary health care teams.
- Evaluate forms of business ownership and develop a strategy for a successful practice, business or employment situation.

- Identify and implement strategies for self-care, personal health and wellness and on-going professional development.
- Apply evidence-based practices of massage therapy within scope of practice.

Completion of the program qualifies the graduate to sit for the Massage and Bodywork Licensing Exam (MBLEx). Completion of the program will also provide the education requirement needed for graduates to later pursue the advanced credential certification through the National Certification Board for Therapeutic Massage and Bodywork.

Because certification and licensing requirement vary by state, students who plan to relocate after graduation are encouraged to verify the educational requirements in states other than Pennsylvania.

A criminal record 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. Applicants must submit a criminal background check for acceptance into the program.

** This program is currently seeking accreditation candidacy with the Commission on Massage Therapy Accreditation (COMTA).*

DEGREE REQUIREMENTS

First Semester		Credits
ALH-140	Medical Terminology	3
BIO-103	Introduction to Human Biology	3
MAS-101	Massage Therapy Principles & Procedures 1	4
PSY-101	Introduction to Psychology	3
	Computer Information Technology Elective	1-4
		14-17

Second Semester		Credits
ENG-101	English Composition 1	3
HPE-171	Personal & Community Health & Wellness	3
MAS-102	Massage Therapy Principles & Procedures 2	5
MAS-110	Musculoskeletal Palpation for Massage Therapy	2
MAS-111	Pathology for Massage Therapy	3
		16

Third Semester		Credits
ENG-102	English Composition 2	3
MAS-201	Massage Therapy Principles & Procedures 3	5
MAS-208	Assessment for Massage Therapy	3
MAS-211L	Massage Therapy Applications	1
	General Elective	3
		15

Fourth Semester		Credits
MAS-203	Massage Therapy Modalities 1	2
MAS-204	Massage Therapy Modalities 2	2
MAS-212C	Massage Therapy Externship	1
MAS-220	Massage Therapy Seminar	1
MAT-195	Business Mathematics	3
	General Elective	3
	Humanities Elective ¹	3
		15

Minimum Credits to Graduate 60-63

¹ Recommend SPH-101 Oral Communication

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.
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
		17

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.

- 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.

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
		13
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	5
PHL-205	Medical Ethics & Law	3
		15
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
		11
Minimum Credits to Graduate		39

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 programs 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 program has been placed on Probationary Accreditation as of September 18, 2015. Probationary accreditation is a temporary status of accreditation imposed when a program does not continue to meet accreditation standards but should be able to meet them within a specified time.

The Medical Assistant Program is accredited by the Commission Accreditation of the Allied Health Education Programs (CAAHEP) upon recommendation of the Medical Assisting Education Review Board (MAERB). CAAHEP is located at 25400 U.S. Highway 19 North, Suite 158, Clearwater, FL 33763; 727.210.2350, www.caahep.org.

The Medical Assistant Education Review Board (MAERB) is a Committee on Accreditation of Allied Health Programs (CAAHEP). As of the 2015 Annual Report Form (ARF), the Medical Assisting program at Community College of Allegheny County has a job placement rate average of 68.66% over the past five years. Graduates are eligible to apply for the national examination for the CMA (Certified Medical Assistant) credential.

Upon successful completion of the program, the graduate will:

- Perform clinical procedures related to patient examinations and assist the physician throughout the exam.
- Prepare blood and body fluid specimens for analysis according to industry standards.
- Communicate effectively orally and in writing.
- Perform administrative functions related to medical business practices.
- 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 program has been placed on Probationary Accreditation as of September 18, 2015. Probationary accreditation is a temporary status of accreditation imposed when a program does not continue to meet accreditation standards but should be able to meet them within a specified time.

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Assisting Education Review Board (MAERB). CAAHEP is located at 25400 U.S. Highway 19 North, Suite 158, Clearwater, FL 33763; 727.210.2350, www.caahep.org.

The Medical Assistant Education Review Board (MAERB) is a Committee on Accreditation of Allied Health Programs (CAAHEP). As of the 2015 Annual Report Form (ARF), the Medical Assisting program at Community College of Allegheny County has a job placement rate average of 68.66% over the past five years. Graduates are eligible to apply for the national examination for the CMA (Certified Medical Assistant) credential.

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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.

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	4
		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	2
		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, www.naacls.org.

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	4
		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	3
		18
Summer		
Humanities Elective		3
		3
Third Semester		
MLT-152	Clinical Microbiology 2	5
MLT-220	Clinical Hematology	4
MLT-225	Clinical Immunohematology	4
Mathematics Elective		3-4
		16-17
Fourth Semester		
MLT-250	Clinical Laboratory Seminar	3
MLT-251	Clinical Lab Externship	12
		15
Minimum Credits to Graduate		70-71

¹ Successful 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.

Graduates are eligible to take the National Examination as Medical Laboratory Assistants (ASCP).

This program is approved by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), 5600 N. River Road, Suite 720, Rosemont, IL 60018-5119, 773.714.8880, www.naacls.org.

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.

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, www.naacls.org.

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	3
		6
Second Semester (e.g. Fall)		Credits
BIO-103	Introduction to Human Biology	3
MLT-111	Clinical Laboratory Techniques 1	4
		7

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**

¹ If student already completed *ENG-100* or tested into *ENG-101*

² New Courses include *MLA-101*, *MLA-102*, and *MLA-404*

³ Co-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.

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.

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

40

(with a minimum of 1,160 clinical hours)

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.

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		Credits
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		Credits
BIO-175	Microbiology	4
		4
Third Semester		Credits
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		Credits
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

¹ Prerequisite to *BIO-161 Anatomy & Physiology 1: BIO-110 Introduction to Biological Science* or *BIO-151 General Biology 1* or Biology Waiver Exam.

² Effective 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.

Transfer Opportunities

Articulation agreements allow CCAC graduates to pursue the RN to BSN degree at various colleges and universities, including California University of PA, Capella University, Carlow University, Chatham University, Drexel University Online, Duquesne University, Edinboro University, Grand Canyon University, La Roche College, PSU Commonwealth Campuses and Slippery Rock University. Additionally, CCAC. Students who transfer to California University of PA may participate in the collaborative partnership with CALU by taking all courses at the South Campus. Nursing students may apply for the Joint Admissions program with Carlow University, whereby students are admitted to Carlow and may participate in college courses and activities while still attending CCAC. It is important that students consult with a counselor early in their program to develop a course plan most appropriate for the school to which they intend to transfer. See www.ccac.edu/articulation for details.

Advanced Standing Opportunities

Students applying for the LPN–RN transition program must have a current, valid LPN license from the state of Pennsylvania at the time of application.

If accepted, LPN License holders will be awarded 8 credits for *NUR-110* & *NUR-120* (8 credits).

Credits will be posted after successful completion of *NUR-130* and *NUR-140* (next level courses).

For complete details regarding the LPN–RN transition program, see www.ccac.edu/LPN_to_RN.aspx.

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	1
		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	3
		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	1
		14
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	3
		15
Summer		
OTA-221	OT Fieldwork 2A ²	5
OTA-222	OT Fieldwork 2B ²	5
		10
Minimum Credits to Graduate		71

¹ Recommended 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 (533.2)

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.

This 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 also 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 are required.

Students must also meet pre-program requirements, which include the successful completion to *BIO-151 General Biology 1* or *BIO-110 Introduction to Biological Science*.

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 accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), 25400 U.S. Highway 19 North, Suite 158, Clearwater, FL 33763; 727.210.2350, www.caahep.org upon the recommendation of the Committee on Accreditation of Educational Programs for the 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

		Credits
First Semester		
BIO-161	Anatomy & Physiology 1	4
PAM-101	Foundations of Paramedic Practice	4
PAM-102	Airway Management & Pharmacology	5
PAM-112	Paramedic Clinical 1	1
		14
Second Semester		
BIO-162	Anatomy & Physiology 2	4
PAM-103	Cardiology & Pulmonology	5
PAM-104	Shock & Trauma	4
PAM-105	Special Patient Populations	3
PAM-116	Paramedic Clinical 2	2
		18
Summer		
ENG-101	English Composition 1	3
PSY-101	Introduction to Psychology	3
		6
Third Semester		
PAM-201	Medical Emergencies	5
PAM-202	Integrated Paramedic Concepts	4
PAM-213	Paramedic Clinical 3	1
PAM-214	Paramedic Field Externship	4
		14
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		65-68

¹ Recommended CIT Elective: *CIT-100 Computer Fundamentals and Applications* or *CIT-615 Computer Applications in Health Care*

² MAT-100 or higher. *MAT-195 Business Math* is suggested for non-transfer students

Paramedic (534.2)

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. Students must also meet pre-program requirements, which include the successful completion to *BIO-151 General Biology 1* or *BIO-110 Introduction to Biological Science*. 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.

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 accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), 25400 U.S. Highway 19 North, Suite 158, Clearwater, FL 33763; 727.210.2350, www.caahep.org upon the recommendation of the Committee on Accreditation of Educational Programs for the 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-161	Anatomy & Physiology 1	4
PAM-101	Foundations of Paramedic Practice	4
PAM-102	Airway Management & Pharmacology	5
PAM-112	Paramedic Clinical 1	1
		14

Second Semester

BIO-162	Anatomy & Physiology 2	4
PAM-103	Cardiology & Pulmonology	5
PAM-104	Shock & Trauma	4
PAM-105	Special Patient Populations	3
PAM-116	Paramedic Clinical 2	2
		18

Third Semester

PAM-201	Medical Emergencies	5
PAM-202	Integrated Paramedic Concepts	4
PAM-213	Paramedic Clinical 3	1
PAM-214	Paramedic Field Externship	4
		14
Minimum Credits to Graduate		46

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/Accreditation Council for Pharmacy Education (ASHP/ACPE) 7272 Wisconsin Avenue, Bethesda, MD 20814; 301.664.8712, www.ashp.org.

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	3
		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	2
		14

Third Semester

PHT-106	Pharmacy Product Preparation 3	2
PHT-201	Pharmacy Tech Externship	6
PHT-203	Pharmacy Seminar	2
		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	1–2
		11–12

Fifth Semester

BUS-210	Principles of Retailing	3
ENG-102	English Composition	3
	Humanities Elective	3
	Social Science Elective	3
		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/Accreditation Council for Pharmacy Education (ASHP/ACPE), 7272 Wisconsin Avenue, Bethesda, MD 20814; 301.664.8712, www.ashp.org.

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
		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	2
		14

Third Semester

PHT-106	Pharmacy Product Preparation 3	2
PHT-201	Pharmacy Technician Externship	6
PHT-203	Pharmacy Seminar	2
		10

Minimum Credits to Graduate 40

Phlebotomist (513.2)

ALLEGHENY, BOYCE, SOUTH DIPLOMA

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.

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.

DIPLOMA 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 (628.2)

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 715 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, 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 submit separate application to be considered for program admission. 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 or completion of the Biology Waiver Examination. Exception: Anatomy & Physiology 1 and/or 2 successfully completed.

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 Physical Therapist Assistants (NPTE-PTA) administered by the Federation of State Boards of Physical Therapy (FSBPT).

[A felony conviction may affect a graduate's ability to take the National Physical Therapy Examination for Physical Therapist Assistants (NPTE-PTA).]

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 (NPTE-PTA) 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

Program Pre-Requisite Course ¹	Credits
BIO-110 Introduction to Biological Science or	4
BIO-151 General Biology 1	4
	4

First Semester

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	4
	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-112C Introduction to Physical Therapy Clinical Education	1
HPE- Health & Physical Education Elective	1-2
	17-18

Summer

MAT- Mathematics Elective (MAT level 100 or higher but not MAT-195)	3-4
	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	3
PTA-211C Physical Therapy Clinical Education 1	2
SPH-101 Oral Communications	3
	18

Fourth Semester

PTA-212C Physical Therapy Clinical Education 2 ²	5
PTA-213C Physical Therapy Clinical Education 3 ²	5
PTA-215 Physical Therapy Professional Exploration ²	2
	12

Minimum Credits to Graduate

67-69

- ¹ Graduation from the Physical Therapy Assistant Program requires a letter grade of "C" or better in all courses listed in the program of studies.
- ² All academic coursework (all coursework in PTA Program of Studies) must be completed prior to enrolling in Fourth Semester PTA courses: PTA-212, PTA-213 and PTA-215.

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, www.jrcert.org.

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, www.jrcert.org.

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	1-2
		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	3
		18
Summer		
PHY-100	Basic Physics	4
RAD-158	Radiologic Technology Clinical 2	4
		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	3
		14
Fourth Semester		
RAD-217	Radiologic Technology 4	4
RAD-218	Radiologic Technology Clinical 4	8
		12
Summer		
RAD-258	Radiologic Technology Clinical 5	4
		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.

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	9
		15
Fourth Semester		
RES-212	Respiratory Therapist Clinical 2	12
	Humanities Elective	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 ((CAAHEP) 25400 U.S. Highway 19 North, Suite 158, Clearwater, Florida 33763; 727.210.2350, www.caahep.org) upon the recommendation of the Accreditation Review Council on Education in Surgical Technology and Surgical Assisting (ARC/STSA).

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	5
		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	6
		20

Third Semester

BIO-161	Anatomy & Physiology 1	4
SUR-230	Surgical Technology 3	7
SUR-231	Surgical Technology Clinical 1	6
		17

Fourth Semester

BIO-162	Anatomy & Physiology 2	4
SUR-240	Surgical Technology 4	6
SUR-241	Surgical Technology Clinical 2	6
		16

Minimum Credits to Graduate 71

¹ Indicates 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 ((CAAHEP) 25400 U.S. Highway 19 North, Suite 158, Clearwater, Florida 33763; 727.210.2350, www.caahep.org) upon the recommendation of the Accreditation Review Council on Education in Surgical Technology and Surgical Assisting (ARC/STSA).

CERTIFICATE REQUIREMENTS

		Credits
First Semester		
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

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/>



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.

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.pacollegegettransfer.com/PATRAC.

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

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)

Mobile Apps Software Development
(787) (Certificate)

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)

¹ University parallel program

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

Transfer Opportunities

Articulation agreements are available for students to complete the Associate Degree and transfer to California University of PA and Clarion University. It is important that students consult with a counselor early in their program to develop a course plan most appropriate for the school to which they intend to transfer. See www.ccac.edu/articulation for details.

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**

¹ Required 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:

² For 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

³ For 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.

Transfer Opportunities

The keystone icon indicates that this particular CCAC program is a Pennsylvania Transfer and Articulation Center (TAOC) approved Associate Degree program. All credits earned in this program are accepted by any state system college in Pennsylvania that offers a Bachelor's degree in Biology, including California University of PA, Carlow University, Clarion University, Edinboro University, Indiana University of PA, and Slippery Rock University.

Other articulation agreements are available for students to complete the Associate Degree and transfer to Point Park University, Robert Morris University and Westminster College. It is important that students consult with a counselor early in their program to develop a course plan most appropriate for the school to which they intend to transfer. See www.ccac.edu/articulation for details.

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**

¹ Internship may be started any time after taking *Biotechnology Laboratory 1 (BTC-101)* and consists of 120 hours in a lab.

**(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

¹ Internship may be started any time after taking *Biotechnology Laboratory 1 (BTC-101)* and consists of 120 hours in a lab.

Transfer Opportunities

Articulation agreements are available for students to complete the Associate Degree and transfer to Point Park University. It is important that students consult with a counselor early in their program to develop a course plan most appropriate for the school to which they intend to transfer. See www.ccac.edu/articulation for details.

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

¹ Internship 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)

ASSOCIATE OF SCIENCE
ALLEGHENY, BOYCE, NORTH, SOUTH

This program prepares the student with a broad college background and skill and knowledge in 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, bioorganic and organic chemical compounds using the IUPAC system of nomenclature.
5. Make use of dimensional analysis to solve chemical calculation problems.

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	3

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

15**Third Semester**

CHM-201	Organic Chemistry 1	4
MAT-202	Calculus 2	4
PHY-222	Physics for Science & Engineering 2	4
	Humanities Elective	3

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	3

15**Minimum Credits to Graduate****62****Transfer Opportunities**

The keystone icon indicates that this particular CCAC program is a Pennsylvania Transfer and Articulation Center (TAOC) approved Associate Degree program. All credits earned in this program are accepted by any state system college in Pennsylvania that offers a Bachelor's degree in Chemistry, including California University of PA, Carlow University, Clarion University, Edinboro University, Indiana University of PA, and Slippery Rock University.

Other articulation agreements are available for students to complete the Associate Degree and transfer to La Roche College, Robert Morris University. It is important that students consult with a counselor early in their program to develop a course plan most appropriate for the school to which they intend to transfer. See www.ccac.edu/articulation for details.

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	3

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	3

18**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	3

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	4

19**Minimum Credits to Graduate****73****Transfer Opportunities**

Articulation agreements are available for students to complete the Associate Degree and transfer to California University of PA and Clarion University. It is important that students consult with a counselor early in their program to develop a course plan most appropriate for the school to which they intend to transfer. See www.ccac.edu/articulation for details.

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 not 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	4
		16

Second Semester		Credits
CET-140	Site Plan Drafting	3
CET-201	Materials of Construction	4
EDD-121	Computer-assisting Drafting Applications	4
EGR-111	Route Surveying	4
		15

Minimum Credits to Graduate 31

COMPUTER INFORMATION TECHNOLOGY PROGRAMS

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	1
		8

Second Semester		Credits
CIT-140	Office Productivity Applications	4
CIT-142	Desktop Publishing Concepts	3
CIT-602	Presentation Graphics: PowerPoint	1
		8

Third Semester		Credits
BUS-140	Introduction to E-commerce	3
CIT-206	Administrative Technology & Procedures	3
CIT-607	Office Management: Outlook	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.

- Demonstrate computer forensic investigation skills using computer forensic hardware and software tools.
- Describe the fundamentals of the criminal justice system, search and seizure and evidence evaluation and court procedures, regarding computer and digital evidence.
- Apply critical thinking skills, problem solving skills and observe professional ethics in case and data analysis.
- 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.

CERTIFICATE REQUIREMENTS

First Semester		Credits
CIT-115	Introduction to Information Technology ¹	3
CJC-203	Evidence & Procedures	3
		6
Second Semester		
CIT-180	Computer Forensics 1	3
CIT-181	Principles of Information Security	4
		7
Third Semester		
CIT-280	Computer Forensics 2	4
CIT-281	Project in Computer Forensics	2
		6
Minimum Credits to Graduate		19

¹ Students with an IT background may have the option to petition for a waiver or substitute for *CIT-115*.

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:

- apply core principles and practices of computing;
- utilize conventional terminology related to computer and information science;
- collect information and carry out research using relevant and appropriate sources; and
- 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	3
		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	3-4
		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	3
		15-17
Fourth Semester		
	CIT Restricted Elective ²	3-4
	General Elective (3) ¹	9
	Humanities Elective	3
		15-16
Minimum Credits to Graduate		61-68

¹ Mathematics 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.

² CIT 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

Transfer Opportunities

Articulation agreements are available for students to complete the Associate Degree and transfer to California University of PA, Capella University, La Roche College, PA College of Technology, PSU Commonwealth Campuses, Robert Morris University. It is important that students consult with a counselor early in their program to develop a course plan most appropriate for the school to which they intend to transfer. See www.ccac.edu/articulation for details.

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	3-4
		15-16

Second Semester		Credits
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	3
		17

Third Semester		Credits
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	3
		15-17

Fourth Semester		Credits
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	3-4
		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	3
		6

Second Semester		Credits
CIT-180	Computer Forensics 1	3
CIT-181	Principles of Information Security	4
CIT-185	Network Security	3
CIT-186	Intrusion Detection and Prevention	3
		13

Third Semester		Credits
CIT-282	Advanced Cybersecurity Topics	3
CIT-285	Cybersecurity Capstone	3
		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	3-4

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	3-4

16-17

Third Semester

CIT-205	Help Desk & User Support	3
	CIT Restricted Elective ¹	3
	CIT Restricted Elective ¹	4
	Science Elective	3-4

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	3

16-18

Minimum Credits to Graduate

61-66

¹ CIT 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

Transfer Opportunities

Articulation agreements are available for students to complete the Associate Degree and transfer to Clarion University and PA College of Technology. It is important that students consult with a counselor early in their program to develop a course plan most appropriate for the school to which they intend to transfer. See www.ccac.edu/articulation for details.

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

		Credits
First Semester		
CIT-120	Networking	3
CIT-150	PC Components & Operating Systems	3
		6
Second Semester		
	CIT Restricted Elective ¹	3
	CIT Restricted Elective ¹	3-4
	CIT Restricted Elective ¹	3-4
		9-11
Third Semester		
CIT-205	Help Desk & User Support	3
CIT-215	Systems Analysis & Design	3
	CIT Restricted Elective ¹	4
		10
Minimum Credits to Graduate		25-27

¹ CIT 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-Mobile Apps Software Development (787)

ALLEGHENY, BOYCE, NORTH, SOUTH
CERTIFICATE

This program provides students with specific technical skills in the area of mobile applications (apps) software development. The program addresses individuals with a technical orientation, as well as college graduates from other fields, interested in a career in mobile apps software development. This certificate program will provide students with specific technical competencies for employment in various areas in the information technology field, including mobile apps software developers, mobile apps software programmers, software development consultants, as well as UI (User Interface) software developers.

Students obtain a foundation in object-oriented computer programming, as well as knowledge and technical skills in mobile operating systems development, including Android and iOS.

Upon successful completion of the program, the graduate will:

1. Implement troubleshooting strategies and techniques in correcting a variety of information technology design issues and problems.
2. Apply various software development tools to create graphical user interfaces, websites and mobile apps.
3. Design websites to display on various mobile devices and screens.
4. Develop the necessary technical and problem solving skills in creating apps for mobile devices by implementing Android and iOS operating system frameworks and object-oriented programming languages.
5. Acquire the necessary technical skills to work with data from a variety of sources, including databases and web services.
6. Develop the necessary technical skills in publishing apps.

Prerequisites to the certificate program

Students are assumed to have either taken *CIT-111 Introduction to Programming: JAVA* and *CIT-115 Introduction to Information Technology* or demonstrate equivalent experience or knowledge prior to starting this certificate program.

Students must also have access to computer systems running the Android operating system, as well as the iOS operating system.

CERTIFICATE REQUIREMENTS

First Semester		Credits
CIT-116	Mobile Apps Visual Development	3
CIT-125	Web Development	3
CIT-130	Object-Oriented Programming 1: Java	4

10

Second Semester

CIT-135	Mobile Apps Programming 1	3
CIT-244	Object-Oriented Programming 2: Java	4

7

Third Semester

CIT-265	Mobile Apps Programming 2	4
CIT-266	Mobile Apps Programming using iOS	4
CIT-267	Mobile Apps Software Development Capstone ¹	3

11

Minimum Credits to Graduate

28

¹ CIT-267 must be taken in the final semester

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	3

16

Second Semester

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	3
		16

Third Semester

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	3
		16

Fourth Semester

CIT-245	Data Structures & Programming C++	4
ENG-102	English Composition 2	3
MMC-270	Maya for Gaming 2	3
PHY-141	Physics 1	4
		14

Minimum Credits to Graduate **62**

¹ The 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		Credits
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
		12
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
		15
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		3–4
		16–17

Second Semester

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	3

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	3–4

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	3

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

Transfer Opportunities

Articulation agreements are available for students to complete the Associate Degree and transfer to Clarion University and PA College of Technology. It is important that students consult with a counselor early in their program to develop a course plan most appropriate for the school to which they intend to transfer. See www.ccac.edu/articulation for details.

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

¹ CIT 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		Credits
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		Credits
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		Credits
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
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¹ EDD-141 and above are permitted drafting electives.

² Technical Electives

CET	Civil Engineering Technology courses
EDD	Engineering Drafting & Design courses
EGR	Engineering Science courses
MET	Mechanical Engineering Technology courses
MFT	Manufacturing Technology courses

Transfer Opportunities

Articulation agreements are available for students to complete the Associate Degree and transfer to California University of PA and Clarion University. It is important that students consult with a counselor early in their program to develop a course plan most appropriate for the school to which they intend to transfer. See www.ccac.edu/articulation for details.

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		Credits
EDD-121	Computer-assisted Drafting Applications	4
SET-105	Technical Computing	3
	Technical Electives ¹	6
		13

Minimum Credits to Graduate	26
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¹ Technical 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		Credits
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

Third Semester		Credits
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		Credits
EET-202	Electronics 2	4
EET-240	Electrical Power & Motors	4
MIT-240	Scientific & Industrial Instrumentation	3
	Social Science Elective	3
	Technical Elective ¹	3-4
		17-18

Minimum Credits to Graduate 69-70

¹ Technical Electives		Credits
MIT-103	Fundamentals of Microprocessors	3
MIT-104	Introduction to Microcontrollers	3
RBT-225	Robotics Control Systems	4
RBT-235	Programmable Logic Controllers	4

Transfer Opportunities

Articulation agreements are available for students to complete

the Associate Degree and transfer to Clarion University. It is important that students consult with a counselor early in their program to develop a course plan most appropriate for the school to which they intend to transfer. See www.ccac.edu/articulation for details.

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	3
		13

Second Semester		Credits
EET-201	Electronics 1	4
EET-213	Electronic Instruments	4
MIT-103	Fundamentals of Microprocessors	3
MIT-208	Digital Electronics	3
		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)	6
		14

Second Semester		Credits
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	3
		17-18

Third Semester		Credits
MAT-250	Calculus 3	4
PHY-222	Physics for Science & Engineering 2	4
	Humanities Elective	3
	Restricted Electives ² (2)	6-8
		17-19

Fourth Semester		Credits
MAT-251	Differential Equations	3
PHY-223	Physics for Science & Engineering	3-4
	Restricted Electives ² (2)	6-8
	Social Science Elective	3
		16-18

Minimum Credits to Graduate	64-69
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¹ General 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.

² Restricted 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

Transfer Opportunities

Articulation agreements are available for students to complete the Associate Degree and transfer to Clarion University and Robert Morris University. It is important that students consult with a counselor early in their program to develop a course plan most appropriate for the school to which they intend to transfer. See www.ccac.edu/articulation for details.

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

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.

DEGREE REQUIREMENTS**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	3
		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	3
		18

Third Semester

CET-201	Materials of Construction	4
EGR-110	Engineering Surveying	4
MAT-202	Calculus 2	4
MET-150	Statics	4
		16

Fourth Semester

CET-202	Soils in Construction	4
ENG-102	English Composition 2	3
MET-211	Strength of Materials	4
	Humanities Elective	3
		14

Minimum Credits to Graduate**63****(B) Electrical Engineering Technology**

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.

DEGREE REQUIREMENTS**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**

Mechanical engineers design, develop, build and test mechanical and thermal devices, including tools, engines and machines. Mechanical engineering technicians assist mechanical engineers.

DEGREE REQUIREMENTS**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****Transfer Opportunities**

Articulation agreements are available for students to complete the Associate Degree and transfer to Clarion University. It is important that students consult with a counselor early in their program to develop a course plan most appropriate for the school to which they intend to transfer. See www.ccac.edu/articulation for details.

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.

CERTIFICATE REQUIREMENTS

First Semester		Credits
CET-201	Construction Materials	4
MET-130	Introduction to Renewable Energy Systems	4
SET-100	Introduction to Engineering Technology	3
		11

Second Semester

CET-215	Site Plan Development	4
MET-115	Architectural Systems Design	3
MET-220	Green & Sustainable Buildings	4
		11

Minimum Credits to Graduate **22**

Advanced Standing Opportunities

Students who have completed the CCAC non-credit program in Renewable Energy Certificate will be awarded 4 credits for *MET-130 Introduction to Renewable Energy Systems*.

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	3
		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	3
		7

Third Semester

MFT-147	Introduction to Grinding Operations	3
MFT-149	Fundamentals of Computer Controlled Machining	3
		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.

- Analyze the performance of specific manufacturing equipment with respect to defined automation problems.
- Analyze and break down a manufacturing problem and develop work cell applications to accomplish an assembly process.
- 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, students 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	3
	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	3
	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	4
	14

Fourth Semester

MET-170 Fluid Power	4
RBT-225 Robotics Control Systems	4
Humanities Elective	3
Social Science Elective	3
	14

Minimum Credits to Graduate 62

(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	3
	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	3
	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	3
	16

Fourth Semester

EDD-135 Introduction to Parametric Modeling	3
ENG-103 Technical Communications	3
MET-112 Engineering Materials	4
MFT-149 Fundamentals of Computer Controlled Machining	3
Humanities Elective	3
	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	3
	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	3
	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	3
		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	3
		16

Minimum Credits to Graduate 64

(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	3
		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	3
		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	3
		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	3
		18

Minimum Credits to Graduate 66

Transfer Opportunities

Articulation agreements are available for students to complete the Associate Degree and transfer to Clarion University. It is important that students consult with a counselor early in their program to develop a course plan most appropriate for the school to which they intend to transfer. See www.ccac.edu/articulation for details.

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	3-4
		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	3-4
		15-18

Third Semester

SPH-101	Oral Communication	3
	Humanities Elective	3
	Major Field Electives ¹ (2)	6-8
	Social Science Elective	3
		15-17

Fourth Semester

	General Electives	6
	Major Field Electives ¹ (3)	9-12
		15-18
Minimum Credits to Graduate		60-70

¹ Concentration 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.

Transfer Opportunities

Articulation agreements are available for students to complete the Associate Degree and transfer to PSU Commonwealth Campuses and Robert Morris University. It is important that students consult with a counselor early in their program to develop a course plan most appropriate for the school to which they intend to transfer. See www.ccac.edu/articulation for details.

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	3
		15
Second Semester		Credits
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	3
		18

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

Transfer Opportunities

Articulation agreements are available for students to complete the Associate Degree and transfer to Clarion University. It is important that students consult with a counselor early in their program to develop a course plan most appropriate for the school to which they intend to transfer. See www.ccac.edu/articulation for details.

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.

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	3
		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	3
		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	3
		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	3
		18

Minimum Credits to Graduate 69

Transfer Opportunities

Articulation agreements are available for students to complete the Associate Degree and transfer to Clarion University. It is important that students consult with a counselor early in their program to develop a course plan most appropriate for the school to which they intend to transfer. See www.ccac.edu/articulation for details.

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	3
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	3
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	3
		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	3–4
		14–15
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	3
		18–19
Fourth Semester		
MAT-251	Differential Equations	3
PHY-224	Modern Physics	3
	Restricted Electives ² (3 courses)	9–12
		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.

¹ Restricted CIT Elective		
CIT-145	Programming in C	3
CIT-161	Visual Basic: Windows Programming	4
CIT-245	Data Structures & Programming in C++	4

² Restricted 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

Transfer Opportunities

The keystone icon indicates that this particular CCAC program is a Pennsylvania Transfer and Articulation Center (TAOC) approved Associate Degree program. All credits earned in this program are accepted by any state system college in Pennsylvania that offers a Bachelor's degree in Chemistry, including California University of PA, Carlow University, Clarion University, Edinboro University, Indiana University of PA, and Slippery Rock University. Other articulation agreements are available for students to complete the Associate Degree and transfer to Robert Morris University.

It is important that students consult with a counselor early in their program to develop a course plan most appropriate for the school to which they intend to transfer. See www.ccac.edu/articulation for details.

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.

Transfer Opportunities

For students who wish to further their education at the baccalaureate level, an articulation agreement with Clarion University allows graduates with a trades-related Associate Degree to pursue a bachelor's degree in Technology Leadership. See www.ccac.edu/articulation for details.

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 Technology
(384.2) (Degree)

Facilities Maintenance Technology
(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
(722.1) (Degree)

Mechatronics Technology
(723.1) (Certificate)

Plumber Apprenticeship
(389.1) (Certificate)¹

Plumbing
(365.2) (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: 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.

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	3
		12

Second Semester		Credits
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	3
		15–16

Summer Semester		Credits
ATE-131	Major Engine Service	4
PHS-161	Physical Science for the Industries	3
		7

Third Semester		Credits
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	3
		17

Fourth Semester		Credits
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	1
		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	3
		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	3
		15–16

Summer Semester

ATE-131	Major Engine Service	4
ATE-401	Automotive Co-Op	1
PHS-161	Physical Science for the Industries	3
		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	3
		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	1

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.

CERTIFICATE 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	3
		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
		12

Summer Semester

ATE-131	Major Engine Service	4
ATE-401	Automotive Co-Op	1
		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	1
		12

Fourth Semester

ATE-234	Standard Transmission, Transaxle, Drivetrain	3
ATE-235	Automatic Transmissions/Transaxles	5
WLD-103	Welding Safety & Applications	1
		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	3
		6

Second Semester

BLC-121	Construction Materials & Methods	3
BLC-295	Construction Estimating 2	3
		6

Third Semester

BLC-103	Construction Planning & Control	3
BLC-296	Advanced Computer Estimating	3
		6

Fourth Semester

ENG-101	English Composition 1	3
PHS-161	Physical Science for the Industry	3
		6

Fifth Semester

ENG-103	Technical Communications	3
PSY-116	Organizational Psychology	3
		6

Sixth Semester

BUS-101	Introduction to Business	3
SPH-101	Oral Communication	3
		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, expeditor, 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	3
		6
Second Semester		
BLC-192	Construction Contracting	3
BLC-203	Surveying	3
		6
Third Semester		
BLC-103	Construction Planning & Control	3
BLC-294	Estimating 1	3
		6
Fourth Semester		
ENG-101	English Composition 1	3
PHS-161	Physical Science for the Industries	3
		6
Fifth Semester		
ENG-103	Technical Communication	3
PSY-116	Organizational Psychology	3
		6
Sixth Semester		
BUS-101	Introduction to Business	3
SPH-101	Oral Communication	3
		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	3
		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	3
		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	3
		15
Fourth Semester		
ENG-103	Technical Communications	3
PSY-116	Organizational Psychology	3
	Business Elective	3
	General Electives	6
		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	3
	Computer Information Technology Elective	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

Minimum Credits to Graduate **63–64**

(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	3
	Computer Information Technology Elective	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

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.

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
		16

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

Summer Semester

EDT-220	Summer Internship	3
		3

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
		12

Fourth Semester		
ENG-103	Technical Communications	3
PHY-100	Basic Physics	4
PSY-116	Organizational Psychology	3
	General Elective	3
		13
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.

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 Semester		
EDT-220	Summer Internship	3
		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
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}	7-9
		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}	6-8
		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}	6–8

15–17**Minimum Credits to Graduate****60–66**¹ Restricted 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

² Restricted Electives should be chosen with the assistance of an advisor.**Advanced Standing Opportunities**

Students who have completed the non-credit Mechatronics certificate program will be awarded up to 14 credits for the following courses, which can be used towards the restricted electives of the Facilities Maintenance Technology associate degree.

- *RBT-235* Programmable Logic Controllers
- *MET-170* Fluid Power Systems
- *EET-179* Electrical Power Distribution
- *EET-245* Electric Motor Control

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	5
		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
	Restricted Electives ^{1,2}	7–8
		15–16

Minimum Credits to Graduate**30–31**¹ Restricted 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

² Restricted 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		Credits
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

Third Semester		Credits
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
		17

Fourth Semester		Credits
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
		17

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
		17

Second Semester		Credits
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

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.

- Interpret the information contained on construction grade stakes.
- Communicate effectively using terminology common to the construction industry.
- Give and receive hand signals used in the construction industry.
- 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	6
		12
Second Year		Credits
HEO-105	Heavy Equipment Regulation & Safety 2	5
HEO-106	Equipment Operations 2	6
		11
Third Year		Credits
HEO-201	Heavy Equipment Regulation & Safety 3	4
HEO-202	Equipment Operations 3	7
		11
Fourth Year		Credits
HEO-205	Equipment Operations 4	6
HEO-206	Industry Recertification	5
		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:

- 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.
- Work proficiently in structural steel construction utilizing rigging and hoisting techniques, blueprint reading skills and steel detailing applications.
- 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.
- Construct and assemble all types of curtain wall systems, window wall systems, windows, storefronts and architectural metals.
- 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
		14

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

16

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

15

Minimum Credits to Graduate

45

Mechatronics Technology (722.1)

NORTH
ASSOCIATE OF SCIENCES

The Mechatronics Technology program provides skills and knowledge in four major specializations: mechanical engineering, electrical/ electronic engineering and control systems. Students can pursue specializations through restricted electives. This technology training is relevant to several industries including the 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 will include: production, planning and expediting clerks, maintenance and repair workers, inspectors, testers, sorters, samplers and weighers, instrumentation technicians, robotics technicians, automation engineer technicians, electromechanical 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. 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 *MEC-103*, *MEC-106* and *MEC-156* will be prepared to sit for the Packaging Machinery Manufacturers Institute (PMMI) industry credential: PMMI Mechatronics Industrial Electricity 1. Students who successfully complete *MEC-104* will be prepared to sit for the PMMI Mechatronics: Mechanical Components 1 industry credential. Students who successfully complete *MEC-108* will be prepared to sit for the PMMI Mechatronics: Programmable Logic Controllers 1 industry credential.

DEGREE REQUIREMENTS

First Semester		Credits
MEC-100	Safety and Quality	3
MEC-102	Industrial Processes	3
MEC-103	Fundamentals of Electricity	3
MEC-104	Mechanical Systems	3
MEC-150	Fluid Power	3
		15

Second Semester		Credits
MEC-106	Industrial Power Systems	3
MEC-108	Programmable Logic Controllers 1	3
MEC-110	Digital Electronics	3
MEC-112	Intro to Robotics	3
MEC-156	Motors and Motor Controls	3
		15

Third Semester		Credits
	Restricted Elective ²	3-4
	Restricted Elective ²	3
ENG-101	English Composition 1	3
MAT-191	Mathematics for the Industries or	3
MAT-108	Intermediate Algebra ¹	4
PSY-101	Introduction to Psychology or	3
PSY-116	Organizational Psychology	3
		15-17

Fourth Semester		Credits
	Restricted Elective ²	3-4
ENG-102	English Composition 2 or	3
ENG-103	Technical Communications	3
MEC-208	Programmable Logic Controllers 2	3
PHS-161	Physical Science for the Industries or	3
PHY-141	Physics 1 ¹	3-4
SPH-101	Oral Communications	3
		15-17

Minimum Credits to Graduate 60-64

¹ Students 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	4
PSY-101	Introduction to Psychology	3

² Restricted Electives:

- MEC-204 AC/DC Electronic Drives
- MEC-205 Troubleshooting Advanced Motor Controls
- MEC-211 Process Control
- MEC-221 Robotics & Controls
- MEC-225 Automated Equipment
- MEC-230 Advanced PLC
- MEC-240 Advanced Electrical Circuits
- MEC-245 Electronics in Industry
- WLD-221 Brazing and Welding

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 Certificate (723.1)

NORTH CERTIFICATE

The Mechatronics Technology Program provides skills and knowledge in four major areas: mechanical engineering, electrical engineering/electronic engineering and control systems. This technology training is relevant to several industries including the 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.

3 There are additional, optional certifications students may
3 wish to pursue to enhance their employability. Students who
4 successfully complete *MEC-103*, *MEC-106* and *MEC-156* will
3 be prepared to sit for the Packaging Machinery Manufacturers
3 Institute (PMMI) industry credential: PMMI Mechatronics
3 Industrial Electricity 1. Students who successfully complete
3 *MEC-104* will be prepared to sit for the PMMI Mechatronics:
3 Mechanical Components 1 industry credential. Students who
3 successfully complete *MEC-108* will be prepared to sit for the
3 PMMI Mechatronics: PLC 1 industry credential.

CERTIFICATE REQUIREMENTS

First Semester		Credits
MEC-100	Safety and Quality	3
MEC-102	Industrial Processes	3
MEC-103	Fundamentals of Electricity	3
MEC-104	Mechanical Systems	3
MEC-150	Fluid Power	3
		15

Second Semester		Credits
MEC-106	Industrial Power Systems	3
MEC-108	PLC 1	3
MEC-110	Digital Electronics	3
MEC-112	Intro to Robotics	3
MEC-156	Motors and Motor Controls	3
		15

Minimum Credits to Graduate **30**

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

First Year		Credits
PLT-103	Plumbing 1	2
PLT-115	Mathematics for Plumbing	3
PLT-121	Plumbing Drafting & Blueprint Reading 1	3
WLD-101	Welding Fundamentals	3
		11
Second Year		Credits
PLT-105	Introduction to Plumbing Code	2
PLT-221	Plumbing Drafting & Blueprint Reading 2	1
WLD-102	Advanced Welding	3
		6
Third Year		Credits
PLT-145	Plumbing Code 2	2
PLT-222	Mechanical CAD for Plumbers	3
WLD-196	Welding for Plumbing 1	3
		8
Fourth Year		Credits
PLT-205	Plumbing 4	6
PLT-206	Plumbing Code 3	2
WLD-296	SMAW & Applied Fundamentals	3
		11
Fifth Year		Credits
MMT-208	Backflow Tester Certification.	3
PLT-224	Estimating/CFC	2
PLT-225	Medical Gas	2
WLD-202	MIG & TIG Processes	3
		10
Minimum Credits to Graduate		46

Plumbing (365.2)

CERTIFICATE
NORTH

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 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	1
PLT-101	Plumbing Skills 1	4
PLT-102	Plumbing Measuring and Calculating	2
PLT-106	Plumbing Blueprint Reading	3
WLD-221	Brazing and Welding	3
		13
Second Semester		Credits
PLT-201	Plumbing Skills 2	4
PLT-202	Plumbing Skills 3	4
PLT-204	Maintenance Plumbing	4
		12
Minimum Credits to Graduate		25

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**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**

¹ Students 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.

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.

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

¹ Students 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.

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.

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**¹ Recommended for transfer students² Restricted 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.

- 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
		18
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:

- Demonstrate the technical skills for employment as a welder in the Marcellus Shale industry.
- Apply safety procedures and theory of the Shielded Metal Arc Welding (SMAW) processes.
- Utilize multi-layered welds in different weld joints and weld positions.
- Make a shielded metal-arc weld on schedule 80 pipe in a fixed 6G position.
- 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	3
		9
Second Semester		Credits
WLD-222	Pipe Welding 1 Basic	3
WLD-223	Pipe Welding 2 Advanced	3
		6
Third Semester		Credits
WLD-224	Pipe Welding 3 Downhill	3
		3
Minimum Credits to Graduate		18

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 <i>ENG-102</i>)
ETH201	Music of Black Americans: 1619 to Present
FCL	Foreign Culture & Language (All language courses)
JRN	Journalism
MUS	Music
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 alphascode 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.

Alphascodes for all disciplines taught at CCAC follow.

ACC	Accounting
ALH	Allied Health
ANE	Anesthesiology
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</i> <i>(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	SDS	Student Development Services
PHS	Physical Science	SET	Science & Engineering Technology
PHT	Pharmacy Technician	SHM	Sheet Metal Technology
PHY	Physics	SOC	Sociology
PLT	Plumbing Technology	SOE	Stationary Operating Engineer
POL	Political Science	SOW	Social Work Technology
PSY	Psychology	SPA	Spanish Language & Culture
PTA	Physical Therapist Assistant	SPH	Speech
RAD	Radiologic Technology	STI	Structural Ironworking Technology
RBT	Robotic Technology	SUR	Surgical Technology
RES	Respiratory Therapy Technology	THE	Theatre
RLE	Real Estate	TRV	Tourism Management
RTT	Radiation Therapy Technology	TSA	Transportation Security Administration
RUS	Russian Language & Culture	WLD	Welding Technology

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.

ANESTHESIOLOGY (ANE)

ANE-110 Basic Principles of Anesthesia Technology

4 credits/3 class and 2 lab hours

Prerequisite: Acceptance into the Anesthesia Technician Program

The course is an introduction to anesthesiology's contribution to quality patient care and the relationship of the anesthesia technician to other healthcare professionals. The focus is on patient safety, universal precautions and employee safety in the healthcare environment. An introduction to the theory and concepts of a surgical environment is given including the fundamentals of a variety of anesthesia equipment and basic case set-up utilizing anesthesia supplies.

ANE-111 Basic Anesthesia Equipment

4 credits/2 class and 4 lab hours

Prerequisite: Acceptance into the Anesthesia Technician Program

This course offers an introduction to the theories and concepts in the adequate function of anesthesia equipment including maintaining equipment, repairing defects and trouble-shooting complications. The student will be introduced to basic equipment used for patients while undergoing anesthesia, including airway equipment and hemodynamic monitoring. Introduction to point-of-care testing (POCT) will also be covered.

ANE-113C Anesthesia Technology Clinical 1

1 credits/8 clinical hours

Prerequisite: ANE-110 and ANE-111

Corequisite: ANE-112

This course provides the student an experience in direct observation in the health care setting with a focus on anesthesia technology. Emphasis is placed on beginning professional skills development of an anesthesia technician. This course is graded on a pass/fail basis.

ANE-114 Advanced Principles of Anesthesia Technology

4 credits/2 lecture and 4 lab hours
Prerequisites: ANE-110 and ANE-111
Corequisites: ANE-113

This course covers the theory and concepts of the use and function of anesthesia supplies and equipment used for various surgical procedures to include studies in general, regional and conscious sedations as well as patient positioning. Additional topics are types of anesthesia emergencies, including difficult airways, malignant hyperthermia, hemorrhage and cardiac arrest.

ANE-116 Advanced Anesthesia Equipment

4 credits/2 lecture and 4 lab hours
Prerequisites: ANE-110 and ANE-111
Corequisites: ANE-113

This course provides instruction and lab application to the theories and concepts of advanced anesthesia equipment that are used in complex anesthesia/surgical situations. Topics include invasive monitoring and high-level equipment: thromboelastograph, cell saver, transducers and transesophageal echocardiogram to properly assist with care of a high-risk patient.

ANE-213C Anesthesia Technology Clinical 2

2 credits/8 clinical hours
Prerequisites: ANE-110 and ANE-112
Corequisites: ANE-211 and ANE-212

This clinical experience provides the student with the opportunity to observe and practice the principles of infection control in a surgical setting as well as gain experience with specific anesthesia equipment. The student will observe, obtain and practice specific technical skills. Hands-on experience will provide technical skills and further understanding of the theories taught within the classroom. This course will be graded on a pass/fail basis.

ANE-214 Anesthesia Pharmacology

4 credits/4 lecture hours
Prerequisites: ANE-113, ANE-114 and ANE-116
Corequisites: CHM-109

This course covers the theory and concepts in the proper use and safe practice of delivery and storage of anesthesia medications. Drugs commonly used in the practice of anesthesia will be studied. Emphasis is placed on the proper identification of these drugs by trade and generic names, their basic pharmacological action, and how they are used in a clinical setting.

ANE-220 Professional Issues for the Anesthesia Technologist

2 credits/2 lecture hours
Prerequisites: ANE 213, ANE 214

This course surveys the current trends in anesthesia technology. Emphasis is placed on professional issues such as continuing education, ethical behavior, team functioning and organization of health care institutions.

ANE-221C Anesthesia Technology Clinical 3

5 credits/8 hours a day for 8 weeks clinical
Prerequisite: Successful completion of all academic and clinical 1 & 2 requirements in the Anesthesia Technician Program.

This 8-week, full-time clinical experience takes place in diverse health care settings. This clinical experience will provide the student with the opportunity to observe and practice the entry

level skills with specific anesthesia equipment. The student will observe, obtain and practice at an entry skill level. Hands-on experience will provide technical skills and further application of the theories taught within the classroom. This course is graded on a pass/fail basis. Anesthesia Clinical 3 must be successfully completed before beginning Anesthesia Clinical 4.

ANE-222C Anesthesia Technology Clinical 4

5 credits/8 hours a day for 8 weeks clinical
Prerequisite: Successful completion of all academic and clinical 1 & 2 requirements in the Anesthesia Technician Program.

This 8-week, full-time clinical experience takes place in diverse health care settings. This clinical experience will provide the student with the opportunity to observe and practice the entry level skills with specific anesthesia equipment. The student will observe, obtain and practice at an entry skill level. Hands-on experience will provide technical skills and further application of the theories taught within the classroom. This course is graded on a pass/fail basis. Anesthesia Clinical 3 must be successfully completed before beginning Anesthesia Clinical 4.

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 Americans-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. Possible fieldtrips are 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 CJ 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 every-day 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-177 Applied Digital Photography

3 credits/3 lecture & 5 studio hours

Prerequisites: *ART-144* or *ART-168* or permission of the instructor

This course is for the more experienced student photographer. Topics in this course will include lighting, staging, in-depth camera functions, and post image capture software enhancement techniques. This course will build the students photography portfolio with more applied photography related to the commercial industry.

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-255 Industrial Design and Art

3 credits/3 lecture & 5 studio hours

This course will explore the functional and conceptual applications of industrial design and art. Through traditional and digital renderings, students will create conceptualized artwork through to the finalized hand-formed model or computer controlled additive or subtractive prototype.

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/3 lecture hours

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**ART-292****ART-293****ART-294 Advanced Art Workshop 1, 2, 3, 4**

3 credits/5 studio hours

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 hour

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

Prerequisites: a grade of C or better in ASL 101 or permission of the instructor

This course continues to develop the basic expressive and receptive skills of American Sign Language (ASL). 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 and 1 lab hour

Prerequisite: Grade of C or better in *ASL-102* or permission of the instructor

This course increases the students' basic expressive and receptive skills of American Sign Language. 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 and 1 lab hour

Prerequisite: Grade of C or better in *ASL-201* or permission of the instructor

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-209 Advanced ASL & Cognitive Processing 1

3 credits/3 lecture hours

Prerequisites: a grade of C or better in *ASL-202* or admission to the Interpreter Training Program

This course, taught in American Sign Language (ASL), builds on material learned in *ASL-202*, developing both comprehension and expression in ASL. Students continue learning and using ASL vocabulary, grammatical principles and various intermediate-level discourse features in narratives and presentations in ASL. Issues related to the effects of oppression and discrimination (e.g., audism, racism, sexism), the influence of power and privilege within multicultural and diverse populations, majority and minority culture dynamics, and dynamics of cross-cultural interaction will be explored. To advance to *ASL-210*, the student must complete this course with a grade of C or better.

ASL-210 Advanced ASL & Cognitive Processing 2

3 credits/3 lecture hours

Prerequisites: a grade of C or better in *ASL-209*

This course, taught in American Sign Language (ASL), builds on material learned in *ASL-209*, allowing students to develop advanced comprehension and expression in ASL. Students continue learning and using ASL vocabulary, grammatical principles and a variety of higher-level discourse features in narratives and presentations in ASL. Issues of the effects of special populations within the Deaf community (Deaf-Blind, Intellectual & Developmental Disability (10/00), Mental Health) will be explored, as well as specialized and technical vocabulary for various settings (medical, mental health, sexual signs, signs of drug use, etc.) In addition, issues of social justice as they relate to the Deaf community will be discussed.

ASL-212 American Sign Language Literature

3 credits/2 lecture and 1 lab hour

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 hours

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, troubleshooting 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 distributor-less/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 and 4 lab hours

Prerequisites: 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 pilot certificate in order to successfully complete the course. The FAA required minimum flight hours in this course are 35 hours; however, the actual flight hours may vary based on student proficiency.

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 and 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. The student must pass the FAA instrument pilot practical exam to obtain an instrument rating in order to successfully complete the course. The FAA required minimum flight hours in this course are 35 hours; however, the actual flight hours may vary based on student proficiency.

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/pulsion systems ranging from basic piston engines to sophisticated jet propulsion.

AVT-205 Flight/Commercial 1

4 credits/2 class and 4 lab hours

Prerequisites: 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. The FAA required minimum flight hours in this course are 60 hours; however, the actual flight hours may vary based on student proficiency.

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 and 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. The FAA required minimum flight hours in this course are 60 hours; however, the actual flight hours may vary based on student proficiency.

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

Prerequisites: AVT-105

Corequisite: AVT-220

This course is 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. The student must successfully complete the FAA Multi-Engine Pilot Rating Flight exam. The FAA required minimum flight hours in this course are 10 hours; however, the actual flight hours may vary based on student proficiency.

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

Prerequisites: AVT-215

Corequisite: AVT-250

This course prepares the commercial pilot to meet the FAA 141 flight requirements for the CFI-A certification. The estimated minimum flight hours required in this course are 15 hours, which will cover practice teaching, flight theory and flight maneuvers. However, the actual flight hours may vary based on student proficiency.

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/1 class hour

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. The estimated minimum flight hours required in this course are 10 hours, which will cover practice teaching, flight theory and analysis of flight maneuvers. However, the actual flight hours may vary based on student proficiency.

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

Prerequisites: Eligibility for ENG-100 (or ESL-100) and DVS-101 or DVS-103 (or ESL-101)

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*; and *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 hours

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-bevels, 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.

COMPUTER 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

1 credit/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-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-116 Mobile Apps Visual Development

3 credits/3 class hours

Prerequisite: *CIT-111* or with instructor's permission

This course is an introduction in creating applications (apps) using mobile app visual development software. The focus of the course includes using visual development software tools to create graphical user interfaces, implement computer programming control structures, including object-oriented principles and applications, and design apps that include multimedia technologies.

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

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 Mobile Apps Programming 1

3 credits/3 class hour

Prerequisite: *CIT-130* or with instructor's permission

This course is an introduction in creating applications (apps) using an object-oriented computer programming language and the Android mobile operating system. The focus of the course includes the Integrated Development Environment (IDE) and the Software Development Kit (SDK) technologies, graphical user interfaces, object-oriented computer programming, interactive activity classes and the activity life cycle, programming structures, multimedia applications, persistent data 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-265 Mobile Apps Programming 2

4 credits/4 class hours

Prerequisite: *CIT-135* and *CIT-244* or with instructor's permission

This course is an advanced course in creating mobile applications (apps). The focus of the course includes a review of object-oriented computer programming concepts and applications, the Android mobile operating system, and the activity life cycle. Additional course topics include creating apps that follow effective design principles and writing apps that include multimedia, data structures, database technology and multithreading.

CIT-266 Mobile Apps Programming using iOS

4 credits/4 class hours

Prerequisite: *CIT-135* and *CIT-244* or with instructor's permission

This course is an introduction in creating applications (apps) using an object-oriented computer programming language and the iOS mobile operating system. The focus of the course includes the Integrated Development Environment (IDE) and the Software Development Kit (SDK) technologies, the iOS mobile operating system, visual tools and graphical user interfaces, object-oriented computer programming, multimedia applications, persistent data and Web application publishing.

CIT-267 Mobile Apps Software Development Capstone

3 credits/2 class and 1 lab hour

Prerequisite: Last semester of the CIT certificate or with Instructor's permission

This course, which must be taken in the final semester, is the capstone course in the Mobile Applications (Apps) Software Development program. Students gain comprehensive experience in developing, designing and implementing mobile apps by applying the knowledge, as well as the technical and problem solving skills learned in the program. With the instructor's guidance and approval, students will produce an individual, and a team-based mobile app project that will be used to evaluate the students' competencies in the program.

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, each 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

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

Prerequisite: *CRT-101 and CRT-103*

Corequisite: *CRT-102*

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 using Case Catalyst software 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 offers advanced proficiency in English grammar, usage and punctuation with emphasis on advanced proficiency in editing, proofreading and correction of text in court reporting transcripts. Development of Case CATalyst software skills required in the production of corrected transcripts is also emphasized.

CRT-215 Court Transcription 3

2 credits/2 class hours

Prerequisite: *CRT-211*

This course offers advanced proficiency in formatting and production of spoken language into text as required by several disciplines of the court reporting profession including judicial reporting and captioning (broadcast captioning and CART captioning—Communication Access Realtime Translation). Reinforcement of advanced language skills and advanced skills in the use of Case CATalyst software are integral to the course.

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 /3 class hours

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

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.

CST-121 Central Service Technician Certification Examination Preparation

2 credits/2 class hours

Prerequisite: Current employee in a central service or surgical service department.

This course is designed to prepare the current Central Service Technician and surgical service employee for the certification examination sponsored by the International Association of Healthcare Central Service Material Management (IAHCSMM). The students will be able to expand on their current knowledge of the profession as they are updated to the expanding roles and underlying principles relating to their role as a Central Service Technician. There is a focus on the methods of test taking through discussion and practice tests.

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 hours

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-162, 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-115 Introduction to School Age Program

3 credits/3 class hours

This course provides an introduction to the field of school-age care. Students will explore professional expectations for the field, techniques for programming, teaching and working with school-age children and their families in out-of-school environments. Ten hours of field observation in an after-school/out-of-school setting is required. Students must have three clearances: FBI Fingerprint Clearance, a Pennsylvania State Police Criminal History Clearance and a Pennsylvania Department of Welfare Child Abuse History Clearance and meet the local requirements of the field placement site. This course is aligned with competencies required for the PA School Age Professional Credential.

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 Works/ 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 multi-media 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 DVS-101 or DVS-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 hour

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 SERSAFE 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 and its economic importance. 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 hours

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 1**

6 credits/4 class and 4 lab hours

Prerequisites: *LND-101*, *LND-102*Corequisite: *LND-103*

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 class and 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 Western Civilization from Ancient Times through 1500

3 credits/3 class hours

This course is designed as a survey of the political, economic and social developments of European civilization from ancient times through the rise of the early nation-state.

HIS-102 Western Civilization Since 1500

3 credits/3 class hours

This course is designed as a survey of the political, economic and social developments of European Civilization from the Renaissance to the end of the twentieth century.

HIS-104 United States History from Early Colonization through 1865

3 credits/3 class hours

This course is designed as a survey of political, economic and social developments of the United States from early exploration and settlement through the end of the American Civil War and the onset of Reconstruction.

HIS-105 United States History Since 1865

3 credits/3 class hours

This course is designed as a survey of political, economic and social developments of the United States from the end of the Civil War in 1865 to the beginning of the twenty-first century.

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 contexts 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 decolonization, 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 is designed as an introduction to the basic techniques, methods and theories of historic archaeology. Emphasis is placed on topics from 18th and 19th century North America that provide insights into employing material objects as data for analysis of the past. The methodology of historical research, archaeological excavation and the description and analysis of historical materials are examined.

HIS-222 Pittsburgh: Past, Present and Future

3 credits/3 class hours

This course is a survey of Pittsburgh's role in the Colonial frontier, the westward movement, the development of the Ohio River Valley and

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 and 21st Century.

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 and 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 jujitsu. 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-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 lecture hours

This course provides guidance and recommendations for handling athletic health care situations related to coaching, physical education, fitness and allied health professions. Students receive certifications in Basic Life Support for Healthcare Providers and First Aid from the American Heart Association upon successful completion.

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-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-103 Discourse Analysis and Translation

4 credits/1 lecture & 3 lab hours

Prerequisites: A grade of C or better in *ENG-100*, and admission to the Interpreter Training Program
Corequisites: *ASL-209*

This course serves as an introduction to principles of discourse analysis and translation. Both American Sign Language (ASL) and English source texts will be used to cover a survey of the main theories of translation and interpretation. This course is a foundational skill to later interpreting courses. This course will focus on the mental processing skills including but not limited to: visualization, listening and comprehending, shadowing, paraphrasing, abstracting, dual-task training and cloze skills. Students must pass this course with a grade of C or better in order to progress to *ITP-104*.

ITP-104 Consecutive Interpreting

4 credits/1 lecture & 3 lab hours

Prerequisites: a grade of C or better in *ITP-103*Corequisites: *ASL-210*

This course will further develop students' translation and discourse analysis skills by applying them to consecutive interpretation. Consecutive interpretation skills will lead to greater accuracy in simultaneous interpretation, while allowing students to work on a dynamically equivalent message with less time pressure than simultaneous interpreting. Students will learn to assess their own work for accuracy and equivalence, as well as their peers' work.

ITP-105 Introduction to Interpreting

3 credits/3 lecture hours

This course provides students with an overview of the sign language interpreting field. The history and development of sign language interpreting will be explored, along with trends and issues in the field. Various service models of interpreting will be discussed. Laws governing the provision of interpreting services in the state of Pennsylvania will be addressed, along with issues pertaining to qualifications and certifications. Observations for this course will require students to have approved PA clearances.

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-112 Service Learning

4 credits/1 lecture & 3 lab hours

Prerequisites: a grade of C or better in *ASL-210*

This course is designed to strengthen the student's language and cultural knowledge through direct experience working alongside the local Deaf community. Students will develop and apply a community-based project as a way to work with, rather than for, the community to help to strengthen the Deaf community's presence and rapport with future working interpreters. In this way, the students will develop skills to set appropriate boundaries, work as a member of a team and the ability to listen

to the community members to find out what their needs might be.

ITP-200 Linguistics of ASL and English

3 credits/2 lecture & 1 lab hour

Prerequisites: a grade of C or better in *ASL-210*, a grade of C or better in *ASL-109* or the permission of the instructor.

This course, taught in American Sign Language (ASL), trains students to perform linguistic analyses of ASL and what the parallel structures are in English. Emphasis is placed upon examining phonology, morphology, syntax and contact between English and ASL.

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-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 Ethics and Business of Interpreting

4 credits/3 lecture & 1 lab hour

Prerequisites: a grade of C or better in *ASL-210*

This course, taught in American Sign Language (ASL), will look at the ethical practices of interpreting, identifying ethical behaviors both on and off the job, as well as those that pertain to running an independent business as a freelance interpreter. Demand-Control Schema (D-CS) and Role Space will be used as tools to identify the spectrum of challenges and responses that are possible with an interpreted interaction. Observations for this course will require students to have approved PA clearances.

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-208 Simultaneous Interpreting

4 credits/1 lecture & 3 lab hours
Prerequisites: a grade of C or better in *ITP-104*

Simultaneous interpreting is the process which allows people who do not have the same language or culture to communicate directly across those boundaries using a professional interpreter who are trained to attend to one language while expressing themselves simultaneously in another. In this course, students will draw upon their previous coursework to combine the multiple skill processes needed to produce this type of interpretation. This course will be taught in American Sign Language (ASL). Observations for this course will require students to have approved PA clearances.

ITP-211 NIC & EIPA Test Preparation

2 credits/2 lecture hours
Prerequisites: a grade of C or better in ITP 208, or permission of the instructor

This course, taught in American Sign Language (ASL), will prepare students for the process of working toward certification after they graduate from their interpreter training program. Students will be given exercises and assignments to review the requisite knowledge to pass both the National Interpreter Certification (NIC) knowledge written examination, as well as the performance examination, and the Educational Interpreter's Performance Assessment (EIPA) written and performance examinations. At the end of this course, students should have a clear understanding of the process for both the Registry of Interpreters for the Deaf (RID) and the Pennsylvania interpreter registration law and what is required to be a working interpreter in this state.

ITP-212 Educational Interpreting

4 credits/2 lecture & 2 lab hours
Prerequisites: a grade of C or better in ITP 208

This course, taught in American Sign Language (ASL), will discuss issues related to interpreting in the K-12 classroom. Students will analyze the major transitions from childhood to adolescence to adulthood and the changes required in professional roles, responsibilities and ethical decision-making. This course will compare and contrast working in the community versus K-12 environments, reviewing the testing requirements and state laws governing each setting. Students will interpret educational content and review the requirements for a student who has an Individualized Education Plan (IEP) and what the interpreter's role is in this process.

ITP-250 Practicum and Portfolio

4 credits/1 lecture hour & 180 practicum hours
Prerequisites: completion of all other coursework in the program except for the final semester classes.

This course, taught in American Sign Language (ASL), is a field placement practicum in either the K-12 educational system, or the community under a supervising mentor. The interpreting practicum provides students with the opportunity to experience, understand and gain familiarity with the professional world of interpreting in multiple

settings including K-12, community, Video Relay Service, Video Remote Interpreting, and religious settings. Students will complete 180 hours of supervised observation and interpreting in these settings, in addition to 14 hours of classroom time to meet with the practicum supervisor. The students will also use this time to develop a portfolio of their work to use to market themselves to potential agencies and consumers, as well as a tool to develop a professional development plan for post-graduation. This course will require students to have approved PA clearances.

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 hours
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 hours
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 hours
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 hours
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
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 class hours
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 class hours

Prerequisites: *CIT-155, LND-101, LND-102*

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 class hours

Prerequisites: *CIT-155, LND-101, LND-102*

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, communization, American Association of Petroleum Landmen (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 hours

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 hour

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.

MESSAGE THERAPY (MAS)

MAS-101 Massage Therapy Principles and Procedures 1

4 Credits/2 class and 4 lab hours

Prerequisite: Acceptance into Massage Therapy program

This course provides the history of massage from ancient to modern times. Group discussions 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 also include benefits and precautions for massage and the role of the massage therapist in pain management. Students identify professional boundaries and ethical relationships essential to a successful massage practice. Client screening, assessment and informed consent 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 conclude each lab session. This course requires a per credit health career fee; check the tuition and fee schedule for the current rate.

MAS-102 Massage Therapy Principles/ Procedures 2

5 credits/3 class and 4 lab hours

Prerequisites: *BIO-103 or BIO-115 or BIO-161 and MAS-101*

Corequisites: *MAS-110 or PTA-101 and MAS-111 or BIO-160 or BIO-175 or BIO-241*

This course builds upon the techniques and approaches learned in MAS101 and 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 therapeutic outcomes. Benefits and precautions for chair massage are discussed. Students identify and analyze successful business practices and marketing techniques.

In the laboratory portion of the class, students practice advanced relaxation Swedish system techniques, relevant spa therapies, sports massage and seated massage techniques. To prepare students for possible medical emergencies, this course also provides training and certification in First Aid and Adult & Child CPR. This course requires a per credit health career fee; check the tuition and fee schedule for the current rate.

MAS-110 Musculoskeletal Palpation Massage Therapy

2 Credits/1 class and 2 lab hours

Prerequisite: *MAS-101*

In this course students explore the musculoskeletal system in greater detail. Anatomical and directional terminologies are discussed. Students distinguish various actions of the joints of the body. Students identify bones and bony landmarks of the upper body, lower body and torso. Students incorporate muscle palpation as a direct approach to understanding the origin, insertion and action of the muscles of the upper body, lower body and torso.

MAS-111 Pathology for Massage Therapy

3 credits/3 class hours

Prerequisites: *BIO-103 or BIO-115 or BIO161 and MAS-101*

This course explores the etiology, signs and symptoms, typical allopathic treatments, complementary and alternative treatments and implications of common pathological conditions as they relate to massage. Students define common pathology terminology and analyze the indications and contraindications of various massage applications specific to common conditions. Additionally, students learn to locate and analyze related peer-reviewed research of massage

interventions on specific conditions.

MAS-201 Massage Therapy Principles/ Procedures 3

5 Credits/3 class and 4 lab hours

Prerequisite: *BIO-103 or BIO-115 or BIO-161, MAS-102, MAS-110 or PTA-101 and MAS-111 or BIO-160 or BIO-175 or BIO-241*

This course provides the student with the theory and practical application of deep tissue massage. Students integrate a variety of techniques including trigger point therapy and myofascial release and explore the connection between massage therapy and other disciplines such as psychology, chiropractic and physical therapy. Students contrast the physiologic effects of hydrotherapy treatments and perform application of water, heat, cold and other topical preparations. Students continue to develop communication skills to understand and enhance massage therapy treatment outcomes and client goals.

Laboratory sessions are devoted to application of deep tissue massage and various corrective modalities and techniques used to treat pain caused by myofascial and muscular dysfunction. This course requires a per credit health career fee; check the tuition and fee schedule for the current rate.

MAS-203 Massage Therapy Modalities 1

2 credits/1 class and 2 lab hours

Prerequisites: *MAS-111 or BIO-160 or BIO-175 or BIO-241 and MAS-201*

This course introduces students to adjunctive spa-related therapies. The history and etiquette of spas are discussed. As an adjunct to the healing process students integrate the blending and application of essential oils with aromatherapy. Students differentiate essential oil properties to create an individualized blend for clients and assess the indications and contraindications of common essential oils. Students incorporate safe and sanitary application of hot stones to enhance the Swedish and Deep Tissue massage experiences. Students discuss and apply current trending modalities related to spa therapies.

MAS-204 Massage Therapy Modalities 2

2 credits/1 class and 2 lab hours

Prerequisites: *MAS-111 or BIO-160 or BIO-175 or BIO-241, MAS-201 and MAS-208 or PTA-101*

This course applies the student's knowledge of physiology, pathology and kinesiology to various populations. Students assess the precautions and contraindications for special populations and apply research-based, goal-oriented massage techniques. Interventions specific to athletes, older populations, clients with HIV/AIDS and protocols for musculoskeletal dysfunction are explored.

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-208 Assessment for Massage Therapy

3 credits/2 class 2 lab hours

Prerequisites: *MAS-102, MAS-110 or PTA-101 and MAS-111 or BIO-160 or BIO-175 or BIO-241*

This course prepares the massage therapist student to use an orthopedic assessment protocol to assess, design and implement an individualized therapeutic massage session for clients experiencing pain and dysfunction. Students perform a wide variety of assessment techniques to assess stage, structure and severity. Students apply knowledge of the agonist, antagonist and synergistic relationship of muscles as they relate to the kinesiology of human movement. Students perform massage therapy assessment techniques to evaluate posture, muscle imbalance and movement dysfunction patterns. The laboratory portion of this course focuses on the hands-on performance of range-of-motion assessment, manual muscle resistance testing and region-specific special tests.

MAS-211L Massage Therapy Applications

1 credit/2 lab hours

Prerequisites: *MAS-102, MAS-110 or PTA101 and MAS-111 or BIO-160 or BIO-175 or BIO-241*

This course provides students with practical, direct, hands-on experience in a supervised public lab setting. Under direct supervision of a licensed instructor, students set-up and break-down the staging of the professional environment, interview and screen potential clients for indications, contraindications and obtain informed consent. Students deliver individualized professional relaxation and therapeutic table/chair massages within a given time frame and document findings using Subjective, Objective, Application and Plan (SOAP note) format. Duties include scheduling and confirming client appointments and the sanitation and sterilization of laundry and equipment. Students also complete a journal of their experience. This course require a per credit health career fee; Check the tuition and fee schedule for the current rate.

MAS-212C Massage Therapy Externship

Prerequisites: *MAS-111 or BIO-160 or BIO-175 or BIO-241 MAS-201, MAS-211*

Corequisite: *MAS-220*

This course provides students with practical, hands-on experience in a massage business setting. The student gains experience delivering therapeutic massage to integrate the accumulated knowledge and skills from previous courses and competencies. The externship is supervised on-site by a licensed massage therapist or other appropriate licensed health professional.

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.

MAS-220 Massage Therapy Seminar

1 credit/1 class hour

Prerequisites: *MAS-110 or PTA-101, MAS-111 or BIO-160 or BIO-175 or BIO-241 and MAS-201*

This course prepares students to make the transition from student to professional licensed massage therapist. Students explore the role of the massage therapist within the healthcare profession while discussing clinical experiences. Students identify and evaluate opportunities for continuing education and professional growth through exploration of professional associations and other resources. Academic and practical knowledge are enhanced in preparation for the state licensing examination. Students complete practice licensure examinations resembling the Massage and Bodywork Licensing Examination (MBLEX) and make application to take the required examination.

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-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

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-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 hour

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 (MSSC) 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 hour

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-103 Fundamentals of Electricity

3 credits/3 class hours

This course introduces the students to the fundamentals of direct current (DC) and alternating current (AC) electric circuits. This is accomplished through a series of hands-on exercises performed in the lab. The operation of basic circuit components and their electric quantities are observed by constructing circuits and using a digital multimeter (DMM) to measure then operation. Students will learn how to read a schematic diagram and build series and parallel circuits from these diagrams.

MEC-104 Introduction to Mechanical Systems

3 credits/3 class hours

This course will provide students with the experience and understanding of how to assemble mechanical drive systems that include couplings, shafts, bearings, belt drives, drive trains or gears. This is accomplished through a series of hands-on exercises performed in the lab. Safety, installation, maintenance and repair of these systems will be highlighted.

MEC-106 Industrial Power Systems

3 credits/3 class hours

Prerequisite: *MEC-103*

This course provides a series of hands-on exercises performed in the lab that follows the installation of an industrial power system. This includes reading and understanding schematic prints and completing the installation of an industrial motor system based on a schematic diagram using industry standards.

MEC-108 Programmable Logic Controllers 1

3 credits/3 class hours

This course provides a series of hands-on exercises performed in the lab as an introduction to programmable logic controllers (PLCs). Topics include connecting inputs and outputs to the PLC, writing, downloading and debugging ladder logic programs and troubleshooting existing PLC circuits and programs.

MEC-110 Digital Electronics

3 credits/3 class hours

This course is designed to teach students the basics of digital electronic devices and their applications through a series of hands-on exercises performed in the lab. Logic gates and truth tables will be utilized throughout the course to reinforce digital circuit operations.

MEC-112 Introduction to Robotics

3 credits/3 class hours

Prerequisite: *MEC-103*

This course is designed to introduce the concepts of servo control systems and automation systems used in robotic control systems through a series of hands-on exercises performed in the lab. The student will learn to program various robot models and review work cell safety.

MEC-150 Fluid Power

3 credits/3 class hours

Through a series of hands-on exercises in the lab, this course focuses on the operation of hydraulic and pneumatic systems for power transmission in an industrial application. The student will have the ability to construct, operate and troubleshoot fluid power systems and recognize the schematic symbols for the various hydraulic and pneumatic components.

MEC-156 Motors and Motor Controls

3 credits/3 class hours

Prerequisite: *MEC-103*

This course introduces the basic concepts of single-phase motors, three-phase motors and motor control circuits through a series of hands-on exercises performed in the lab. The student will connect various configurations of motor and motor controls that incorporate circuit protection and operator safety.

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.

MEC-205 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-208 Programmable Logic Controllers 2

3 credits/3 class hours

Prerequisite: *MEC-108*

This course builds on MEC 108 Programmable Logic Controllers 1 (PLC 1) through hands-on experience in the lab. Topics include analog inputs and outputs and PanelView operator interface.

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.

MEC-221 Robotics and Controls

3 credits/3 class hours

Prerequisite: MEC-112

This course builds on MEC 112 Introduction to Robotics through a series of hands-on exercises performed in the lab. Topics covered include frames, advanced program instructions, modifying an existing program and robot setup for production.

MEC-225 Automated Equipment

3 credits/3 class hours

Prerequisite: MEC-221

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 (EOAT) are studied through a series of hands-on exercises performed in the lab to understand their operation and develop troubleshooting techniques.

MEC-230 Advanced Programmable Logic Controllers

3 credits/3 class hours

Prerequisite: MEC-208

This course builds on the topics covered in MEC 208 Programmable Logic Controllers 2 (PLC 2) through a series of hands-on exercises performed in the lab. Various types of PLC hardware will be utilized and interfaced with industrial-quality components. Activities will focus on the fundamentals of a complete mechatronics system.

MEC-240 Advanced Electrical Circuits

3 credits/3 class hours

Prerequisite: MEC-103

This course covers the analysis of single- and three-phase alternating current (AC) circuits. Capacitors, inductors, time constants, resonance, resistive-inductivecapacitive (RLC) circuits and simple filters are studied utilizing a hands-on approach.

MEC-245 Industrial Electronics

3 credits/3 class hours

Prerequisite: MEC-240

This course covers basic semiconductor operation focusing on setup and applications of diodes, transistors, rectifiers, filters and amplifiers. This is accomplished through a series of hands-on exercises performed in the lab. Circuit analysis and troubleshooting techniques are also developed in the laboratory.

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 hours

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 optoelectronic 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 hematology techniques and hematology 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/ 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-106Prerequisite: *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-110Prerequisite: *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-114Prerequisite: *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-116Prerequisite: *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 Introduction to Music Technology

3 credits/1.5 lecture & 1.5 studio hours

This course introduces students to the technologies used in music production. It covers Musical Instrument Digital Interface (MIDI) principles and techniques, as well as the computer applications and outboard equipment used by professional audio engineers. The software used in this class includes programs for audio editing, sequencing and score writing. Instruction is combined with practical application on a digital audio workstation.

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 world history.

MUS-205 & MUS-206 (see MUS-105)**MUS-209 & MUS-210 (see MUS-109)****MUS-213 & MUS-214 (see MUS-113)****MUS-215 & MUS-216 (see MUS-115)****MUS-126 Instrumental/Vocal Ensemble 1, 2, 3, 4**

2 credits/3 studio hours

MUS-127Prerequisite: *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 signing. 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-170 Audio Recording 1

3 credits/1.5 lecture & 1.5 studio hours

This course provides an introduction to audio recording principles and techniques. It covers the physics of sound, analog/digital recording principles and the basic operation of recording studio equipment. Coursework includes the study of microphone selection and placement, recording

consoles, signal processing and mixing. Instruction is combined with practical application in a recording studio.

MUS-171 Audio Recording 2

3 credits/1.5 lecture & 1.5 studio hours
Prerequisites: *MUS-170*

This course builds upon the recording principles and techniques developed in *MUS-170*, Audio Recording 1. It covers advanced signal processing, mixing and mastering techniques. Instruction is combined with practical application in both live and studio recording environments.

MUS-172 The Business of Music

3 credits/3 lecture hours

This course provides an overview of the business issues encountered in the music industry. It covers music publishing, marketing and distribution; royalties, copyrights and licensing; recording contracts and artist representation; and entrepreneurship. Coursework includes discussion of the various career opportunities within the music industry.

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.

MUS-270 Electronic and Computer Music

3 credits/1.5 lecture & 1.5 studio hours

Prerequisites: *MUS-119*

This course builds upon the principles and techniques developed in *MUS-119*, Introduction to Music Technology. It covers advanced music production skills involving sequencing, editing, signal processing, mixing and sampling. Instruction is combined with practical application on a digital audio workstation.

MUS-271 Music and Audio in Media

3 credits/1.5 lecture & 1.5 studio hours

Prerequisites: *MUS-119*

This course provides an overview of the various components of current multimedia production. It covers editing, importing, embedding and synchronizing audio and video to create integrated multimedia products. Instruction is combined with practical application on a digital audio workstation.

MUS-272 Live Sound Reinforcement

3 credits/1.5 lecture & 1.5 studio hours

This course provides an overview of the equipment and techniques used in live concert sound reinforcement. It covers the operation and interconnectivity of individual sound system components, including microphones, consoles, amplifiers, speakers and monitors. Instruction is combined with practical application in a variety of live sound scenarios.

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 radio-pharmaceuticals 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**

4 credits/4 lecture hours

Prerequisites: Acceptance into PAM program; BIO-110 or BIO-151

Corequisites: BIO-161, 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

Prerequisites: Acceptance into PAM program; BIO-110 or BIO-151

Corequisites: BIO-161, PAM-102 & 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-161, PAM-101, PAM-102 & PAM-112

Corequisites: BIO-162, 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-161, PAM-101, PAM-102 & PAM-112

Corequisites: BIO-162, 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-161, PAM-101, PAM-102 & PAM-112

Corequisites: BIO-162, 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 credits/8 clinical hours per week for eight weeks

Prerequisites: Acceptance into PAM program; BIO-110 or BIO-151

Corequisites: BIO-161, 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-161, PAM-101, PAM-102 & PAM-112

Corequisites: BIO-162, 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: BIO-162, 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

4 credits/3 lecture, 2 lab & 8 clinical hours per week

Prerequisites: BIO-162, 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: BIO-162, 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 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-214 Paramedic Field Externship

4 credits/32 clinical hours per week for eight weeks

Prerequisites: BIO-162, 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

2 credits/2 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

3 credits/3 class hours

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 psychosocial 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 psycho-social 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 hour

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-112C Introduction to Physical Therapy Clinical Education

1 credit/4 clinical hours per week for 10 weeks & 1 lecture hour per week for 2 weeks
Prerequisites: *BIO-161 & PTA-101*
Corequisites: *PTA-102 & PTA-103*

This course provides the student with an introductory experience to physical therapy clinical education. The lecture portion of this course introduces the student to the roles and functions in physical therapy and responsibilities and relationships of physical therapy personnel. The clinical portion of this course provides the student with an opportunity to participate in physical therapist-directed activities commensurate with education level and experience. 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. This course requires a per credit health career fee; check the tuition and fee schedule for the current rate.

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-211C Physical Therapy Clinical Education 1

2 credits/7.5 clinical hours per week for 10 weeks & 2.5 lecture hours per week for two weeks
Prerequisites: *PTA-102, PTA-103 & PTA-112*
Corequisites: *PTA-201, PTA-202 & PTA-203*

This course provides the student with experiences to apply, integrate and perform learned clinical skills on patients under the supervision of a licensed Physical Therapist in a physical therapy clinical environment. The lecture portion of this course includes content designed to prepare the student to meet performance expectations and develop competency in the provision of selected components of intervention and in components of data collection techniques as directed in the plan of care developed by the Physical Therapist. The clinical portion of this course provides the student with an opportunity to participate in physical therapist directed activities commensurate with education level and experience. 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. This course requires a per credit health career fee; check the tuition and fee schedule for the current rate.

PTA-212C Physical Therapy Clinical Education 2

5 credits/37.5 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-213C Physical Therapy Clinical Education 3

5 credits/37.5 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 hour

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 hour

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 hour

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 hour

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-butt 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-butt 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.

ADMINISTRATION & ACADEMIC COMMUNITY

CCAC Administrative Offices

Office of the Provost/Executive Vice President for Academic & Student Affairs

Provost/Executive Vice President for Academic & Student Affairs Stuart Blacklaw, PhD
 Administrative Assistant Heather Murphy
 & Suzanne McHenry

Grant Project Development

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 Grants Development Coordinator Kathy Weir
 Grant Resource Associate Natasha Walton

Financial Aid

Executive Director Jamie Hightower-Poindexter

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

Chief Information Officer Diane Jacobs (Interim)
 Systems Analysis & ERP Support Manager . . . Alan Bickerton
 Lead Systems Analyst Deborah Barb
 Lead Developer & Database Administrator
 Jason Lander (Interim)
 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
 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,
 Emily Birch, Gary Fisher & Thomas DeLong

Learning Outcomes & Achieving the Dream

Director Mary Kate Quinlan

Nursing

Dean Kathy L. Mayle
 Nursing Education Data & Adjunct Faculty Administrator
 Devon George

Online Learning

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 Instructional Technologist Justin Busch
 Online Support Specialist Tawanda Wright

Registrar

Registrar Diane Jacobs, EdD

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 Planning & Research Assistant Director . . . Giovanni Garofalo
 Analyst Lucy Wang

Title III Grant

Coordinator of Learning Commons Ria Buford

Veterans Services

Director vacant
 Assistant Director Kelly Steffler
 Student Success Facilitator Priscilla Robertson
 & Sharmyn Straughters

Office of the Vice President for Workforce Development

Vice President

Vice President Theresa Bryant
 Administrative Assistant Patricia Burnett
 Assistant Vice President & Dean Workforce Development
 Debra Killmeyer

Business & Community Operations

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 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

Project Manager Anne Tanski
 Public Safety Assistant Director Richard Hilinski

Community Education

Director Elizabeth Sommers

Office of Vice President for Finance

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 Administrative Assistant Shelly Hawkins-Lee

Finance & Controller

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 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

Purchasing Director Michael Cvetic
 Contracts Director Karen Hoskinson

Enterprise Risk Management

Manager Mark Guerriero

Safety & Security

Director Edward Bogats

CCAC Educational Foundation

Chief Executive Officer

Chief Executive Officer Rose Ann DiCola
 Major & Planned Gifts Director vacant

Development Director

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

Special Assistant to the President for Diversity & Inclusion
 Clyde Pickett
 Civil Rights Compliance Officer Sumana Misra-Zets
 Civil Rights Investigator Alisha Lynn Carter
 Senior Secretary Bev Fury

Office of Vice President for Human Resources

Vice President

Vice President Kimberly Manigault
 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

Chief Facilities Officer James C. Messer
 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 Nicholas Jaramillo
 Web Content Manager Amanda Lawson
 Web Producer Jennifer Scott

College Auditor

College Auditor Daniel M. Carr

Governmental & External Affairs

Governmental & External Affairs Executive Director
 Nancilee Burzachechi, JD, CFRE

Strategic College Initiatives

Strategic College Initiatives Executive Director
 Mary Frances Archey, EdD

Vice President & College Counsel

Vice President & College Counsel
 Anthony L. DiTommaso, Esq.

Campus Administration

ALLEGHENY CAMPUS

President

President Evon Washington Walters, EdD
Administrative Assistant Judy Collins

Academic Affairs

Academic Affairs Dean Michael J. Self, PhD

Associate Dean

Associate Dean Richard Betterts
On-site Director Betsy Rozen

Administration

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

Safety & Security Director Edward Bogats
Assistant Director David Grimes

Special Projects

Special Projects Director Susan Gall (Interim)
Student Success Coach Miles Hines, Talisa Reed
. & Ginger Underwood

Student Development

Student Development Dean Roslynn Wilson, EdD
Assistant Dean of Student Development
. Jane Greenwood (Interim)

Admissions

Admissions Director Kristin Spiker

Student Recruiter

Student Recruiter Theodore Ketchum

Counseling Services (AFT) (*see page 225*)

Financial Aid

Financial Aid Director Kevin A. Totty
Financial Aid Specialist Jessica Rahim
International Students Director Kristin Spiker

Job Placement & Career Services Director

Job Placement & Career Services Director Robert Kmetz
Employment Specialist Anthony Wieckowski
Registration & Advisement Director Lucille Adkins
Specialized Programs Director Darla Coleman
Student Life Director Christine McQuaide (Interim)
Student Development Specialist Gaina Miklusko
. & Robert Keslar

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 Vladimir St. Surin (Interim)

BOYCE CAMPUS

President

President The Honorable Charles J. Martoni, PhD
Administrative Assistant Janet Teti

Academic Affairs

Academic Affairs Dean Richard Allison

Associate Dean

Associate Dean Tomi Waters

Administration

Administration Dean Nancy Jenkins
Student Accounts/Business Assistant Coordinator
. Catherine Brock
Physical Plant Supervisor Jil DeShong
Housekeeping Supervisor Edmund Uniatowski

Safety & Security

Safety & Security Director W. Joseph Hixson

Student Development

Student Development Dean Yvonne Burns
Admissions Director Elizabeth Strenkowski, PhD

Counseling Services (AFT) (*see page 225*)

Financial Aid

Financial Aid Director Nancy Keilly
Financial Aid Specialist Christine Carr

Job Placement & Career Services

Job Placement & Career Services Director Pamela Nichols
Employment Specialist Carol Johnson

Registration & Advisement

Registration & Advisement Director Quiana Golphin

Student Life

Student Life Director Frank Kaufman
Student Development Specialist David Devenzio
. & Linda Neubauer
Student Success Coach Ashley Clark & Marshall Ellison

Supportive Services for Students with Disabilities

Supportive Services for Students with Disabilities Director
. Patricia Florentine
Student Support Specialist Edward Adams

Vocational Education

Vocational Education Director Darlene Billeck

Braddock Hills Center

Assistant Dean Gyndolyn Bradford
MOST Project Director Cathy Hester

NORTH CAMPUS

President

President Gretchen Mullin-Sawicki, PhD
 Administrative Assistant Joan Follen

Academic Affairs Dean

Academic Affairs Dean Jeff Thomas

Associate Dean

Associate Dean David Young
 Career & Technical Education Director Laurel Westrom

Administration Dean

Administration Dean John Boehm
 Physical Plant Supervisor Kenneth Weber
 Housekeeping Supervisor Aaron Kotys

Safety & Security

Safety & Security Director David Schwab

Student Development

Dean of Student Development Mary Lou Kennedy

Admissions Director

Admissions Director Rhena McCaskill
 Student Recruiter James Bender
 Career & Technical Education Director Laurel Westrom
 Nursing Admissions Coordinator Amber Reed

Counseling Services (AFT) (see page 225)**Financial Aid Director**

Financial Aid Director Jynhae Tyler

Financial Aid Specialist

Financial Aid Specialist Jordan Gass

Job Placement & Career Services

Job Placement & Career Services Director
 Michelle Talbert-Horsey

Registration & Advisement

Registration & Advisement Director Susan McCleary

Student Life

Student Life Director Antoinette (Nina) Mulé Lyons
 Student Development Specialist Charles Bell
 Student Success Coach Molly Christy & Sean Thomas

Supportive Services for Students with Disabilities

Supportive Services for Students with Disabilities Director
 Della Pappas
 Student Support Specialist Theresa Smochko

West Hills Center

Assistant Dean Ronald Logreco
 West Hills Center Director Derek Fischer

SOUTH CAMPUS

President

President Charlene Newkirk, JD
 Administrative Assistant Kimberly Borza

Academic Affairs Dean

Academic Affairs Dean Brenda Trettel, EdD

Associate Dean

Associate Dean Barbara Evans, EdD

Administration Dean

Administration Dean Sharon Mills
 Student Accounts/Business Assistant Coordinator
 Patricia Martler
 Physical Plant Supervisor vacant
 Housekeeping Supervisor Brian Richards

Safety & Security

Safety & Security Director William Hixson

Student Development

Student Development Dean Kelli Maxwell, PhD

Admissions Director

Admissions Director Tara Zirkel
 Student Recruiter Michael Rose
 Career & Technical Education Director Pamela Kennedy

Counseling Services (AFT) (see page 225)**Financial Aid**

Financial Aid Director Kyle Mosley
 Financial Aid Specialist Kelly Yurkovich

Job Placement & Career Services

Employment Specialist Jennifer Holbert
 Registration & Advisement Director Tiffany Evans, PhD

Student Life

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

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;
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Boyce Campus

Megan Crane, Counselor (2015)

MS, Holy Family University
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Lenore Hiller, Assistant Professor & Counselor (1997)

MSEd, Duquesne University
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Fanny Liu, Professor & Counselor (2000)

MEd, University of Pittsburgh
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Daniel Maddox, Assistant Professor & Counselor (2008)

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LIBRARY & LEARNING RESOURCES

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CAS, University of Pittsburgh
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EDUCATIONAL TECHNICIANS

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Graphics, Office of College Services

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TEACHING FACULTY

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MD, World University School of Medicine
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BS, Colby-Sawyer College
MPH, University of Michigan
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BS, Pennsylvania State University
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 MS, Wichita State University
 Mathematics, North Campus

Lisa DiMaria, Assistant Professor (2013)

BSED, Duquesne University
 MSED, Duquesne University
 Developmental Studies, Allegheny 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

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 & Jefferson College
MS, Duquesne University
Biology, Allegheny Campus

Beth Edson, Associate Professor

BA, La Roche College
Diagnostic Medical Sonography, Boyce Campus

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
 MEd, 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
 MEd, 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 & 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 & Jefferson College
MS, Duquesne University
Chemistry, North Campus

Joanna Kazmierczak, Professor (2005)

BS, Washington & 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 & 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 Lindenfelser, Professor (1986)

BA, Thiel College
 MBA, Youngstown State University
 Business, South Campus

Richard Lippert, Assistant Professor (2014)

Paramedics, Boyce Campus

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, 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 & 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, Community College of Allegheny County
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 Campus

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 (2005)
 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 Sandroock, 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, Waynesbug 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
Political Science/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 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

Eugene Zizka, Professor (1980)

AA, Cuyahoga Community College
BS, The Ohio State University
MS, University of Pittsburgh
PhD, University of Pittsburgh
Physics, Allegheny Campus

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 16 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 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.

Institutional GPA. Grade point average calculated each term, including only college level courses. Developmental course grade points excluded.

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.)*

**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 TITLE IX NOTIFICATION

It is the further policy of the College to comply with Title IX of the Education Amendments of 1972, which prohibits discrimination based on gender or sex in the College's educational programs and activities, as well as the requirements of the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act (Clery Act), as amended by the Campus Sexual Violence Elimination Act (SaVE Act). Conduct prohibited under Title IX, the Clery Act and the SaVE Act includes sexual harassment, sexual misconduct and acts of sexual violence, including sexual assault, domestic violence, dating violence and stalking. In furtherance of this Policy, the College will designate a Title IX Coordinator whose responsibilities will include overseeing the College's response to Title IX reports and complaints and identifying and addressing patterns or systemic issues revealed by such reports and complaints. With the exception of staff designated by the College to provide confidential professional counseling services to victims of such conduct, College employees are required to inform the Title IX Coordinator of incidents or suspected incidents of sex or gender discrimination, sexual harassment or sexual violence against a student, employee, vendor or guest of which they become aware.

Questions or complaints regarding Title IX issues may be directed to the College's Title IX Coordinator or the United States Department of Education's Office of Civil Rights as follows:

CCAC Civil Rights Compliance Officer/Title IX Coordinator
808 Ridge Avenue, Byers Hall–Room 317, Pittsburgh, PA 15212
Telephone: 412.237.4535 • Email: smisra@ccac.edu

Office for Civil Rights
US Department of Education, Philadelphia Office
100 Penn Square East, Suite 515, Philadelphia, PA 19107-3323
Facsimile: 215.656.8605 • Telephone: 215.656.8541
Customer Service Hotline #: 800.421.3481
Email: OCR.Philadelphia@ed.gov
Web: <http://www.ed.gov/ocr>

Accommodations for Individuals with Disabilities

The College recognizes its responsibility to provide academic and nonacademic services and programs equally to individuals with and without disabilities. To this end, the College will provide reasonable accommodations for qualified students and employees with identified disabilities consistent with the

requirements of the Americans with Disabilities Act, Sections 503 and 504 of the Rehabilitation Act, and other federal, state and local laws and regulations.

The College will maintain an Office of Supportive Services at each campus location to receive, review, and evaluate requests from students who require an accommodation with respect to their educational program. The College's Civil Rights Compliance Officer/Title IX Coordinator will have overall responsibility for coordinating disability services across all College campus locations. Contact information for these resources is as follows:

CCAC Civil Rights Compliance Officer/Title IX Coordinator
808 Ridge Avenue, Byers Hall - Room 317, Pittsburgh, PA 15212
Telephone: 412.237.4535 • Email: smisra@ccac.edu

Boyce Campus

Director, Disability Services
North Wing-Room N560
Telephone: 724.325.6604
TTY: 724.325.6733

Allegheny Campus

Director, Disability Services
Library Building-Room 114
Telephone: 412.237.4612
TTY: 412.237.4552

North Campus

Director, Disability Services
Room 1008
Telephone: 412.369.3649
TTY: 412.369.4110

South Campus

Director, Disability Services
Building B-Room 311
Telephone: 412.469.6207
TTY: 412.469.6005

The College's Office of Human Resources is designated to receive, review and evaluate employee requests for accommodations in the workplace due to an identified disability.

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

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)

- Administrative hearings will be heard by the dean of Student Development or designee, and will be informal in nature.
- 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 tommergy;
- 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.ncherp.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 Military and Veterans Services, 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.

ALPHABETICAL LIST OF PROGRAMS & PROGRAM AREAS

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CCAC ACADEMIC CALENDAR

SUMMER 2016–FALL 2017 ACADEMIC SCHEDULE¹

Summer Term 2016

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 ²	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

Spring Term 2017³

16-week spring term classes begin	January 17
14-week spring term classes begin	January 30
Spring break	April 10–16
16-week classes end	May 8
14-week classes end	May 7
14-week classes Reading Day	May 8
Finals week	May 9–15

Summer Term 2017

Memorial Day observed, college closed	May 27–29
Independence Day observed, college closed	July 4
First summer six-week session	May 22–July 1
First summer eight-week session	June 5–July 29
First summer ten-week session	May 22–July 29
Second summer six-week session ²	July 3–August 12

Fall Term 2017³

16-week fall term classes begin	August 21
Labor Day observed, college closed	September 4
14-week fall term classes begin	September 5
Thanksgiving Break	November 20–26
Classes end	December 11
Finals week	December 12–18

¹ Dates subject to change

² Second summer introduces the new academic year.

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

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.
